

2014 Semiconductor Product Guide

' 2014 ~ '

Semiconductor Product Guide

KEC

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▶ **Bipolar Junction Transistor**

▶ **Diode**

▶ **MOSFET**

▶ **IGBT**

▶ **Power Module**

▶ **Intergrated Circuit**

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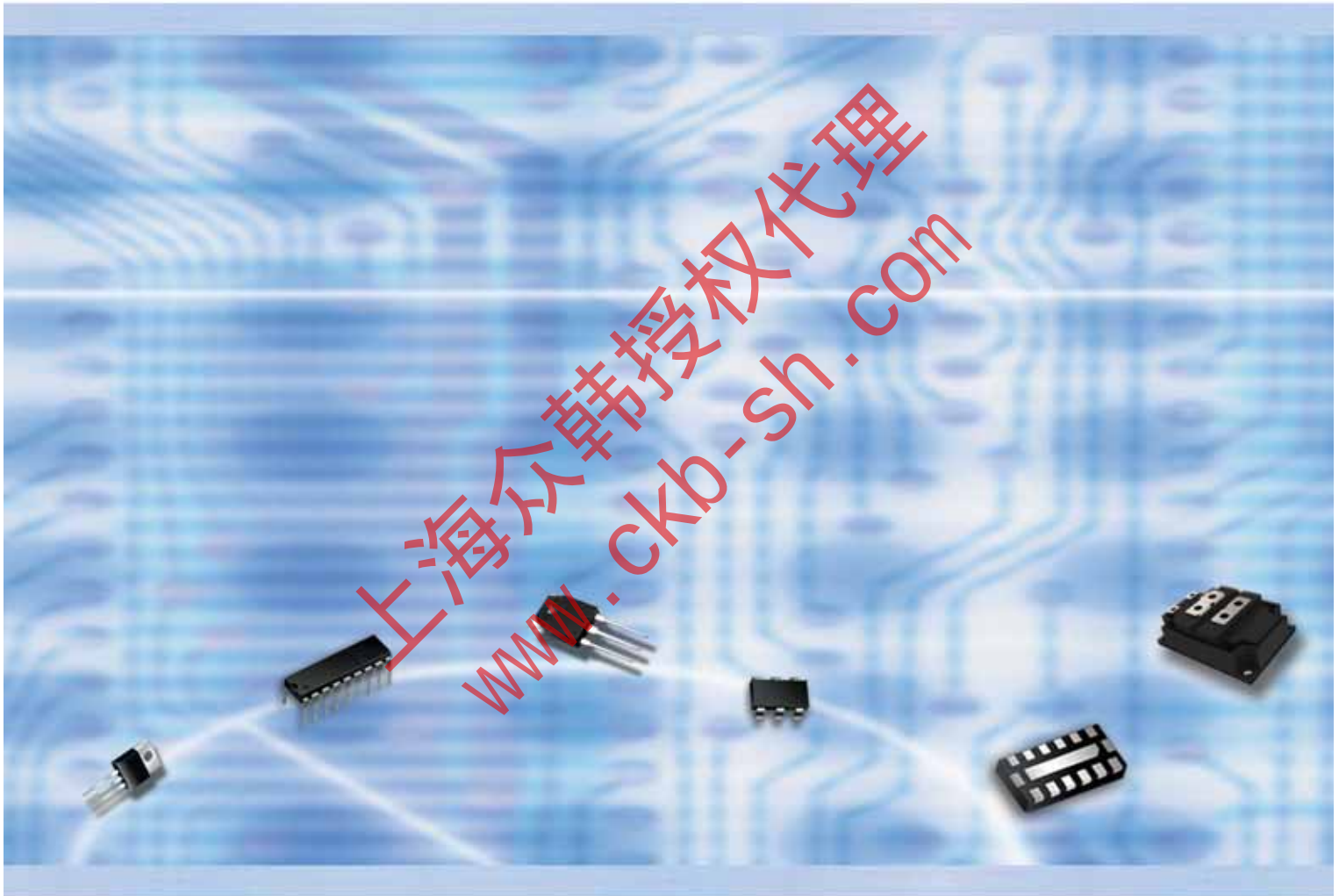


Table of Contents

BJT	4
Bipolar Junction Transistor	4
Transistor Line-up (PNP Transistor)	4 ~ 7
Transistor Line-up (NPN Transistor)	8 ~ 13
General Purpose Transistor	14 ~ 20
Complex General Purpose Transistor	21 ~ 22
Low Noise Transistor	23
Audio Muting Transistor	23
High hFE Transistor	24
Darlington Transistor	25
Strobo Flash Transistor	26
Switching Transistor	26 ~ 27
Low $V_{CE(sat)}$ Transistor	28
Junction Field Effect Transistor	29
General Purpose Junction Field Effect Transistor	29
Complex Device	30
General Purpose Transistor + Switching Diode	30
General Purpose Transistor + BRT	30
General Purpose Transistor + S-MOSFET	30
Current Regulating Device	30
Transistor with Built-in Bias Resistor (BRT)	31
BRT Line-up	31 ~ 33
General Purpose BRT	34 ~ 35
Complex BRT	36 ~ 41
High Current BRT	42
Audio Muting BRT	43
USA/European specification models type	44
General Purpose Transistor	44 ~ 46
Darlington Transistor	46
Switching Transistor	47
List of Equivalent Product	48 ~ 54
Diode	55
Switching Diode	55
Small Signal Switching Diode	55
RF Diode	56
Small Signal Band Switching Diode	56
Zener Diode	57
Zener Diode Line-up	57
100mW Zener Diode	58 ~ 59
150mW Zener Diode	60
200mW Zener Diode	61 ~ 62
300mW Zener Diode	63
500mW Zener Diode	64
1W Zener Diode	65
Low Capacitance Zener Diode	66
High Voltage Zener Diode	66
Schottky Barrier Diode	67
Small Signal Schottky Barrier Diode	67 ~ 68
Power Schottky Barrier Diode	68 ~ 69
TVS Diode	70
TVS Diode Line-up	70 ~ 72
General Purpose TVS	73 ~ 74
Low Cap TVS	74
Rectifier Diode	75
Ultrar Fast Recovery Rectifier Diode	75
Automotive Diode	76
Alternator Diode	76
Power Zener Diode (Surge Absorber)	77
List of Equivalent Product	78 ~ 79

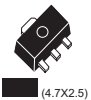
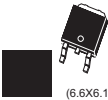
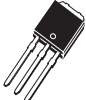
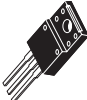
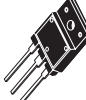
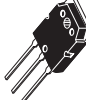
Table of Contents

MOSFET	80
MOSFET Line-up	80 ~ 81
S-MOSFET	82
Low Voltage MOSFET	83 ~ 84
High Voltage MOSFET (Planar)	85 ~ 87
High Voltage MOSFET (Super Junction)	87
List of Equivalent Product	88 ~ 90
IGBT	91
IGBT	91 ~ 92
Power Module	93 ~ 94
IGBT Module	93
1 in 1, IGBT Module	93
2 in 1, IGBT Module	93
6 in 1, 7 in 1, IGBT Module	93
Buck / Boost Module	93
MOSFET Module	94
2 in 1, MOSFET Module	94
6 in 1, MOSFET Module	
Diode Module	94
1 in 1, Diode Module	94
2 in 1, Diode Module	
Integrated Circuit	95
OP Amp.	95
Comparator	95
Voltage Stabilizer	96
Voltage Detector (Active Low)	97
CMOS Detector (Active Low, CMOS Open Drain Output Type)	98
CMOS External Delay Reset IC	98
CMOS Internal Delay Reset IC	98
150mA Small Package CMOS LDO Voltage Regulator (On/Off Controllable)	99
1A High Performance CMOS LDO Voltage Regulator (On/Off Controllable)	100
0.15A 3-Terminal Voltage Regulator (Positive)	101
0.25A 3-Terminal Low Dropout Voltage Regulator (Positive)	101
0.5A 3-Terminal Voltage Regulator (Positive)	102
1A 3-Terminal Voltage Regulator (Positive)	102
1A 3-Terminal Adjustable Voltage Regulator (Positive)	103
1A 4-Terminal Low Dropout Voltage Regulator (On/Off Controllable) (Positive)	103
2A 4-Terminal Low Dropout Voltage Regulator (On/Off Controllable) (Positive)	104
3A 4-Terminal Low Dropout Voltage Regulator (On/Off Controllable) (Positive)	104
2A 4-Terminal Low Dropout Voltage Regulator (Low Supply Current & On/Off Controllable) (Positive)	105
3A 4-Terminal Low Dropout Voltage Regulator (Low Supply Current & On/Off Controllable) (Positive)	105
5A 4-Terminal Low Dropout Voltage Regulator (Low Supply Current & On/Off Controllable) (Positive)	105
0.15A 3-Terminal Voltage Regulator (Negative)	105
1A 3-Terminal Voltage Regulator (Negative)	106
1A 3-Terminal Low Dropout Voltage Regulator (Quasi-LDO Type)	107
1A 4-Terminal Low Dropout Voltage Regulator (Low Supply Current & On/Off Controllable) (Positive)	107
Transistor Array & Interface Driver IC	108
Switching Regulator IC (DC/DC Converter)	109
Telecommunication IC	109
Power Supply Controller	109
USB Power Switch IC	110
List of Equivalent Product	111 ~ 112
Index	113 ~ 118
KEC Address	119

PNP Transistor($V_{CEO} : -12V \sim -65V$)

V_{CEO}	I_C	TFSM	TFSV	TFS6	VSM	ESM	TESV	TES6	USM	USV	US6	TSM	TSV	TS6	SOT-23
		(Unit: mm) 													
		■ (0.6 X0.8)	■ (1.0X0.8)	■ (1.0X0.8)	■ (1.2 X0.8)	■ (1.60X0.85)	■ (1.6 X1.2)	■ (1.6 X1.2)	■ (2.0X1.25)	■ (2.0X1.25)	■ (2.0X1.25)	■ (2.9X1.6)	■ (2.9X1.6)	■ (2.9X1.6)	■ (2.9X1.3)
-12V	-500mA					KTA2012E		KTX213E			KTX321U KTX213U KTX215U				
	-1.5A								KTA1532U						
-20V	-200mA				KTA2013V										
	-1A											KTA1531T			
	-1.5A											KTA1532T			
	-3A											KTA1535T			
	-5A											KTA1536T			
-25V	-1.5A														MPS8550S
-30V	-100mA														
	-500mA							KTA2015							KTA1505S KTC9012S MMBTA63
	-800mA														KTA1298 KTC8550S
	-1.5A														
	-2A											KTA1544T			
	-3A											KTA1542T			
-40V	-200mA														KN3906S 2N3906S
	-600mA														KN4403S
-45V	-100mA								BC857W						BC857 BC860
	-200mA														
	-500mA								BC807W						
	-800mA														BC807
-50V	-150mA	KTA2014F			KTA2014V	KTA2014E	KTX102E KTA701E	KTA2014			KTA701U KTA711U KTA712U				KTA1504S KTC9015S
	-200mA											KTB1234T			
	-500mA														
	-1A											KTA1551T			
	-2A														
	-3A											KTA1552T			
-60V	-600mA								KIN2907AU						KIN2907AS
	-1A														
	-3A														
	-5A														
-65V	-100mA														BC856

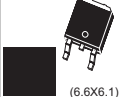
PNP Transistor($V_{CEO} : -12V \sim -65V$)

SOT-89	SOT-223	DAK	TO-92	TO-92L	IPAK(1)	TO-126	TO-220IS	TO-3P(H)IS	TO-3P(N)
 (4.7X2.5)	 (6.8X1.8)	 (6.6X6.1)							
KTA1001									
		KTA1242D		KTA1241					
			BC558						
			KTA1270						
KTA1664			KTA1271						
KTA1663									
			KTA1282	KTA1273					
						KTB772	KTA1658		
			KN4402 KN4403						
			BC557						
			KTA539						
			BC327						
			KTA1266						
			KTA200						
KTA1666		KTA1718D		KTA1281		KTA1715			
KTB1124				KTB985					
			KN2907A KTN2907A						
KTA1668			MPS751						
		KTA1040D					KTA1046 KTB1366 KTB1424		
		KTA1385D				KTB1151			
			BC556						

PNP Transistor(V_{CEO} : -80V~ -600V)

V _{CEO}	I _C	TFSM	TFSV	TFS6	VSM	ESM	TESV	TES6	USM	USV	US6	TSM	TSV	TS6	SOT-23	SOT-89
		 (0.6 X0.8)	 (1.0X0.8)	 (1.0X0.8)	 (1.2 X0.8)	 (1.60X0.85)	 (1.6 X1.2)	 (1.6 X1.2)	 (2.0X1.25)	 (2.0X1.25)	 (2.0X1.25)	 (2.9X1.6)	 (2.9X1.6)	 (2.9X1.6)	 (2.93X1.3)	 (4.7X2.5)
-80V	-400mA															KTA1662
	-500mA														MMBTA56	
	-1A															KTB1260
	-4A															
	-7A															
-100V	-3A															
	-5A															
	-6A															
-120V	-800mA															KTA1661
	-1A															
	-1.2A															
	-5A															
	-10A															
-140V	-10A															
	-12A															
-150V	-50mA															
	-600mA														2N5401S	
-160V	-1A															
	-1.5A															
-180V	-1.5A															
	-2A															
-230V	-1A															
	-15A															
-250V	-50mA															
-300V	-50mA															
	-100mA															
	-500mA														MMBTA92	
-400V	-100mA															KTA1759
	-500mA															
	-2A															
-600V	-1A															

PNP Transistor(V_{CEO} : -80V~ -600V)

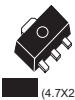
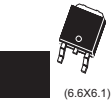
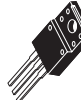
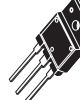
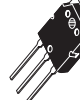
SOT-223	DPAK	TO-92	TO-92L	IPAK(1)	TO-126	TO-220IS	TO-3P(H)IS	TO-3P(N)
 (6.5X3.5)	 (6.6X6.1)							
			KTA1274					
			KTB1241					
						KTB1368		
			KTA1572			KTB1370		
						TIP32CF		
	KTA1042D					KTA1049 KTB1367		
						TIP42CF		
			KTA1023					
	KTA1045D				KTB631K			
					KTA1704			
						KTB1423		
							KTB778	
								KTA1695
								KTB817
			KTA1024		KTA1360			
		2N5401C						
	KTA1225D		KTA1275					
					KTA1700	KTA1659		
						KTA1659A		
						KTB1369		
						KTA1837		
								KTA1962A
		BF423						
		BF421						
					KTA1381			
			KTA1277		KTA1703			
	KTA1862D							
	KTA1807D			KTA1807L				

Note) : TO-3P(N)-E PKG

NPN Transistor ($V_{CE0} : 10V \sim 30V$)

V_{CE0}	I_C	TFSM	TFSV	TFS6	VSM	ESM	TESV	TES6	USM	USV	US6	TSM	TSV	TS6	SOT-23
		 (0.6 X0.8)	 (1.0X0.8)	 (1.0X0.8)	 (1.2 X0.8)	 (1.60X0.85)	 (1.6 X1.2)	 (1.6 X1.2)	 (2.0X1.25)	 (2.0X1.25)	 (2.0X1.25)	 (2.9X1.6)	 (2.9X1.6)	 (2.9X1.6)	 (2.93X1.3)
10V	40mA														KTC3600S
11V	500mA					KTC4072E		KTC802E							
15V	50mA										KTC813U				
20V	300mA										KTC814U			KTC812T	KTC2875 KTD1304
	1A										KTC3531T				
	1.5A										KTC3532T				
	3A										KTC3535T				
	5A														
25V	1.5A														MPS8050S
30V	20mA					KTC4080E									
	100mA														BC848
	400mA														MMBTA517
	500mA								KTC4076				KTC611T	KTC811T	KTC3876S KTC9013S MMBTA13
	800mA														KTC3265 KTC8050S
	1.5A														
	2A											KTC3544T			
	3A											KTC3542T			

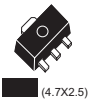
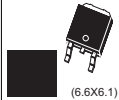
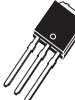
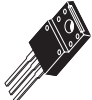
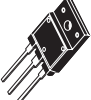
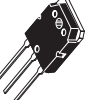
NPN Transistor (V_{CEO} : 10V ~ 30V)

SOT-89	SOT-223	DAK	TO-92	TO-92L	IPAK(1)	TO-126	TO-220IS	TO-3P(H)IS	TO-3P(N)
 (4.7X2.5)	 (6.5X3.5)	 (6.6X6.1)							
			KTC2874 KTD1302						
		KTC3072D							
			KTC3211						
			BC548 BC549						
			BC517 KTC3202						
KTC4376			KTC3203						
KTC4375									
				KTC3205					
						KTD882	KTC4369		

NPN Transistor ($V_{CEO} : 40V \sim 100V$)

VCEO	IC	TFSM	TFSV	TFS6	VSM	ESM	TESV	TES6	USM	USV	US6	TSM	TSV	TS6	SOT-23	
		(Unit: mm)  ■ (0.6 X0.8)	 ■ (1.0X0.8)	 ■ (1.0X0.8)	 ■ (1.2 X0.8)	 ■ (1.60X0.85)	 ■ (1.6 X1.2)	 ■ (1.6 X1.2)	 ■ (2.0X1.25)	 ■ (2.0X1.25)	 ■ (2.0X1.25)	 ■ (2.9X1.6)	 ■ (2.9X1.6)	 ■ (2.9X1.6)	 ■ (2.93X1.3)	
40V	200mA							2N2904E								KN3904S 2N3904S
	600mA								KTN2222AU							KTN2222AS KN4401S
	2A															
45V	100mA								BC847W							BC847 BC850
	500mA															
	800mA															BC817
50V	150mA	KTC4075F			KTC4075V	KTC4075E	KTX401E KTC601E	KTC801E KTC811E KTC812E KTX102E	KTC4075	KTX402U	KTC801U KTC811U KTC812U					KTC3295 KTC3875S KTC9014S
	1A											KTC3551T				
	2A															
	3A											KTC3552T				
60V	1A															
	3A															
	4A															
	5A															
65V	100mA															BC846
80V	400mA															
	500mA															MMBTA06
	1A															
	3A															
	4A															
	5A															
	8A															
100V	1A															
	2A															
	3A															
	5A															
	6A															
	7A															
	25A															

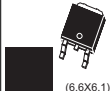
NPN Transistor (V_{CEO} : 40V ~ 100V)

SOT-89	SOT-223	DAK	TO-92	TO-92L	IPAK(1)	TO-126	TO-220IS	TO-3P(H)IS	TO-3P(N)
 (4.7X2.5)	 (6.5X3.5)	 (6.6X6.1)							
			KN3904 2N3904						
			KN2222A KN4401 KTN2222A						
						KTC3964			
			BC547						
			KTC200						
			BC337						
			KTC3112 KTC3198			KTC3114			
KTD1003				KTD1028					
KTC4379		KTC2815D		KTC3209		KTC2814			
KTD1624				KTD1347					
KTC4378			MPS651 KTC1008	KTD863					
		KTC2020D KTC2825D KTC2030D					KTC2026 KTD2058 KTD2424 KTC2036		
							KTC1003		
		KTC5103D				KTD1691			
			BC546						
KTC4374				KTC3227					
KTD1898				KTD1863 KTC1006					
							KTD2092		
							KTD1414 KTD2060 KTC2027		
							KTD2066		
							KTD1937		
KTC3573				KTC3572					
		MJD112		KTD2854	MJD112L				
							TIP31CF		
		KTC2022D					KTC2028 KTD1413 KTD2059		
							TIP41CF		
							KTD1415		
									TIP35C

NPN Transistor (V_{CE0} : 120V ~ 800V)

VCEO	Ic	TFSM	TFSV	TFS6	VSM	ESM	TESV	TES6	USM	USV	US6	TSM	TSV	TS6	SOT-23	SOT-89
		 (0.6 X0.8)	 (1.0X0.8)	 (1.0X0.8)	 (1.2 X0.8)	 (1.60X0.85)	 (1.6 X1.2)	 (1.6 X1.2)	 (2.0X1.25)	 (2.0X1.25)	 (2.0X1.25)	 (2.9X1.6)	 (2.9X1.6)	 (2.9X1.6)	 (2.93X1.3)	 (4.7X2.5)
120V	800mA															KTC4373
	1A															
	1.2A															
	10A															
140V	10A															
	12A															
150V	50mA															
	15A															
160V	600mA														2N5551S	
	1A															KTC4380
	1.5A															
180V	1.5A															
	2A															
230V	1A															
	15A															
250V	50mA															
300V	50mA															
	100mA											KTC3207T				
	200mA															
	500mA														MMBTA42	
400V	300mA														MMBTA44	PXTA44
	1.5A															
	5A															
	8A															
	12A															
530V	1.5A															
800V	3A															

NPN Transistor (V_{CE0} : 120V ~ 800V)

SOT-223	DPAK	TO-92	TO-92L	IPAK(1)	TO-126	TO-220IS	TO-220AB	TO-3P(H)IS	TO-3P(N)
 (6.5X3.5)	 (6.6X6.1)								
			KTC1027						
	KTC2025D				KTD600K				
					KTC2803				
								KTD998	KTC5197 KTD718
									KTC4468
									KTD1047
			KTC3206		KTC3423				
		2N5551 2N5551C							
			KTC3228						
KTC2983D					KTC2800	KTC4370			
						KTC4370A			
						KTD2061			
						KTC4793			
									KTC5242A
		BF422							
		BF420							
			KTC3207		KTC3503	KTC3229			
					KTC4217				
		MPSA42							
		MPSA44							
		KTC3003			MJE13003				
						KTC4419	MJE13005D MJE5555		
						MJE13007F			
						MJE13009F	MJE13009		
		KTC3003HV			MJE13003HV				
							KTC5027		

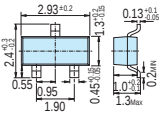
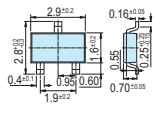
Bipolar Junction Transistor

General Purpose Transistor

Type No.	Mark	Complementary	Mark	Max. Ratings			h _{FE}				V _{CE(sat)} (V)			f _T (MHz)				Package	Outline (Unit : mm)
				V _{CEO} (V)	I _C (mA)	P _C (mW)	Min.	Max.	V _{CE} (V)	I _C (mA)	Max.	I _C (mA)	I _B (mA)	Min.	Typ.	V _{CE} (V)	I _C (mA)		
KTA2013F	F□	KTC4074F	G□	-20	-150	50	120	400	-5	-2	-0.3	-100	-10	-	-	-	-	TFSM	
KTA2014F	S□	KTC4075F	L□	-50	-150	50	70	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTC4075F	L□	KTA2014F	S□	50	150	50	70	700	6	2	0.25	100	10	80	-	10	1		
KTA2013V	U□	KTC4074V	T□	-20	-200	100	120	400	-5	-2	-0.3	-100	-10	80	-	-10	-1	VSM	
KTA2014V	S□	KTC4075V	L□	-50	-150	100	70	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTC4075V	L□	KTA2014V	S□	50	150	100	70	700	6	2	0.25	100	10	80	-	10	1		
KTA2012E	SZ	KTC4072E	LZ	-12	-500	100	270	680	-2	-10	-0.25	-200	-10	-	260	-2	-10	ESM	
KTA2014E	S□	KTC4075E	L□	-50	-150	100	70	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTC4072E	LZ	KTA2012E	SZ	12	500	100	270	680	2	10	0.25	200	10	320	2	10			
KTC4075E	L□	KTA2014E	S□	50	150	100	70	700	6	2	0.25	100	10	80	-	10	1		
BC857W	3□	BC847W	1□	-45	-100	100	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	USM	
BC807W	1□	BC817W	2□	-45	-500	100	100	630	-1	-100	-0.7	-500	-50	80	-	-5	-10		
BC847W	1□	BC857W	3□	45	100	100	110	800	5	2	0.25	10	0.5	-	300	5	10		
KTA2015	Z□	KTC4076	W□	-30	-500	100	70	240	-1	-100	-0.25	-100	-10	-	200	-6	-20		
KTA2014	S□	KTC4075	L□	-50	-150	100	70	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTC4076	W□	KTA2015	Z□	30	500	100	70	240	1	100	0.25	100	10	-	300	6	20		
KTC4075	L□	KTA2014	S□	50	150	100	70	700	6	2	0.25	100	10	80	-	10	1		
KTA1505S	AZ□	KTC3876S	W□	-30	-500	150	70	400	-1	-100	-0.25	-100	-10	-	200	-6	-20	SOT-23	
KTA1298	I□	KTC3265	E□	-30	-800	200	100	320	-1	-100	-0.4	-500	-20	-	120	-5	-10		
KTA1504S	AS□	KTC3875S	AL□	-50	-150	150	70	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTC3876S	W□	KTA1505S	AZ□	30	500	150	70	400	1	100	0.25	100	10	-	300	6	20		
KTC3265	E□	KTA1298	I□	30	800	200	100	320	1	100	0.5	500	20	-	120	5	10		
KTC3875S	AL□	KTA1504S	AS□	50	150	150	70	700	6	2	0.25	100	10	80	-	10	1		
KTC8050S	BK□	KTC8550S	BL□	30	800	350	100	300	1	50	0.5	500	20	-	120	5	10		
KTC8550S	BL□	KTC8050S	BK□	-30	-800	350	100	300	-1	-50	-0.5	-500	-50	-	120	-5	-10		
KTC9012S	BB□	KTC9013S	BC□	-30	-500	350	96	246	-1	-50	-0.25	-100	-10	150	-	-6	-20		
KTC9013S	BC□	KTC9012S	BB□	30	500	350	96	246	1	50	0.25	100	10	140	-	6	20		
KTC9014S	BD□	KTC9015S	BE□	50	150	350	100	1000	5	1	0.25	100	10	60	-	10	1		
KTC9015S	BE□	KTC9014S	BD□	-50	-150	350	100	600	-5	-1	-0.3	-100	-10	60	-	-10	-1		

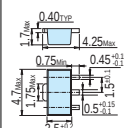
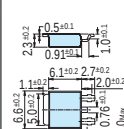
Note) : Package Mounted on 99.5% Alumina 10 × 8 × 0.6mm, □ : hFE Grade

General Purpose Transistor

Type No.	Mark	Complementary	Mark	Max. Ratings			h_{FE}				$V_{CE(sat)}$ (V)			f_T (MHz)					Package	Outline (Unit : mm)
				V_{CEO} (V)	I_C (mA)	P_C (mW)	Min.	Max.	V_{CE} (V)	I_C (mA)	Max.	I_C (mA)	I_B (mA)	Min.	Typ.	Max.	V_{CE} (V)	I_C (mA)		
BC857	3□	BC847	1□	-45	-100	350	125	800	-5	-2	-0.3	-10	-0.5	-	150	-	-5	-10	SOT-23	
BC860	4□	BC850	2□	-45	-100	350	125	475	-5	-2	-0.3	-10	-0.5	-	150	-	-5	-10		
BC807	5□	BC817	6□	-45	-800	350	100	630	-1	-100	-0.7	-500	-50	80	-	-	5	10		
BC856	3□	BC846	1□	-65	-100	350	125	475	-5	-2	-0.3	-10	-0.5	-	150	-	-5	-10		
BC848	1□	-	3□	30	100	350	110	800	5	2	0.25	10	0.5	-	300	-	5	10		
BC847	1□	BC857	3□	45	100	350	110	800	5	2	0.25	10	0.5	-	300	-	5	10		
BC850	2□	BC860	4□	45	100	350	200	800	5	2	0.25	10	0.5	-	300	-	5	10		
BC817	6□	BC807	5□	45	800	350	100	630	1	100	0.7	500	50	100	-	-	5	10		
BC846	1□	BC856	3□	65	100	350	110	450	5	2	0.25	10	0.5	-	300	-	5	10		
MMBTA06	ADX	MMBTA56	ANX	80	500	350	100	-	1	10	0.25	100	10	100	-	-	2	10		
MMBTA56	ANX	MMBTA06	ADX	-80	-500	350	100	-	-1	-10	-0.25	-100	-10	50	-	-	1	100		
MPS8050S	BH□	MPS8550S	BJ□	25	1500	350	85	300	1	100	0.5	800	80	100	190	-	10	50		
MPS8550S	BJ□	MPS8050S	BH□	-25	-1500	350	85	300	-1	-100	-0.5	-800	-80	100	200	-	-10	-50		
KN3906S	ZAA	KN3904S	ZCA	-40	-200	350	60	-	-1	-0.1	-0.25	-10	-1	-	250	-	-20	-10		
KN4403S	ZWA	KN4401S	ZUA	-40	-600	350	30	-	-1	-0.1	-0.4	-150	-15	200	-	-	-10	-20		
KN3904S	ZCA	KN3906S	ZAA	40	200	350	40	-	1	0.1	0.2	10	1	-	300	-	20	10		
KN4401S	ZUA	KN4403S	ZWA	40	600	350	20	-	1	0.1	0.4	150	15	250	-	-	10	20		
2N5401S	ZE	-	-	-150	-600	350	60	240	-5	-10	-0.2	-10	-1	100	-	300	-10	-10		
2N5551S	ZF	-	-	160	600	350	80	250	5	10	0.15	10	1	100	-	300	10	10		
MMBTA92	YV	MMBTA42	AAX	-300	-500	350	40	-	-10	-10	-0.5	-20	-2	50	-	-	-20	-10		
MMBTA42	AAX	MMBTA92	YV	300	500	350	40	-	10	10	0.5	20	2	50	-	-	20	10		
MMBTA44	APX	-	-	400	300	350	50	200	10	10	0.5	10	1	20	-	-	10	10		
KTC3207T	LX□	KTA1073T	SX□	300	100	900▲	50	150	10	20	1	10	1	50	-	-	10	20	TSM	

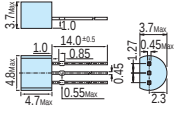
Note) □ : Package Mounted on 99.5% Alumina 10 × 8 × 0.6mm, □ : hFE Grade

General Purpose Transistor

Type No.	Mark	Complementary	Mark	Max. Ratings			h _{FE}				V _{CE(sat)} (V)			f _T (MHz)						Package	Outline (Unit : mm)
				V _{CEO} (V)	I _C (A)	P _C (W)	Min.	Max.	V _{CE} (V)	I _C (mA)	Max.	I _C (mA)	I _B (mA)	Min.	Typ.	Max.	V _{CE} (V)	I _C (mA)			
KTA1664	R□	KTC4376	P□	-30	-0.8	1@	100	320	-1	-100	-0.7	-500	-20	-	120		-5	-10	SOT-89		
KTA1663	H□	KTC4375	G□	-30	-1.5	1@	100	320	-2	-500	-2	-1.5A	-30	-	120		-2	-500			
KTA1668	J□	KTC4378	T□	-60	-1	1@	60	200	-2	-50	-0.7	-500	-50	-	150		-10	-50			
KTA1662	F□	KTC4374	E□	-80	-0.4	1@	70	240	-2	-50	-0.4	-200	-20	-	120		-10	-10			
KTB1260	Q□	KTD1898	Z□	-80	-1	1@	70	400	-3	-100	-0.4	-500	-50	-	100		-5	-50			
KTC4376	P□	KTA1664	R□	30	0.8	1@	100	320	1	100	0.5	500	20	-	120		5	10			
KTC4375	G□	KTA1663	H□	30	1.5	1@	100	320	2	500	2	1.5A	30	-	120		2	500			
KTC4378	T□	KTA1668	J□	60	1	1@	100	320	2	50	0.5	500	50	-	150		10	50			
KTC4374	E□	KTA1662	F□	80	0.4	1@	70	240	2	50	0.4	200	20	-	100		10	10			
KTD1898	Z□	KTB1260	Q□	80	1	1@	70	400	3	500	0.4	500	20	-	100		10	50			
KTA1759	AA□	-	-	-400	-100	1@	50	300	-10	-10	-0.5	-20	-2	-	-	-	-	-			
KTC4373	C□	KTA1661	D□	120	800	1@	80	240	5	100	1	500	50	-	120		5	100			
KTA1661	D□	KTA4373z	C□	-120	-800	1@	80	240	-5	-100	-1	-500	-50	-	120		-5	-100			
KTC4380	G2	-	-	160	1000	1@	160	320	5	200	1.5	500	50	-	100		5	200			
PXTA44	AP	-	-	400	300	1@	50	200	10	10	0.5	10	1	-	-	-	-	-			
KTA1242D	-	-	-	-20	-5	1	100	320	-2	-500	-0.5	-3A	-75	-	170	-	-2	-500	DPAK		
KTA1040D	-	KTC2020D	-	-60	-3	1	100	300	-5	-500	-1.0	-2A	-200	-	30	-	-5	-500			
KTA1042D	-	KTC2022D	-	-100	-5	-	70	240	-5	-1000	-2.0	-4A	-400	-	30	-	-5	-1A			
KTA1045D	-	KTC2025D	-	-120	-1	1	100	320	-5	-50	-0.4	-500	-50	-	110	-	-10	-50			
KTA1225D	-	KTC2983D	-	-160	-1.5	1	70	240	-5	-100	-1.5	-500	-50	-	100	-	-10	-100			
KTC3072D	-	-	-	20	5	1	120	700	2	500	0.4	3A	60	-	100	-	6	50			
KTC2020D	-	KTA1040D	-	60	3	1	100	300	5	500	1.0	2A	200	-	30	-	5	500			
KTC2825D	-	-	-	60	3	1	200	400	2	100	0.5	2A	100	-	150	-	10	50			
KTC2022D	-	KTA1042D	-	100	5	-	70	240	5	1000	2.0	4A	400	-	30	-	5	1A			
KTC2025D	-	KTA1045D	-	120	1	1	100	320	5	50	0.4	500	50	-	130	-	10	50			
KTC2030D	-	-	-	60	3A	1	150	250	5	500	1.0	2A	200	-	30	-	5	500			
KTC2983D	-	KTA1225D	-	160	1.5	1	70	240	5	-	1.5	500	50	-	100	-	10	100			

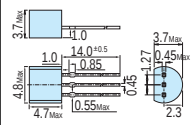
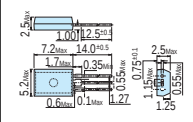
Note) @: Package Mounted on Ceramic Substrate (250mm² × 0.8t). □ : hFE Grade. : Ta=25 : Tc=25

General Purpose Transistor

Type No.	Complementary	Max. Ratings			h_{FE}				$V_{CE(sat)}$ (V)			f_T (MHz)				Package	Outline (Unit : mm)
		V_{CEO} (V)	I_C (mA)	P_C (mW)	Min.	Max.	V_{CE} (V)	I_C (mA)	Max.	I_C (mA)	I_B (mA)	Min.	Typ.	V_{CE} (V)	I_C (mA)		
BC327	BC337	-45	-800	625	100	630	-1	-100	-0.7	-500	-50	-	100	-5	-10	TO-92	
BC337	BC327	45	800	625	100	630	1	100	0.7	500	50	-	100	5	10		
BC546	BC556	65	100	625	110	450	5	2	0.6	100	5	-	150	5	10		
BC547	BC557	45	100	625	110	800	5	2	0.6	100	5	-	150	5	10		
BC548	BC558	30	100	625	110	800	5	2	0.6	100	5	-	150	5	10		
BC549	-	30	100	625	110	800	5	2	0.6	100	5	-	300	5	10		
BC556	BC546	-65	-100	625	110	450	-5	-2	-0.65	-100	-5	-	150	-5	-10		
BC557	BC547	-45	-100	625	110	800	-5	-2	-0.65	-100	-5	-	150	-5	-10		
BC558	BC548	-30	-100	625	110	800	-5	-2	-0.65	-100	-5	-	150	-5	-10		
BF423	BF422	-250	-50	625	50	-	-20	-25	-0.6	-30	-5	60	-	-10	-10		
BF421	BF420	-300	-50	625	50	-	-20	-25	-0.6	-30	-5	60	-	-10	-10		
BF422	BF423	250	50	625	50	-	20	25	0.6	30	5	60	-	10	10		
BF420	BF421	300	50	625	50	-	20	25	0.6	30	5	60	-	10	10		
KN2222A	KN2907A	40	600	625	35	-	10	0.1	0.3	150	15	300	-	20	20		
KN2907A	KN2222A	-60	-600	625	75	-	-10	-0.1	-0.4	-150	-15	200	-	-20	-50		
KN3904	-	40	200	625	40	-	1	0.1	0.2	10	1	-	300	20	10		
KN4401	KN4403	40	600	625	20	-	1	0.1	0.4	150	15	250	-	10	20		
KN4403	KN4401	-40	-600	625	30	-	-1	-0.1	-0.4	-150	-15	200	-	-10	-20		
MPS751	MPS651	-60	-1A	625	60	200	-2	-50	-0.7	-500	-50	-	150	-10	-50		
MPS651	MPS751	60	1A	625	100	320	2	50	0.5	500	50	-	150	10	50		

Note) : Package Mounted on 99.5% Alumina $10 \times 8 \times 0.6\text{mm}$
 Note) : V_{CEO} , : Typ, : $T_c=25$

General Purpose Transistor

Type No.	Complementary	Max. Ratings			h _{FE}				V _{CE(sat)} (V)			f _T (MHz)					Package	Outline (Unit : mm)
		V _{CEO} (V)	I _C (mA)	P _C (mW)	Min.	Max.	V _{CE} (V)	I _C (mA)	Max.	I _C (mA)	I _B (mA)	Min.	Typ.	Max.	V _{CE} (V)	I _C (mA)		
KTA539	KTC815	-45	-200	625	70	240	-1	-50	-0.5	-150	-15	100	-	-	-10	-10	TO-92	
KTA1270	KTC3202	-30	-500	625	70	240	-1	-100	-0.25	-100	-10	-	200	-	-6	-20		
KTA1271	KTC3203	-30	-800	625	100	320	-1	-100	-0.7	-500	-20	-	120	-	-5	-10		
KTA1282	KTC3210	-30	-2A	625	100	320	-2	-500	-2	-1.5A	-30	-	120	-	-2	-500		
KTA1266	KTC3198	-50	-150	625	70	240	-6	-2	-0.3	-100	-10	80	-	-	-10	-1		
KTA200	KTC200	-50	-500	625	70	240	-2	-50	-0.25	-100	-10	-	200	-	-6	-20		
KTC3202	KTA1270	30	500	625	70	400	1	100	0.25	100	10	-	300	-	6	20		
KTC3203	KTA1271	30	800	625	100	320	1	100	0.5	500	20	-	120	-	5	10		
KTC200	KTA200	45	500	625	70	240	2	50	0.25	100	10	-	300	-	6	20		
KTC815	KTA539	45	200	625	70	240	1	50	0.4	150	15	100	-	-	10	10		
KTC3198	KTA1266	50	150	625	70	700	6	2	0.25	100	10	80	-	-	10	1		
KTC1008	-	60	1A	625	100	320	2	50	0.5	500	50	-	150	-	10	50		
MPSA42	-	300	500	625	40	-	10	10	0.5	20	2	50	-	-	20	10		
MPSA44	-	400	300	625	50	200	10	10	0.5	10	1	-	-	-	-	-		
MPSA92	-	-300	-500	625	40	-	-10	-10	-0.5	-20	-2	50	-	-	-20	-10		
2N5401C	-	-150	-600	625	60	240	-5	-10	-0.2	-10	-1	100	-	300	-10	-10		
2N5551	-	160	600	625	80	250	5	10	0.15	10	1	100	-	300	10	10		
2N5551C	-	160	600	625	80	250	5	10	0.15	10	1	100	-	300	10	10		
KTA1273	KTC3205	-30	-2A	1W	100	320	-2	-500	-2	-1.5A	-30	-	120	-	-2	-500	TO-92L	
KTA1274	KTC3227	-80	-400	1W	70	240	-2	-50	-0.4	-200	-20	-	100	-	-10	-10		
KTA1572	KTC3572	-100	-1A	1W	150	500	-5	-500	-0.18	-500	-50	-	100	-	-10	-50		
KTC3205	KTA1273	30	2A	1W	100	320	2	500	2	1.5A	30	-	120	-	2	500		
KTD863	-	60	1A	1W	60	320	2	50	0.5	500	50	-	150	-	10	50		
KTC3227	KTA1274	80	400	1W	70	240	2	50	0.4	200	20	-	100	-	10	10		
KTD1863	-	80	1A	1W	70	400	3	500	0.4	500	20	-	100	-	10	50		
KTC3572	KTA1572	100	1A	1W	150	500	10	250	0.12	500	20	-	100	-	10	50		
KTC1027	KTA1023	120	800	1W	80	240	5	100	1	500	50	-	120	-	5	100		
KTA1023	KTC1027	-120	-800	1W	80	240	-5	-100	-1	-500	-50	-	120	-	-5	-100		
KTA1024	KTC3206	-150	-50	1W	70	240	-5	-10	-0.8	-10	-1	-	120	-	-30	-10		
KTA1275	KTC3228	-160	-1A	1W	60	320	-5	-200	-1.5	-500	-50	15	50	-	-5	-200		
KTA1277	-	-400	-500	1W	60	200	-5	-100	-1	-100	-10	-	-	-	-	-		
KTC3206	KTA1024	150	50	1W	70	240	5	10	0.5	10	1	-	120	-	30	10		
KTC3228	KTA1275	160	1A	1W	60	320	5	200	1.5	500	50	20	100	-	5	200		
KTC3207	-	300	100	1W	30	150	10	20	1	10	1	50	-	-	10	20		

60	200	-10	-10	-0.6	-20	-2	-	150	-30
60	200	-5	-100	-1	-100	-10	-	-	-
100	400	2	1A	0.5	2A	200	-	90	5
160	400	1	2A	0.3	2A	200	-	-	-
100	320	5	50	0.4	500	50	-	130	10
100	320	5	50	0.4	500	50	-	110	10
70	240	5	100	1.5	500	50	-	100	10
70	240	5	10	0.5	10	1	-	120	30
60	200	10	10	0.6	20	2	-	150	30
60	200	10	10	0.6	20	2	-	70	10

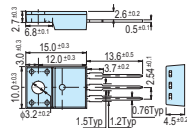
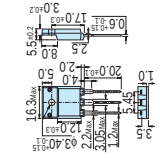
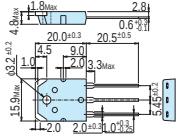
Technical drawing of a mechanical part with dimensions:

- Overall length: 11.0 ± 0.3
- Overall width: 15.5 ± 0.5
- Top flange width: 3.5
- Top flange thickness: 2.9_{Max}
- Top flange hole diameter: 0.75 ± 0.15
- Top flange hole position: 0.0_{Max}
- Top flange hole diameter: 0.7
- Top flange hole position: 0.31 ± 0.1
- Top flange hole diameter: 8.3_{Max}
- Top flange hole position: 5.8
- Top flange hole diameter: 0.65 ± 0.15
- Top flange hole position: 3.4_{Max}
- Top flange hole diameter: 1.6

[illegible]

Note) : Typ. : Ta=25 , : Tc=25

General Purpose Transistor

Type No.	Complementary	Max. Ratings				h_{FE}				$V_{CE(sat)}$ (V)			f_T (MHz)				Package	Outline (Unit : mm)
		V_{CEO} (V)	I_C (A)	P_C (W)	P_C (W)	Min.	Max.	V_{CE} (V)	I_C (mA)	Max.	I_C (mA)	I_B (mA)	Min.	Typ.	V_{CE} (V)	I_C (mA)		
KTA1659	KTC4370	-160	-1.5	-	20	70	240	-5	-100	-1.5	-500	-50	-	100	-10	-100	TO-220IS	
KTA1659A	KTC4370A	-180	-1.5	-	20	70	240	-5	-100	-1.5	-500	-50	-	100	-10	-100		
KTB1369	KTD2061	-180	-2	-	20	70	240	-10	-400	-1	-500	-50	-	100	-10	-400		
KTA1837	KTC4793	-230	-1	2	20	100	320	-5	-100	-1.5	-500	-50	-	70	-10	-100		
KTC4369	KTA1658	30	3	-	15	70	240	2	500	0.8	2A	200	-	100	2	500		
KTC2026	KTA1046	60	3	2	25	100	300	5	500	1	2A	200	-	30	5	500		
KTC2036	-	60	3	2	20	150	250	5	500	1	2A	200	-	30	5	500		
KTD2058	KTB1366	60	3	2	25	60	200	5	500	1	2A	200	-	3	5	500		
KTD2060	KTB1368	80	4	-	25	40	240	5	500	1.5	3A	300	-	8	5	500		
KTC2027	-	80	4	-	25	40	240	5	500	1.5	3A	300	-	30	5	500		
KTC2028	KTA1049	100	5	-	30	70	240	5	1A	2	4A	400	-	30	5	1A		
KTD2059	KTB1367	100	5	-	30	40	240	5	1A	2	4A	400	-	12	5	1A		
KTC4370	KTA1659	160	1.5	-	20	70	240	5	100	1.5	500	50	-	100	10	100		
KTC4370A	KTA1659A	180	1.5	-	20	70	240	5	100	1.5	500	50	-	100	10	100		
KTD2061	KTB1369	180	2	-	20	70	240	10	400	1	500	50	-	100	10	400		
KTC1006	-	80	0.8	1	100	-	-	2	150	0.7	500	20	-	-	-	-		
KTC1003	-	200▲	4	-	30	30	150	5	1A	1	4A	400	-	8	5	500		
KTC4793	KTA1837	230	1	2	20	100	320	5	100	1.5	500	50	-	70	10	100		
KTC3229	-	300	0.1	2	-	30	200	10	20	1	10	1	75	95	20	20		
TIP32CF	TIP31CF	-100	-3	2	25	10	50	-4	-3A	-1.2	-3A	-375	3	-	-10	-500	TO-3P(H)IS	
TIP42CF	TIP41CF	-100	-6	2	25	15	75	-4	-3A	-1.5	-6A	-600	3	-	-10	-500		
TIP31CF	TIP32CF	100	3	2	25	10	50	4	3A	1.2	3A	375	3	-	10	500	TO-3P(N)	
TIP41CF	TIP42CF	100	6	2	25	15	75	4	3A	1.5	6A	600	3	-	10	500		
KTB778	KTD998	-120	-10	-	80	55	160	-5	-1A	-2.5	-5A	-500	-	10	-5	-1A		
KTD998	KTB778	120	10	-	80	55	160	5	1A	2.5	5A	500	-	12	5	1A		
TIP36C	TIP35C	-100	-25	-	125	55	160	-5	-1.5A	-1.8	-15A	-1.5A	3	-	-5	-1A		
TIP35C	TIP36C	100	25	-	125	55	160	5	1.5A	1.8	15A	1.5A	3	-	5	1A		
KTA1695	KTC4468	-140	-10	-	100	55	-	-4	-3A	-0.5	-5A	-500	-	20	-12	-500		
KTB817	KTD1047	-140	-12	-	100	60	200	-5	-1A	-2.5	-5A	-500	-	15	-5	-1A		
KTA1962A	KTC5242A	-230	-15	-	130	55	160	-5	-1A	-3	-8A	-800	-	30	-5	-1A		
KTD718	KTB688	120	10	-	80	55	160	5	1A	2.5	5A	500	-	12	5	1A		
KTC4468	KTA1695	140	10	-	100	55	-	4	3A	0.5	5A	500	-	20	12	500		
KTD1047	KTB817	140	12	-	100	60	200	5	1A	2.5	5A	500	-	15	5	1A		
KTC5242A	KTA1962A	230	15	-	130	55	160	5	1A	3	8A	800	-	30	5	1A		

Note) : $T_a=25$, : $T_c=25$, ▲ : V_{CBO}

Complex General Purpose Transistor

Type No.	Mark	Internal Circuit (Top view)	Max. Ratings			h_{FE}		$V_{CE(sat)}$ (V)				f_T (MHz)				Package	Outline (Unit : mm)	
			V_{CEO} (V)	I_C (mA)	P_C (mW)	Min.	Max.	V_{CE} (V)	I_C (mA)	Max.	I_C (mA)	I_B (mA)	Min.	Typ.	V_{CE} (V)			I_C (mA)
KTC601E	L□		50	150	200	120	400	6	2	0.25	100	10	80	-	10	1	TESV	
KTA701E	S□		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	TES6	
KTC801E	L□		50	150	200	120	400	6	2	0.3	100	10	80	-	10	1		
KTC802E	LZ		12	500	200	270	680	2	10	0.25	200	10	-	320	2	10		
KTC811E	V□		50	150	200	120	400	6	2	0.25	100	10	80	-	10	1		
KTC812E	W□		50	150	200	120	400	6	2	0.25	100	10	80	-	10	1		
KTX101E	B□		± 50	± 150	200	120	400	± 6	± 2	+0.25 -0.3	± 100	± 10	80	-	± 10	± 1		
KTX102E	D□		± 50	± 150	200	120	400	± 6	± 2	-0.3 +0.25	± 100	± 10	80	-	± 10	± 1		

Note) □ : h_{FE} Grade

Complex General Purpose Transistor

Type No	Mark	Internal Circuit	Max. Ratings			h _{FE}		V _{CE(sat)} (V)				f _T (MHz)				Package	Outline (Unit : mm)	
			V _{CEO} (V)	I _C (mA)	P _C (mW)	Min.	Max.	V _{CE} (V)	I _C (mA)	Max.	I _C (mA)	I _B (mA)	Min.	Typ.	V _{CE} (V)			I _C (mA)
KTA701U	S□		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	US6	
KTA711U	E□		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTA712U	F□		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTC801U	L□		50	150	200	120	400	6	2	0.25	100	10	80	-	10	1		
KTC811U	V□		50	150	200	120	400	6	2	0.3	100	10	80	-	10	1		
KTC812U	W□		50	150	200	120	400	6	2	0.3	100	10	80	-	10	1		
KTC814U	H□		20	300	200	350	1200	2	4	0.3	30	3	-	30	6	4		
KTX101U	B□		50	150	120	400	-	6	1	0.25	100	10	-	-	-	-		
KTC611T	L□		30	500	900▲	70	240	1	100	0.25	100	10	-	300	6	20	TSV	
KTX111T	B□		±30	±500	900▲	70	240	±1	±100	±0.25	±100	±10	-	300	±6	±20	TS6	
KTC811T	L□		30	500	900▲	70	240	1	100	0.25	100	10	-	300	6	20		

Note) ▲ : Package mounted on a ceramic board (600mm² × 0.8mm), □ : hFE Grade

Low Noise Transistor

Type No.	Mark	Complementary	Mark	Max. Ratings			h_{FE}			$V_{CE(sat)}$ (V)			NF (dB)					Package	Outline (Unit : mm)
				V_{CEO} (V)	I_C (mA)	P_C (mW)	Max.	V_{CE} (V)	I_C (mA)	Max.	I_C (mA)	I_B (mA)	Max.	V_{CE} (V)	I_C (mA)	R_g (k Ω)	f (kHz)		
KTC4666	T□	-	-	50	150	100	3600	6	2	0.25	100	10	0.5	6	0.1	10	0.1	USM	

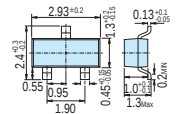
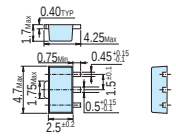
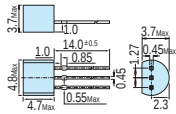
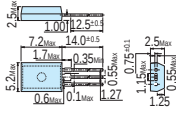
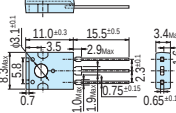
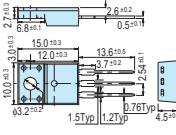
Note) : Min, : Typ, □ : hFE Grade

Audio Muting Transistor

Type No.	Mark	Internal Circuit (Top view)	Max. Ratings			h_{FE}		$V_{CE(sat)}$ (V)				f_t (MHz)		R_{ON} (Ω)				Package	Outline (Unit : mm)		
			V_{CEO} (V)	I_C (mA)	P_C (mW)	Min.	Max.	V_{CE} (V)	I_C (mA)	Max.	I_C (mA)	I_B (mA)	Typ.	V_{CE} (V)	I_C (mA)	Typ.	f (kHz)			I_B (mA)	V_{IN} (V)
KTC2875	M□	-	20	300	150	350	1200	2	4	0.3	30	3	30	6	4	-	-	-	-	SOT-23	
KTD1304	MAX	-	20	300	200	200	800	2	4	0.25	100	10	60	10	1	0.6	1	1	0.3		
KTC814U	H□		20	300	200	350	1200	2	4	0.3	30	3	30	6	4	-	-	-	-	US6	
KTC812T	M□		20	300	900▲	350	1200	2	4	0.3	30	3	30	6	4	-	-	-	-	TS6	
KTC2874	-	-	20	300	625	200	1200	2	4	0.3	30	3	30	6	4	-	-	-	-	TO-92	
KTD1302	-	-	20	300	625	200	800	2	4	0.25	100	10	60	10	1	0.6	1	1	0.3		

Note) ▲ : Package mounted on a ceramic board (600mm² × 0.8mm), □ : hFE Grade

High hFE Transistor

Type No.	Mark	Max. Ratings			h _{FE}					V _{CE(sat)} (V)			f _T (MHz)				Package	Outline (Unit : mm)
		V _{CEO} (V)	I _C (mA)	P _C (mW)	Min.	Typ.	Max.	V _{CE} (V)	I _C (mA)	Max.	I _C (mA)	I _B (mA)	Min.	Typ.	V _{CE} (V)	I _C (mA)		
KTC3295	T□	50	150	150	600	-	3600	6	2	0.25	100	10	100	250	10	10	SOT-23	
KTD1003	L□	50	1A	@1W	800	1500	3200	5	300	0.3	500	5	150	250	10	500	SOT-89	
KTC3112	-	50	150	625	600	-	3600	6	2	0.25	100	10	100	250	10	10	TO-92	
KTD1028	-	50	1A	1W	800	1500	3200	5	300	0.3	500	5	150	250	10	500	TO-92L	
KTC3114	-	50	150	1.5W	600	-	3600	6	2	0.25	100	10	100	250	10	10	TO-126	
KTD1411	-	60	4	15	2000	-	-	2	1	1.5	3	30	-	-	-	-		
KTC3964	-	40	2A	1.5W	500	-	-	1	400	0.5	300	1	-	220	2	100		
KTD2092	-	80	3A	25W	500	-	1500	1	500	0.35	1A	10	-	140	5	1A	TO-220IS	
KTD2066	-	80	5A	30W	500	-	1500	1	1A	0.35	3A	30	-	130	5	1A		
KTD1937	-	80	10A	40W	500	-	1500	1	1A	0.35	5A	50	-	70	5	1A		

Note) @ : Mounted on Ceramic Substrate (250mm × 0.8t), □ : hFE Grade, : Tc=25

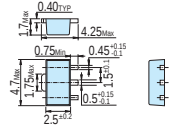
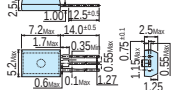
Darlington Transistor

Type No.	Mark	Complementary	Mark	Max. Ratings			h_{FE}			$V_{CE(sat)}$ (V)			f_T (MHz)			Package	Outline (Unit : mm)
				V_{CEO} (V)	I_C (mA)	P_C (mW)	Min.	V_{CE} (V)	I_C (mA)	Max.	I_C (mA)	I_B (mA)	Min.	V_{CE} (V)	I_C (mA)		
MMBTA63	AGX	-	-	-30	-500	350	5000	-5	-10	-1.5	-100	-0.1	125	-5	-10	SOT-23	
MMBTA517	UA	-	-	30	400	350	30000	2	100	1	100	1	220	2	100		
MMBTA13	AIX	-	-	30	500	350	5000	5	10	1.5	100	0.1	125	5	10		
MJD112	-	MJD117	-	100	2A	20W	1000	3	2A	2	2A	8	25	10	750	DPAK	
BC517	-	-	-	30	500	625	30,000	2	100	1	100	1	220	5	10	TO-92	
KTD2854	-	KTB2234	-	100	2A	1W	2000	2	1A	1.5	1A	1	50	2	500	TO-92L	
MJD112L	-	MJD117L	-	100	2A	20W	1000	3	2A	2	2A	8	25	10	750	IPAK(1)	
KTB1424	-	KTD2424	-	-60	-3A	25W	3000	-2	-1A	-1.5	-3A	-30	-	-	-	TO-220IS	
KTB1423	-	-	-	-120	-5A	30W	1000	-3	-500	-2	-3A	-12	-	-	-		
KTD2424	-	KTB1424	-	60	3A	25W	3000	2	1A	1.5	3A	30	-	-	-		
KTD1414	-	-	-	80	4A	25W	2000	2	1A	1.5	3A	6	-	-	-		
KTD1413	-	-	-	100	5A	25W	2000	2	3A	1.5	3A	3	-	-	-		
KTD1415	-	-	-	100	7A	30W	2000	3	3A	1.5	3A	6	-	-	-		

Note) ▲ : Package mounted on a ceramic board (600mm² × 0.8mm), : V_{CES} , : Typ, : $T_c=25$
 @ : Package mounted on a FR4 board (Cu area : 645mm², glass epoxy, $t=1.6$ mm)

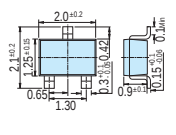
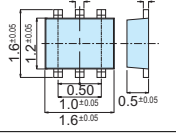
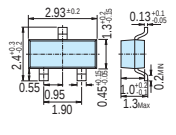
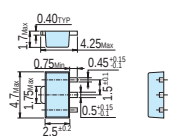
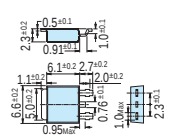
Bipolar Junction Transistor

Strobo Flash Transistor

Type No.	Mark	Complementary	Mark	Max. Ratings			h _{FE}				V _{CE(sat)} (V)			f _T (MHz)			Package	Outline (Unit : mm)
				V _{CEO} (V)	I _C (A)	@ P _C (W)	Min.	Max.	V _{CE} (V)	I _C (mA)	Max.	I _C (A)	I _B (mA)	Typ.	V _{CE} (V)	I _C (mA)		
KTA1001	K□	-	-	-20	-3	1	100	320	-2	-500	-0.5	-3	-75	170	-2	-500	SOT-89	
KTA1241	-	-	-	-20	-5	1W	100	320	-2	-500	-0.5	-3	-75	170	-2	-500	TO-92L	

Note) @ : Mounted on Ceramic Substrate (250mm² × 0.8t), □ : hFE Grade

Switching Transistor

Type No.	Mark	Complementary	Mark	Max. Ratings			h _{FE}				V _{CE(sat)} (V)			f _T (MHz)	t _{on} (ns)	t _{off} (ns)	t _d (ns)	t _r (ns)	t _{stg} (ns)	t _f (ns)	Package	Outline (Unit : mm)
				V _{CEO} (V)	I _C (mA)	P _C (mW)	Max.	V _{CE} (V)	I _C (mA)	Max.	I _C (mA)	I _B (mA)	Min.	Max.	Max.	Max.	Max.	Max.	Max.	Max.		
KTN2907AU	ZH	KTN2222AU	ZG	-60	-600	100	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		USM	
KTN2222AU	ZG	KTN2907AU	ZH	40	600	100	300	10	150	0.4	150	15	250	-	-	10	25	225	60			
2N2904E	ZC	-	-	40	200	200	300	1	10	0.2	10	1	300	-	-	35	35	200	50		TES6	
2N3906S	ZA	2N3904S	ZC	-40	-200	350	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75		SOT-23	
2N3904S	ZC	2N3906S	ZA	40	200	350	300	1	10	0.2	10	1	300	-	-	35	35	200	50			
KTN2907AS	ZH	KTN2222AS	ZG	-60	-600	350	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30			
KTN2222AS	ZG	KTN2907AS	ZH	40	600	350	300	10	150	0.3	150	15	300	-	-	10	25	225	60			
KTA1666	W□	KTC4379	U□	-50	-2A	@1W	240	-2	-500	-0.5	-1A	-50	120	100	-	-	-	1000	100		SOT-89	
KTB1124	X□	KTD1624	Y□	-50	-3A	@1W	400	-2	-100	-0.7	-2A	-100	150	70	-	-	-	450	35			
KTC4379	U□	KTA1666	W□	50	2A	@1W	240	2	500	0.5	1A	50	120	100	-	-	-	1000	100			
KTD1624	Y□	KTB1124	X□	50	3A	@1W	400	2	100	0.5	2A	100	150	70	-	-	-	650	35			
KTA1718D	-	KTC2815D	-	-50	-2A	10W	240	-2	-500	-0.5	-1	-50	100	100	-	-	-	1000	100		DPAK	
KTA1385D	-	KTC5103D	-	-60	-5A	15W	400	-1	-2A	-0.3	-2	-200	-	1,000	-	-	-	2,500	1,000			
KTA1862D	-	-	-	-400	-2A	10W	180	-5	-100	-0.5	0.5	-100	18	200	-	-	-	1800	400			
KTA1807D	-	-	-	-600	-1A	20W	120	-5	-100	-1.0	-0.3	-60	28	500	-	-	-	5,000	500			
KTC2815D	-	KTA1718D	-	50	2A	10W	240	2	500	0.5	1	50	100	100	-	-	-	1000	100			
KTC5103D	-	KTA1385D	-	60	5A	15W	400	1	2A	0.3	2	200	-	1,000	-	-	-	2,500	1,000			

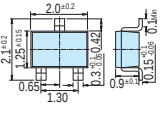
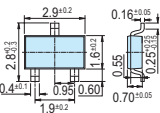
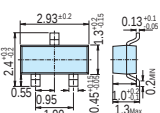
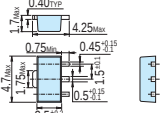
Note) : Typ, : Tc=25, : Package Mounted on 99.5% Alumina 10 × 8 × 0.6mm, @ : Mounted on Ceramic Substrate (250mm² × 0.8t), □ : hFE Grade

Switching Transistor

Type No.	Mark	Complementary	Mark	Max. Ratings			h _{FE}		V _{CE(sat)} (V)			f _T	t _{on}	t _{off}	t _r	t _{stg}	t _f	Package	Outline (Unit : mm)		
				V _{CEO} (V)	I _C (mA)	P _C (mW)	Min.	Max.	V _{CP} (V)	I _C (mA)	Max.	I _C (mA)	I _B (mA)	Min.	Max.	Max.	Max.			Max.	Max.
2N3906	-	2N3904	-	-40	-200	625	100	300	-1	-10	-0.25	-10	-1	250	0.07	0.3	0.035	0.225	0.075	TO-92	
2N3904	-	2N3906	-	40	200	625	100	300	1	10	0.2	10	1	300	0.07	0.25	0.235	0.2	0.05		
KTN2907A	-	KTN2222A	-	-60	-600	625	100	300	-10	-150	-0.4	-150	-15	200	0.045	0.1	0.04	0.08	0.03		
KTN2222A	-	KTN2907A	-	40	600	625	100	300	10	150	0.3	150	15	300	0.035	0.3	0.025	0.025	0.06		
KTC3003	-	-	-	400	1.5A	@1.1	9	38	2	500	0.5	0.5	100	4	1.1	4.7	-	4.0	0.7		
KTC3003HV	-	-	-	530	1.5A	@1.1	20	40	10	400	0.8	0.5	100	4	1.1	3.7	-	3.0	0.7		
KTA1281	-	KTC3209	-	-50	-2A	1W	70	240	-2	-500	-0.5	-1A	-50	100	0.1	1.1	-	1.0	0.1	TO-92L	
KTB985	-	KTD1347	-	-50	-2A	1W	100	400	-2	-100	-0.7	-2A	-100	150	0.07	0.5	-	0.45	0.035		
KTC3209	-	KTA1281	-	-50	2A	1W	70	240	2	500	0.5	1A	50	100	0.1	1.1	-	1.0	0.1		
KTD1347	-	KTB985	-	50	3A	1W	100	400	2	100	0.5	2A	100	150	0.07	0.7	-	0.65	0.035		
KTA1807L	-	-	-	-600	-1A	20W	30	120	-5	-100	-1.0	-300	-60	28	0.5	5.5	-	5.0	0.5	IPAK(1)	
MJE13003	-	-	-	400	1.5A	20W	9	38	2	500	0.5	500	100	4	1.1	4.7	-	4.0	0.7	TO-126	
MJE13003HV	-	-	-	530	1.5A	20W	20	40	10	400	0.8	500	100	4	1.1	3.7	-	3.0	0.7		
KTA1715	-	KTC2814	-	-50	-2A	10W	70	240	-2	-500	-0.5	-1A	-50	100	0.1	1.1	-	1.0	0.1		
KTC2814	-	KTA1715	-	50	2A	10W	70	240	2	500	0.5	1A	50	100	0.1	1.1	-	1.0	0.1		
MJE13005DF	-	-	-	400	5A	30W	18	35	5	1A	0.5	1A	200	4	0.15	5.8	-	5	0.8	TO-220IS	
MJE13007F	-	-	-	400	8A	40W	15	50	5	2A	1	2A	400	4	1.6	3.7	-	3.0	0.7		
MJE13009F	-	-	-	400	12A	50W	14	28	5	5A	1	5A	1A	4	1.1	3.7	-	3.0	0.7		
KTC4419	-	-	-	400	5A	30W	10	40	4	1.5A	0.5	1.5A	300	20	1.0	3.0	-	2.5	0.5		
KTC5027F	-	-	-	800	3A	40W	15	40	5	200	2	1.5A	300	15	0.5	3.3	-	3.0	0.3		
MJE13005D	-	-	-	400	5A	75W	18	35	5	1A	0.5	1A	200	4	0.15	5.8	-	5	0.8		
MJE13009	-	-	-	400	12A	100W	14	28	5	5A	1	5A	1A	4	1.1	3.7	-	3.0	0.7	TO-220AB	
MJE5555	-	-	-	400	5A	75W	20	40	3	0.8A	1.5	3.5A	1A	-	2.0	2.8	-	2.5	0.3		
KTC5027	-	-	-	800	3A	50W	15	40	5	200	2	1.5A	300	15	0.5	3.3	-	3.0	0.3		

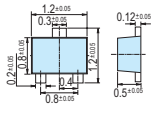
Note) : Typ, : Tc=25 , : Package Mounted on 99.5% Alumina 10 × 8 × 0.6mm, @ : Mounted on Ceramic Substrate (250mm² × 0.8t), □ : hFE Grade

Low V_{CE(sat)} Transistor

Type No.	Mark	Complementary	Mark	Max. Ratings			h _{FE}				V _{CE(sat)} (V)			f _T (MHz)			Package	Outline (Unit : mm)
				V _{CEO} (V)	I _C (A)	P _C (mW)	Min.	Max.	V _{CE} (V)	I _C (mA)	Max.	I _C (mA)	I _B (mA)	Typ.	V _{CE} (V)	I _C (mA)		
KTA1532U	2A	-	-	-12	-1.5	200	270	680	-2	-200	-0.2	-500	-25	400	-2	-200	USM	
KTA1531T	SA□	KTC3531T	HA□	-20	-1	900▲	120	400	-2	-50	-0.3	-500	-50	180	-10	-50	TSM	
KTA1532T	SB	KTC3532T	HB	-20	-1.5	900▲	200	560	-2	-100	-0.18	-750	-15	210	-2	-300		
KTA1535T	SD	KTC3535T	HD	-20	-3	900▲	200	560	-2	-500	-0.165	-1.5A	-30	160	-2	-500		
KTA1536T	SE	-	HE	-20	-5	900▲	200	560	-2	-500	-0.30	-3A	-60	140	-2	-500		
KTA1542T	SH	KTC3542T	HH	-30	-3	900▲	200	560	-2	-500	-0.23	-1.5A	-30	380	-10	-500		
KTA1544T	SN	KTC3544T	HN	-30	-2	900▲	200	560	-2	-100	-0.6	-1.5A	-75	150	-10	-50		
KTA1551T	SK	KTC3551T	HK	-50	-1	900▲	200	560	-2	-100	-0.43	-500	-10	420	-10	-300		
KTA1552T	SL	KTC3552T	HL	-50	-3	900▲	200	560	-2	-100	-0.2	-1A	-50	360	-10	-500		
KTC3531T	HA□	KTA1531T	SA□	20	1	900▲	120	400	2	50	0.3	500	50	180	10	50		
KTC3532T	HB	KTA1532T	SB	20	1.5	900▲	200	560	2	100	0.2	750	15	210	2	300		
KTC3535T	HD	KTA1535T	SD	20	3	900▲	200	560	2	500	0.15	1.5A	30	180	2	500		
KTC3542T	HH	KTA1542T	SH	30	3	900▲	200	560	2	500	0.18	1.5A	30	450	10	500		
KTC3544T	HN	KTA1544T	SN	30	2	900▲	200	560	2	100	0.4	1.5A	75	150	10	50		
KTC3551T	HK	KTA1551T	SK	50	1	900▲	200	560	2	100	0.19	500	10	420	10	300		
KTC3552T	HL	KTA1552T	SL	50	3	900▲	200	560	2	100	0.12	1A	50	380	10	500		
KTC3544S	HN	KTA1544S	SN	30	2	350	200	560	2	100	0.4	1.5A	75	150	10	50	SOT-23	
KTC3573	G5	-	-	100	1	500	200	500	10	250	0.18	500	50	100	10	50	SOT-89	

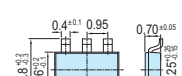
Note) ▲ : Package mounted on a ceramic board (600mm² × 0.8mm), □ : hFE Grade, : Package Mounted on 99.5% Alumina 10 × 8 × 0.6mm

General Purpose Junction Field Effect Transistor

Type No.	Mark	Max. Ratings			y_{fs} [mS]				I_{DSS} [mA]				Ciss [PF]		Package	Outline (Unit: mm)
		V_{GDO} (V)	I_G (mA)	P_C (mW)	Typ.	V_{DS} (V)	V_{GS} (V)	f (kHz)	Min.	Max.	V_{DS} (V)	V_{GS} (V)	Typ.	f (MHz)		
KTK498V	K1	-40	10	100	0.13	10	0	1	40	100	10	0	1.7	1	VSM	

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General Purpose Transistor + Switching Diode

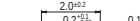
Type No	Mark	Internal Circuit	Max. Ratings			h _{FE}				V _{CE(sat)} (V)			f _r (MHz)				Package	Outline (Unit : mm)
			V _{CEO} (V)	I _C (mA)	P _C (mW)	Min.	Max.	V _{CE} (V)	I _C (mA)	Max.	I _C (mA)	I _B (mA)	Min.	Typ.	V _{CE} (V)	I _C (mA)		
KTX711T	T7		-80	-500	900▲	100	250	-1	-100	-0.25	-100	-10	100	-	-2	-10	TS6	
KTX811T	T8		80	500	900▲	100	250	1	-100	0.25	-100	-10	100	-	2	10		

Note) ▲ : Package mounted on a ceramic board (600mm² × 0.8mm)

General Purpose Transistor + BRT

Type No	Mark	Internal Circuit	Max. Ratings			h _{FE}				V _{CE(sat)} (V)			f _T (MHz)			Package	Outline (Unit : mm)
			V _{CEO} (V)	I _C (mA)	P _C (mW)	Min.	Max.	V _{CE} (V)	I _C (mA)	Max.	I _C (mA)	I _B (mA)	Min.	Typ.	V _{CE} (V)		
KTX213U	BH		-12	-500	200	270	680	-2	-10	-0.25	-200	-10	260	-2	-10	US6	

General Purpose Transistor + S-MOSFET

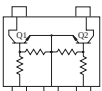
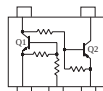
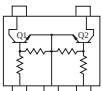
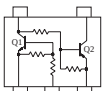
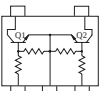
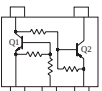
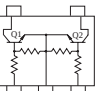
Type No.	Mark	Internal circuit (Top view)	Max. Ratings				I_{DSS} (μA)		V_{th} (V)				$R_{DS(ON)}$ (Ω)				Package	Outline (Unit: mm)
			V_{DS} (V)	V_{GSS} (V)	I_D (mA)	P_D (mW)	Max.	V_{DS} (V)	V_{GS} (V)	Min.	Max.	V_{DS} (V)	I_D (mA)	Max.	V_{GS} (V)	I_D (mA)		
KTX321U	BR		30	±20	100	150	1	30	0	0.5	1.5	3	0.1	7	2.5	10	US6	
			V_{CEO}	-12	-	I_C	-500	-	-	-	-	-	-	-	-	$V_{CE(sat)}$		

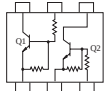
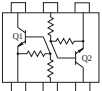
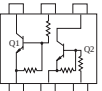
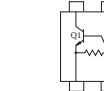
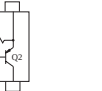
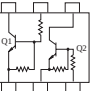
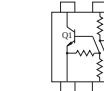
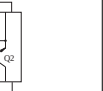
Current Regulating Device

Type No.	Mark	Internal Circuit	Max. Ratings			Output Current (mA)			Voltage Drop (V)		Package	Outline (Unit : mm)
			V_S (V)	I_O (mA)	P_D (mW)	Typ.	V_S (V)	V_{OUT} (V)	Typ.	I_O (mA)		
KCR401T	AC		40	65	900	10	10	8.6	0.8	10	TS6	
KCR402T	AA		40	65	900	20	10	8.6	0.8	20		
KCR405T	AB		40	65	900	50	10	8.6	0.8	50		
*KCR1202D	-	-	120	20	1W	20	10	-	-	-	DPAK	
*KCR1206D	-		120	60	1W	60	10	-	-	-		
*KCR1210D	-		120	100	1W	100	10	-	-	-		

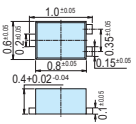
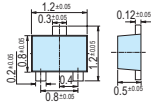
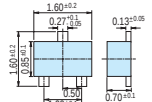
Note) * : Under development.

Electrical Characteristics			TFSM	VSM	ESM	USM		SOT-23		TO-92	
											
Polarity	R1 [kΩ]	R2 [kΩ]	±20V/±0.05A	±50V/±0.1A	±50V/±0.1A	±50V/±0.1A	±12V/±0.5A	±50V/±0.1A	±50V/±0.8A	±50V/±0.1A	±50V/±0.8A
NPN	4.7	4.7	KRC151F	KRC401V	KRC401E	KRC401	KRC453	KRC101S	KRC243S	KRC101	KRC243
	10	10	KRC152F	KRC402V	KRC402E	KRC402	KRC454	KRC102S	KRC244S	KRC102	KRC244
	22	22	KRC153F	KRC403V	KRC403E	KRC403		KRC103S		KRC103	
	47	47	KRC154F	KRC404V	KRC404E	KRC404		KRC104S		KRC104	
	2.2	47	KRC155F	KRC405V	KRC405E	KRC405		KRC105S		KRC105	
	4.7	47	KRC156F	KRC406V	KRC406E	KRC406		KRC106S		KRC106	
	10	47	KRC157F	KRC407V	KRC407E	KRC407		KRC107S		KRC107	
	22	47	KRC158F	KRC408V	KRC408E	KRC408		KRC108S		KRC108	
	4.7	-	KRC160F	KRC410V	KRC410E	KRC410		KRC110S		KRC110	
	10	-	KRC161F	KRC411V	KRC411E	KRC411		KRC111S		KRC111	
	22	-	KRC163F	KRC413V	KRC413E	KRC413		KRC113S		KRC113	
	47	-	KRC164F	KRC414V	KRC414E	KRC414		KRC114S		KRC114	
	1	10		KRC416V	KRC416E	KRC416		KRC116S	KRC245S	KRC116	KRC245
	2.2	2.2		KRC417V	KRC417E	KRC417	KRC452	KRC117S	KRC242S	KRC117	KRC242
	2.2	10		KRC418V	KRC418E	KRC418	KRC456	KRC118S	KRC246S	KRC118	KRC246
	4.7	10		KRC419V	KRC419E	KRC419		KRC119S		KRC119	
PNP	4.7	4.7	KRA151F	KRA301V	KRA301E	KRA301	KRA353	KRA101S	KRA223S	KRA101	KRA223
	10	10	KRA152F	KRA302V	KRA302E	KRA302	KRA354	KRA102S	KRA224S	KRA102	KRA224
	22	22	KRA153F	KRA303V	KRA303E	KRA303		KRA103S		KRA103	
	47	47	KRA154F	KRA304V	KRA304E	KRA304		KRA104S		KRA104	
	2.2	47	KRA155F	KRA305V	KRA305E	KRA305		KRA105S		KRA105	
	4.7	47	KRA156F	KRA306V	KRA306E	KRA306		KRA106S		KRA106	
	10	47	KRA157F	KRA307V	KRA307E	KRA307		KRA107S		KRA107	
	22	47	KRA158F	KRA308V	KRA308E	KRA308		KRA108S		KRA108	
	4.7	-	KRA160F	KRA310V	KRA310E	KRA310		KRA110S		KRA110	
	10	-	KRA161F	KRA311V	KRA311E	KRA311		KRA111S		KRA111	
	22	-	KRA163F	KRA313V	KRA313E	KRA313		KRA113S		KRA113	
	47	-	KRA164F	KRA314V	KRA314E	KRA314		KRA114S		KRA114	
	1	10		KRA316V	KRA316E	KRA316		KRA116S	KRA225S	KRA116	KRA225
	2.2	2.2		KRA317V	KRA317E	KRA317	KRA352	KRA117S	KRA222S	KRA117	KRA222
	2.2	10		KRA318V	KRA318E	KRA318	KRA356	KRA118S	KRA226S	KRA118	KRA226
	4.7	10		KRA319V	KRA319E	KRA319		KRA119S		KRA119	

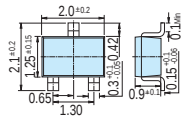
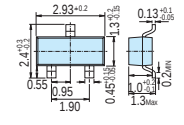
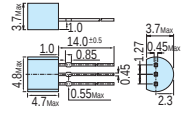
Electrical Characteristics			TFSV		TESV		USV		TSV
									
Polarity	R1 [kΩ]	R2 [kΩ]	± 20V/ ± 0.05A		± 50V/ ± 0.1A		± 50V/ ± 0.1A		± 50V/ ± 0.8A
NPN + NPN	4.7	4.7	KRC651F		KRC651E		KRC651U		KRC643T
	10	10	KRC652F		KRC652E		KRC652U		KRC644T
	22	22	KRC653F		KRC653E		KRC653U		
	47	47	KRC654F		KRC654E		KRC654U		
	2.2	47	KRC655F		KRC655E		KRC655U		
	4.7	47	KRC656F		KRC656E		KRC656U		
	10	47	KRC657F		KRC657E		KRC657U		
	22	47	KRC658F		KRC658E		KRC658U		
	4.7	-	KRC660F		KRC660E		KRC660U		
	10	-	KRC661F		KRC661E		KRC661U		
	22	-	KRC663F		KRC663E		KRC663U		
	47	-	KRC664F		KRC664E		KRC664U		
	1	10			KRC666E		KRC666U		KRC645T
	2.2	2.2			KRC667E		KRC667U		KRC642T
	2.2	10			KRC668E		KRC668U		KRC646T
	4.7	10			KRC669E		KRC669U		
NPN+PNP	NPN:10/10	PNP:10/10			KRX101E		KRX101U		
	NPN:47/47	PNP:10/47		KRX102F	KRX102E		KRX102U		
	NPN:22/22	PNP:22/22			KRX103E		KRX103U		
	NPN:47/47	PNP:4.7/10			KRX104E				
PNP + PNP	4.7	4.7	KRA551F		KRA551E		KRA551U		KRA523T
	10	10	KRA552F		KRA552E		KRA552U		KRA524T
	22	22	KRA553F		KRA553E		KRA553U		
	47	47	KRA554F		KRA554E		KRA554U		
	2.2	47	KRA555F		KRA555E		KRA555U		
	4.7	47	KRA556F		KRA556E		KRA556U		
	10	47	KRA557F		KRA557E		KRA557U		
	22	47	KRA558F		KRA558E		KRA558U		
	4.7	-	KRA560F		KRA560E		KRA560U		
	10	-	KRA561F		KRA561E		KRA561U		
	22	-	KRA563F		KRA563E		KRA563U		
	47	-	KRA564F		KRA564E		KRA564U		
	1	10			KRA566E		KRA566U		KRA525T
	2.2	2.2			KRA567E		KRA567U		KRA522T
	2.2	10			KRA568E		KRA568U		KRA526T
	4.7	10			KRA569E		KRA569U		

Electrical Characteristics			TFS6		TES6		US6		TS6	
										
Polarity	R1 [kΩ]	R2 [kΩ]	± 20V/ ± 0.05A		± 50V/ ± 0.1A		± 50V/ ± 0.1A		± 50V/ ± 0.1A	
NPN + NPN	4.7	4.7	KRC821F	KRC851F	KRC821E	KRC851E		KRC821U	KRC851U	KRC843T
	10	10	KRC822F	KRC852F	KRC822E	KRC852E		KRC822U	KRC852U	KRC844T
	22	22	KRC823F	KRC853F	KRC823E	KRC853E		KRC823U	KRC853U	
	47	47	KRC824F	KRC854F	KRC824E	KRC854E		KRC824U	KRC854U	
	2.2	47	KRC825F	KRC855F	KRC825E	KRC855E		KRC825U	KRC855U	
	4.7	47	KRC826F	KRC856F	KRC826E	KRC856E		KRC826U	KRC856U	
	10	47	KRC827F	KRC857F	KRC827E	KRC857E		KRC827U	KRC857U	
	22	47	KRC828F	KRC858F	KRC828E	KRC858E		KRC828U	KRC858U	
	4.7	-	KRC830F	KRC860F	KRC830E	KRC860E		KRC830U	KRC860U	
	10	-	KRC831F	KRC861F	KRC831E	KRC861E		KRC831U	KRC861U	
	22	-	KRC833F	KRC863F	KRC833E	KRC863E		KRC833U	KRC863U	
	47	-	KRC834F	KRC864F	KRC834E	KRC864E		KRC834U	KRC864U	
	1	10			KRC836E	KRC866E		KRC836U	KRC866U	KRC845T
	2.2	2.2			KRC837E	KRC867E		KRC837U	KRC867U	KRC842T
	2.2	10			KRC838E	KRC868E		KRC838U	KRC868U	KRC846T
	4.7	10			KRC839E	KRC869E		KRC839U	KRC869U	
NPN + PNP	NPN:10/10	PNP:10/10				KRX201E			KRX201U	
	NPN:22/22	PNP:22/22				KRX202E			KRX202U	
	NPN:47/47	PNP:47/47				KRX203E			KRX203U	
	NPN:2.2/47	PNP:2.2/47				KRX204E			KRX204U	
	NPN:10/47	PNP:10/47				KRX206E				
	NPN:10/10	PNP:10/47				KRX207E			KRX207U	
	NPN:47/47	PNP:47/10				KRX208E				
	NPN:47/47	PNP:10/47				KRX209E			KRX209U	
	NPN:10/10	PNP:1/10				KRX210E				
PNP + PNP	4.7	4.7	KRA721F	KRA751F	KRA721E	KRA751E		KRA721U	KRA751U	KRA723T
	10	10	KRA722F	KRA752F	KRA722E	KRA752E		KRA722U	KRA752U	KRA724T
	22	22	KRA723F	KRA753F	KRA723E	KRA753E		KRA723U	KRA753U	
	47	47	KRA724F	KRA754F	KRA724E	KRA754E		KRA724U	KRA754U	
	2.2	47	KRA725F	KRA755F	KRA725E	KRA755E		KRA725U	KRA755U	
	4.7	47	KRA726F	KRA756F	KRA726E	KRA756E		KRA726U	KRA756U	
	10	47	KRA727F	KRA757F	KRA727E	KRA757E		KRA727U	KRA757U	
	22	47	KRA728F	KRA758F	KRA728E	KRA758E		KRA728U	KRA758U	
	4.7	-	KRA730F	KRA760F	KRA730E	KRA760E		KRA730U	KRA760U	
	10	-	KRA731F	KRA761F	KRA731E	KRA761E		KRA731U	KRA761U	
	22	-	KRA733F	KRA763F	KRA733E	KRA763E		KRA733U	KRA763U	
	47	-	KRA734F	KRA764F	KRA734E	KRA764E		KRA734U	KRA764U	
	1	10			KRA736E	KRA766E		KRA736U	KRA766U	KRA725T
	2.2	2.2			KRA737E	KRA767E		KRA737U	KRA767U	KRA722T
	2.2	10			KRA738E	KRA768E		KRA738U	KRA768U	KRA726T
	4.7	10			KRA739E	KRA769E		KRA739U	KRA769U	

General Purpose BRT

Type No.				Max. Ratings			h _{FE}				V _{CE(sat)} (V)			R1 (k Ω)	R2 (k Ω)	Package	Outline (Unit : mm)
NPN	Mark	PNP	Mark	V _{CEO} (V)	I _C (mA)	P _C (mW)	Min.	Max.	V _{CE} (V)	I _C (mA)	Max.	I _C (mA)	I _B (mA)				
KRC151F	FA	KRA151F	GA	20	50	50	30	-	5	10	0.15	5	0.25	4.7	4.7	TFSM	
KRC152F	FB	KRA152F	GB	20	50	50	60	-	5	10	0.15	5	0.25	10	10		
KRC153F	FC	KRA153F	GC	20	50	50	100	-	5	10	0.15	5	0.25	22	22		
KRC154F	FD	KRA154F	GD	20	50	50	100	-	5	10	0.15	5	0.25	47	47		
KRC157F	FG	KRA157F	GG	20	50	50	120	-	5	10	0.15	5	0.25	10	47		
KRC158F	FH	KRA158F	GH	20	50	50	120	-	5	10	0.15	5	0.25	22	47		
KRC160F	FK	KRA160F	GK	20	50	50	300	-	5	1	0.15	5	0.25	4.7	-		
KRC161F	FL	KRA161F	GL	20	50	50	300	-	5	1	0.15	5	0.25	10	-		
KRC163F	FN	KRA163F	GN	20	50	50	300	-	5	1	0.15	5	0.25	22	-		
KRC164F	FP	KRA164F	GP	20	50	50	300	-	5	1	0.15	5	0.25	47	-		
KRC401V	NA	KRA301V	PA	50	100	100	30	55	5	10	0.3	10	0.5	4.7	4.7	VSM	
KRC402V	NB	KRA302V	PB	50	100	100	50	80	5	10	0.3	10	0.5	10	10		
KRC403V	NC	KRA303V	PC	50	100	100	70	120	5	10	0.3	10	0.5	22	22		
KRC404V	ND	KRA304V	PD	50	100	100	80	200	5	10	0.3	10	0.5	47	47		
KRC405V	NE	KRA305V	PE	50	100	100	80	200	5	10	0.3	10	0.5	2.2	47		
KRC406V	NF	KRA306V	PF	50	100	100	80	200	5	10	0.3	10	0.5	4.7	47		
KRC407V	NH	KRA307V	PH	50	100	100	80	150	5	10	0.3	10	0.5	10	47		
KRC408V	NI	KRA308V	PI	50	100	100	80	150	5	10	0.3	10	0.5	22	47		
KRC410V	NK	KRA310V	PK	50	100	100	120	-	5	1	0.3	10	0.5	4.7	-		
KRC411V	NM	KRA311V	PM	50	100	100	120	-	5	1	0.3	10	0.5	10	-		
KRC413V	NO	KRA313V	PO	50	100	100	120	-	5	1	0.3	10	0.5	22	-		
KRC414V	NP	KRA314V	PP	50	100	100	120	-	5	1	0.3	10	0.5	47	-		
KRC416V	N2	KRA316V	P2	50	100	100	33	-	5	5	0.3	10	0.5	1	10		
KRC417V	N4	KRA317V	P4	50	100	100	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC418V	N5	KRA318V	P5	50	100	100	33	-	5	10	0.3	10	0.5	2.2	10		
KRC419V	N6	KRA319V	P6	50	100	100	30	-	5	10	0.3	10	0.5	4.7	10		
KRC401E	NA	KRA301E	PA	50	100	100	30	55	5	10	0.3	10	0.5	4.7	4.7	ESM	
KRC402E	NB	KRA302E	PB	50	100	100	50	80	5	10	0.3	10	0.5	10	10		
KRC403E	NC	KRA303E	PC	50	100	100	70	120	5	10	0.3	10	0.5	22	22		
KRC404E	ND	KRA304E	PD	50	100	100	80	200	5	10	0.3	10	0.5	47	47		
KRC405E	NE	KRA305E	PE	50	100	100	80	200	5	10	0.3	10	0.5	2.2	47		
KRC406E	NF	KRA306E	PF	50	100	100	80	200	5	10	0.3	10	0.5	4.7	47		
KRC407E	NH	KRA307E	PH	50	100	100	80	150	5	10	0.3	10	0.5	10	47		
KRC408E	NI	KRA308E	PI	50	100	100	80	150	5	10	0.3	10	0.5	22	47		
KRC410E	NK	KRA310E	PK	50	100	100	120	-	5	1	0.3	10	0.5	4.7	-		
KRC411E	NM	KRA311E	PM	50	100	100	120	-	5	1	0.3	10	0.5	10	-		
KRC413E	NO	KRA313E	PO	50	100	100	120	-	5	1	0.3	10	0.5	22	-		
KRC414E	NP	KRA314E	PP	50	100	100	120	-	5	1	0.3	10	0.5	47	-		
KRC416E	N2	KRA316E	P2	50	100	100	33	-	5	5	0.3	10	0.5	1	10		
KRC417E	N4	KRA317E	P4	50	100	100	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC418E	N5	KRA318E	P5	50	100	100	33	-	5	10	0.3	10	0.5	2.2	10		
KRC419E	N6	KRA319E	P6	50	100	100	30	-	5	10	0.3	10	0.5	4.7	10		

General Purpose BRT

Type No.				Max. Ratings			h_{FE}				$V_{CE(sat)}$ (V)			R1 (k Ω)	R2 (k Ω)	Package	Outline (Unit : mm)
NPN	Mark	PNP	Mark	V_{CEO} (V)	I_C (mA)	P_C (mW)	Min.	Max.	V_{CE} (V)	I_C (mA)	Max.	I_C (mA)	I_B (mA)				
KRC401	NA	KRA301	PA	50	100	100	30	55	5	10	0.3	10	0.5	4.7	4.7	USM	
KRC402	NB	KRA302	PB	50	100	100	50	80	5	10	0.3	10	0.5	10	10		
KRC403	NC	KRA303	PC	50	100	100	70	120	5	10	0.3	10	0.5	22	22		
KRC404	ND	KRA304	PD	50	100	100	80	200	5	10	0.3	10	0.5	47	47		
KRC405	NE	KRA305	PE	50	100	100	80	200	5	10	0.3	10	0.5	2.2	47		
KRC406	NF	KRA306	PF	50	100	100	80	200	5	10	0.3	10	0.5	4.7	47		
KRC407	NH	KRA307	PH	50	100	100	80	150	5	10	0.3	10	0.5	10	47		
KRC408	NI	KRA308	PI	50	100	100	80	150	5	10	0.3	10	0.5	22	47		
KRC410	NK	KRA310	PK	50	100	100	120	-	5	1	0.3	10	0.5	4.7	-		
KRC411	NM	KRA311	PM	50	100	100	120	-	5	1	0.3	10	0.5	10	-		
KRC413	NO	KRA313	PO	50	100	100	120	-	5	1	0.5	10	0.5	22	-		
KRC414	NP	KRA314	PP	50	100	100	120	-	5	1	0.3	10	0.5	47	-		
KRC416	N2	KRA316	P2	50	100	100	33	-	5	5	0.3	10	0.5	1	10		
KRC417	N4	KRA317	P4	50	100	100	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC418	N5	KRA318	P5	50	100	100	33	-	5	10	0.3	10	0.5	2.2	10		
KRC419	N6	KRA319	P6	50	100	100	30	-	5	10	0.3	10	0.5	4.7	10		
KRC101S	NA	KRA101S	PA	50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7	SOT-23	
KRC102S	NB	KRA102S	PB	50	100	200	50	80	5	10	0.3	10	0.5	10	10		
KRC103S	NC	KRA103S	PC	50	100	200	70	120	5	10	0.3	10	0.5	22	22		
KRC104S	ND	KRA104S	PD	50	100	200	80	200	5	10	0.3	10	0.5	47	47		
KRC105S	NE	KRA105S	PE	50	100	200	80	200	5	10	0.3	10	0.5	2.2	47		
KRC106S	NF	KRA106S	PF	50	100	200	80	200	5	10	0.3	10	0.5	4.7	47		
KRC107S	NH	KRA107S	PH	50	100	200	80	150	5	10	0.3	10	0.5	10	47		
KRC108S	NI	KRA108S	PI	50	100	200	80	150	5	10	0.3	10	0.5	22	47		
KRC110S	NK	KRA110S	PK	50	100	200	120	-	5	1	0.3	10	0.5	4.7	-		
KRC111S	NM	KRA111S	PM	50	100	200	120	-	5	1	0.3	10	0.5	10	-		
KRC113S	NO	KRA113S	PO	50	100	200	120	-	5	1	0.3	10	0.5	22	-		
KRC114S	NP	KRA114S	PP	50	100	200	120	-	5	1	0.3	10	0.5	47	-		
KRC116S	N2	KRA116S	P2	50	100	200	33	-	5	5	0.3	10	0.5	1	10		
KRC117S	N4	KRA117S	P4	50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC118S	N5	KRA118S	P5	50	100	200	33	-	5	10	0.3	10	0.5	2.2	10		
KRC119S	N6	KRA119S	P6	50	100	200	30	-	5	10	0.3	10	0.5	4.7	10		
KRC101	-	KRA101	-	50	100	625	30	55	5	10	0.3	10	0.5	4.7	4.7	TO-92	
KRC102	-	KRA102	-	50	100	625	50	80	5	10	0.3	10	0.5	10	10		
KRC103	-	KRA103	-	50	100	625	70	120	5	10	0.3	10	0.5	22	22		
KRC104	-	KRA104	-	50	100	625	80	200	5	10	0.3	10	0.5	47	47		
KRC105	-	KRA105	-	50	100	625	80	200	5	10	0.3	10	0.5	2.2	47		
KRC106	-	KRA106	-	50	100	625	80	200	5	10	0.3	10	0.5	4.7	47		
KRC107	-	KRA107	-	50	100	625	80	150	5	10	0.3	10	0.5	10	47		
KRC108	-	KRA108	-	50	100	625	80	150	5	10	0.3	10	0.5	22	47		
KRC110	-	KRA110	-	50	100	625	120	-	5	1	0.3	10	0.5	4.7	-		
KRC111	-	KRA111	-	50	100	625	120	-	5	1	0.3	10	0.5	10	-		
KRC113	-	KRA113	-	50	100	625	120	-	5	1	0.3	10	0.5	22	-		
KRC114	-	KRA114	-	50	100	625	120	-	5	1	0.3	10	0.5	47	-		
KRC116	-	KRA116	-	50	100	625	33	-	5	5	0.3	10	0.5	1	10		
KRC117	-	KRA117	-	50	100	625	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC118	-	KRA118	-	50	100	625	33	-	5	10	0.3	10	0.5	2.2	10		
KRC119	-	KRA119	-	50	100	625	30	-	5	10	0.3	10	0.5	4.7	10		

Transistors with Built-in Bias Resistors

Complex BRT (NPN + NPN, PNP + PNP)

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			h_{FE}		$V_{CE(sat)}$ (V)			R1 (k Ω)	R2 (k Ω)	Package	Outline (Unit : mm)
			V_{CEO} (V)	I_C (mA)	P_D (mW)	Min.	Max.	V_{CE} (V)	I_C (mA)	I_B (mA)				
KRA551F	HA		-20	-50	50	30	-	-5	-10	-0.15	-5	-0.25	4.7	4.7
KRA552F	HB		-20	-50	50	60	-	-5	-10	-0.15	-5	-0.25	10	10
KRA553F	HC		-20	-50	50	100	-	-5	-10	-0.15	-5	-0.25	22	22
KRA554F	HD		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	47	47
KRA557F	HG		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	10	47
KRA558F	HH		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	22	47
KRA560F	HK		-20	-50	50	300	-	-5	-1	-0.15	-5	-0.25	4.7	-
KRA561F	HL		-20	-50	50	300	-	-5	-1	-0.15	-5	-0.25	10	-
KRA563F	HN		-20	-50	50	300	-	-5	-1	-0.15	-5	-0.25	22	-
KRA564F	HP		-20	-50	50	300	-	-5	-1	-0.15	-5	-0.25	47	-
KRC651F	JA		20	50	50	30	-	5	10	0.15	5	0.25	4.7	4.7
KRC652F	JB		20	50	50	60	-	5	10	0.15	5	0.25	10	10
KRC653F	JC		20	50	50	100	-	5	10	0.15	5	0.25	22	22
KRC654F	JD		20	50	50	120	-	5	10	0.15	5	0.25	47	47
KRC657F	JG		20	50	50	120	-	5	10	0.15	5	0.25	10	47
KRC658F	JH		20	50	50	120	-	5	10	0.15	5	0.25	22	47
KRC660F	JK		20	50	50	300	-	5	1	0.15	5	0.25	4.7	-
KRC661F	JL		20	50	50	300	-	5	1	0.15	5	0.25	10	-
KRC663F	JN		20	50	50	300	-	5	1	0.15	5	0.25	22	-
KRC664F	JP		20	50	50	300	-	5	1	0.15	5	0.25	47	-
KRA751F	KA		-20	-50	50	30	-	-5	-10	-0.15	-5	-0.25	4.7	4.7
KRA752F	KB		-20	-50	50	60	-	-5	-10	-0.15	-5	-0.25	10	10
KRA753F	KC		-20	-50	50	100	-	-5	-10	-0.15	-5	-0.25	22	22
KRA754F	KD		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	47	47
KRA757F	KG		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	10	47
KRA758F	KH		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	22	47
KRA760F	KK		-20	-50	50	300	-	-5	-1	-0.15	-5	-0.25	4.7	-
KRA761F	KL		-20	-50	50	300	-	-5	-1	-0.15	-5	-0.25	10	-
KRA763F	KN		-20	-50	50	300	-	-5	-1	-0.15	-5	-0.25	22	-
KRA764F	KP		-20	-50	50	300	-	-5	-1	-0.15	-5	-0.25	47	-
KRC851F	LA		20	50	50	30	-	5	10	0.15	5	0.25	4.7	4.7
KRC852F	LB		20	50	50	60	-	5	10	0.15	5	0.25	10	10
KRC853F	LC		20	50	50	100	-	5	10	0.15	5	0.25	22	22
KRC854F	LD		20	50	50	120	-	5	10	0.15	5	0.25	47	47
KRC857F	LG		20	50	50	120	-	5	10	0.15	5	0.25	10	47
KRC858F	LH		20	50	50	120	-	5	10	0.15	5	0.25	22	47
KRC860F	LK		20	50	50	300	-	5	1	0.15	5	0.25	4.7	-
KRC861F	LL		20	50	50	300	-	5	1	0.15	5	0.25	10	-
KRC863F	LN		20	50	50	300	-	5	1	0.15	5	0.25	22	-
KRC864F	LP		20	50	50	300	-	5	1	0.15	5	0.25	47	-
KRA721F	MA		-20	-50	50	30	-	-5	-10	-0.15	-5	-0.25	4.7	4.7
KRA722F	MB		-20	-50	50	60	-	-5	-10	-0.15	-5	-0.25	10	10
KRA723F	MC		-20	-50	50	100	-	-5	-10	-0.15	-5	-0.25	22	22
KRA724F	MD		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	47	47
KRA727F	MG		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	10	47
KRA728F	MH		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	22	47
KRA730F	MK		-20	-50	50	300	-	-5	-1	-0.15	-5	-0.25	4.7	-
KRA731F	ML		-20	-50	50	300	-	-5	-1	-0.15	-5	-0.25	10	-
KRA733F	MN		-20	-50	50	300	-	-5	-1	-0.15	-5	-0.25	22	-
KRA734F	MP		-20	-50	50	300	-	-5	-1	-0.15	-5	-0.25	47	-
KRC821F	NA		20	50	50	30	-	5	10	0.15	5	0.25	4.7	4.7
KRC822F	NB		20	50	50	60	-	5	10	0.15	5	0.25	10	10
KRC823F	NC		20	50	50	100	-	5	10	0.15	5	0.25	22	22
KRC824F	ND		20	50	50	120	-	5	10	0.15	5	0.25	47	47
KRC827F	NG		20	50	50	120	-	5	10	0.15	5	0.25	10	47
KRC828F	NH		20	50	50	120	-	5	10	0.15	5	0.25	22	47
KRC830F	NK		20	50	50	300	-	5	1	0.15	5	0.25	4.7	-
KRC831F	NL		20	50	50	300	-	5	1	0.15	5	0.25	10	-
KRC833F	NN		20	50	50	300	-	5	1	0.15	5	0.25	22	-
KRC834F	NP		20	50	50	300	-	5	1	0.15	5	0.25	47	-

Note) Pn= Total Rating,

Complex BRT (NPN + NPN, PNP + PNP)

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			h _{FE}				V _{CE(sat)} (V)			R1 (kΩ)	R2 (kΩ)	Package	Outline (Unit : mm)
			V _{CEO} (V)	I _C (mA)	P _D (mW)	Min.	Max.	V _{CE} (V)	I _C (mA)	Max.	I _C (mA)	I _B (mA)				
KRA551E	PA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7	TESV	
KRA552E	PB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10		
KRA553E	PC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22		
KRA554E	PD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47		
KRA555E	PE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47		
KRA556E	PF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47		
KRA557E	PH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47		
KRA558E	PI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47		
KRA560E	PK		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7	-		
KRA561E	PM		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-		
KRA562E	PN		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	100	-		
KRA563E	PO		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-		
KRA564E	PP		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-		
KRA566E	P2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10		
KRA567E	P4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2		
KRA568E	P5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10		
KRA569E	P6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10		
KRC651E	NA		50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7		
KRC652E	NB		50	100	200	50	80	5	10	0.3	10	0.5	10	10		
KRC653E	NC		50	100	200	70	120	5	10	0.3	10	0.5	22	22		
KRC654E	ND		50	100	200	80	200	5	10	0.3	10	0.5	47	47		
KRC655E	NE		50	100	200	80	200	5	10	0.3	10	0.5	2.2	47		
KRC656E	NF		50	100	200	80	200	5	10	0.3	10	0.5	4.7	47		
KRC657E	NH		50	100	200	80	150	5	10	0.3	10	0.5	10	47		
KRC658E	NI		50	100	200	80	150	5	10	0.3	10	0.5	22	47		
KRC660E	NK		50	100	200	120	-	5	1	0.3	10	0.5	4.7	-		
KRC661E	NM		50	100	200	120	-	5	1	0.3	10	0.5	10	-		
KRC662E	NN		50	100	200	120	-	5	1	0.3	10	0.5	100	-		
KRC663E	NO		50	100	200	120	-	5	1	0.3	10	0.5	22	-		
KRC664E	NP		50	100	200	120	-	5	1	0.3	10	0.5	47	-		
KRC666E	N2		50	100	200	33	-	5	5	0.3	10	0.5	1	10		
KRC667E	N4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC668E	N5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10		
KRC669E	N6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10		
KRA721E	JA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7	TES6	
KRA722E	JB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10		
KRA723E	JC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22		
KRA724E	JD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47		
KRA725E	JE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47		
KRA726E	JF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47		
KRA727E	JH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47		
KRA728E	JI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47		
KRA730E	JK		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7	-		
KRA731E	JM		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-		
KRA732E	JN		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	100	-		
KRA733E	JO		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-		
KRA734E	JP		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-		
KRA736E	J2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10		
KRA737E	J4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2		
KRA738E	J5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10		
KRA739E	J6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10		
KRC821E	YA		50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7		
KRC822E	YB		50	100	200	50	80	5	10	0.3	10	0.5	10	10		
KRC823E	YC		50	100	200	70	120	5	10	0.3	10	0.5	22	22		
KRC824E	YD		50	100	200	80	200	5	10	0.3	10	0.5	47	47		
KRC825E	YE		50	100	200	80	200	5	10	0.3	10	0.5	2.2	47		
KRC826E	YF		50	100	200	80	200	5	10	0.3	10	0.5	4.7	47		
KRC827E	YH		50	100	200	80	150	5	10	0.3	10	0.5	10	47		
KRC830E	YK		50	100	200	120	-	5	1	0.3	10	0.5	4.7	-		
KRC831E	YM		50	100	200	120	-	5	1	0.3	10	0.5	10	-		
KRC833E	YO		50	100	200	120	-	5	1	0.3	10	0.5	22	-		
KRC834E	YP		50	100	200	120	-	5	1	0.3	10	0.5	47	-		
KRC836E	Y2		50	100	200	33	-	5	5	0.3	10	0.5	1	10		
KRC837E	Y4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC838E	Y5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10		
KRC839E	Y6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10		

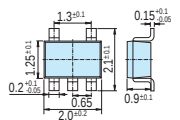
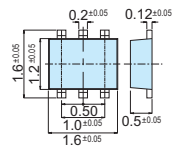
Note) P_D = Total Rating.

Transistors with Built-in Bias Resistors

Complex BRT (NPN + NPN, PNP + PNP)

Type No.	Mark	Internal Circuit (Top view)	Max. Ratings			h_{FE}		$V_{CE(sat)}$ (V)			R1 (k Ω)	R2 (k Ω)	Package	Outline (Unit : mm)
			V_{CEO} (V)	I_C (mA)	P_D (mW)	Min.	Max.	V_{CE} (V)	I_C (mA)	Max.	I_C (mA)	I_B (mA)		
KRA751E	PA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7
KRA752E	PB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10
KRA753E	PC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22
KRA754E	PD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47
KRA755E	PE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47
KRA756E	PF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47
KRA757E	PH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47
KRA760E	PK		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7	-
KRA761E	PM		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-
KRA763E	PO		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-
KRA764E	PP		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-
KRA766E	P2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10
KRA767E	P4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2
KRA768E	P5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10
KRA769E	P6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10
KRC851E	NA		50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7
KRC852E	NB		50	100	200	50	80	5	10	0.3	10	0.5	10	10
KRC853E	NC		50	100	200	70	120	5	10	0.3	10	0.5	22	22
KRC854E	ND		50	100	200	80	200	5	10	0.3	10	0.5	47	47
KRC855E	NE		50	100	200	80	200	5	10	0.3	10	0.5	2.2	47
KRC856E	NF		50	100	200	80	200	5	10	0.3	10	0.5	4.7	47
KRC857E	NH		50	100	200	80	150	5	10	0.3	10	0.5	10	47
KRC858E	NI		50	100	200	80	150	5	10	0.3	10	0.5	22	47
KRC860E	NK		50	100	200	120	-	5	1	0.3	10	0.5	4.7	-
KRC861E	NM		50	100	200	120	-	5	1	0.3	10	0.5	10	-
KRC863E	NO		50	100	200	120	-	5	1	0.3	10	0.5	22	-
KRC864E	NP		50	100	200	120	-	5	1	0.3	10	0.5	47	-
KRC866E	N2		50	100	200	33	-	5	5	0.3	10	0.5	1	10
KRC867E	N4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2
KRC868E	N5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10
KRC869E	N6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10
KRA551U	PA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7
KRA552U	PB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10
KRA553U	PC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22
KRA554U	PD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47
KRA555U	PE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47
KRA556U	PF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47
KRA557U	PH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47
KRA558U	PI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47
KRA560U	PK		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7	-
KRA561U	PM		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-
KRA563U	PO		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-
KRA564U	PP		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-
KRA566U	P2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10
KRA567U	P4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2
KRA568U	P5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10
KRA569U	P6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10

Note) P_D = Total Rating



Complex BRT (NPN + NPN , PNP + PNP)

Type No.	Mark	Internal Circuit (Top view)	Max. Ratings			h_{FE}				$V_{CE(sat)}$ (V)			R1 (k Ω)	R2 (k Ω)	Package	Outline (Unit : mm)
			V_{CEO} (V)	I_C (mA)	P_D (mW)	Min.	Max.	V_{CE} (V)	I_C (mA)	Max.	I_C (mA)	I_B (mA)				
KRC651U	NA		50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7	USV	
KRC652U	NB		50	100	200	50	80	5	10	0.3	10	0.5	10	10		
KRC653U	NC		50	100	200	70	120	5	10	0.3	10	0.5	22	22		
KRC654U	ND		50	100	200	80	200	5	10	0.3	10	0.5	47	47		
KRC655U	NE		50	100	200	80	200	5	10	0.3	10	0.5	2.2	47		
KRC656U	NF		50	100	200	80	200	5	10	0.3	10	0.5	4.7	47		
KRC657U	NH		50	100	200	80	150	5	10	0.3	10	0.5	10	47		
KRC658U	NI		50	100	200	80	150	5	10	0.3	10	0.5	22	47		
KRC660U	NK		50	100	200	120	-	5	1	0.3	10	0.5	4.7	-	USV	
KRC661U	NM		50	100	200	120	-	5	1	0.3	10	0.5	10	-		
KRC663U	NO		50	100	200	120	-	5	1	0.3	10	0.5	22	-		
KRC664U	NP		50	100	200	120	-	5	1	0.3	10	0.5	47	-		
KRC666U	N2		50	100	200	33	-	5	5	0.3	10	0.5	1	10	USV	
KRC667U	N4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC668U	N5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10		
KRC669U	N6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10		
KRA721U	JA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7		
KRA722U	JB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10		
KRA723U	JC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22		
KRA724U	JD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47		
KRA725U	JE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47		
KRA726U	JF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47		
KRA727U	JH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47		
KRA728U	JI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47		
KRA730U	JK		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7	-	US6	
KRA731U	JM		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-		
KRA733U	JO		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-		
KRA734U	JP		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-		
KRA736U	J2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10	US6	
KRA737U	J4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2		
KRA738U	J5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10		
KRA739U	J6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10		
KRC821U	YA		50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7	US6	
KRC822U	YB		50	100	200	50	80	5	10	0.3	10	0.5	10	10		
KRC823U	YC		50	100	200	70	120	5	10	0.3	10	0.5	22	22		
KRC824U	YD		50	100	200	80	200	5	10	0.3	10	0.5	47	47		
KRC825U	YE		50	100	200	80	200	5	10	0.3	10	0.5	2.2	47		
KRC826U	YF		50	100	200	80	200	5	10	0.3	10	0.5	4.7	47		
KRC827U	YH		50	100	200	80	150	5	10	0.3	10	0.5	10	47		
KRC828U	YI		50	100	200	80	150	5	10	0.3	10	0.5	22	47		
KRC830U	YK		50	100	200	120	-	5	1	0.3	10	0.5	4.7	-	US6	
KRC831U	YM		50	100	200	120	-	5	1	0.3	10	0.5	10	-		
KRC833U	YO		50	100	200	120	-	5	1	0.3	10	0.5	22	-		
KRC834U	YP		50	100	200	120	-	5	1	0.3	10	0.5	47	-		
KRC836U	Y2		50	100	200	33	-	5	5	0.3	10	0.5	1	10	US6	
KRC837U	Y4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC838U	Y5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10		
KRC839U	Y6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10		

Note) P_D = Total Rating

Complex BRT (NPN + NPN , PNP + PNP)

Type No.	Mark	Internal Circuit (Top view)	Max. Ratings			h_{FE}				$V_{CE(sat)}$ (V)			R1 (k Ω)	R2 (k Ω)	Package	Outline (Unit : mm)
			V_{CEO} (V)	I_C (mA)	P_D (mW)	Min.	Max.	V_{CE} (V)	I_C (mA)	Max.	I_C (mA)	I_B (mA)				
KRA751U	PA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7	US6	
KRA752U	PB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10		
KRA753U	PC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22		
KRA754U	PD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47		
KRA755U	PE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47		
KRA756U	PF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47		
KRA757U	PH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47		
KRA758U	PI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47		
KRA760U	PK		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7	-		
KRA761U	PM		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-		
KRA763U	PO		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-		
KRA764U	PP		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-		
KRA766U	P2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10		
KRA767U	P4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2		
KRA768U	P5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10		
KRA769U	P6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10		
KRC851U	NA		50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7		
KRC852U	NB		50	100	200	50	80	5	10	0.3	10	0.5	10	10		
KRC853U	NC		50	100	200	70	120	5	10	0.3	10	0.5	22	22		
KRC854U	ND		50	100	200	80	200	5	10	0.3	10	0.5	47	47		
KRC855U	NE		50	100	200	80	200	5	10	0.3	10	0.5	2.2	47		
KRC856U	NF		50	100	200	80	200	5	10	0.3	10	0.5	4.7	47		
KRC857U	NH		50	100	200	80	150	5	10	0.3	10	0.5	10	47		
KRC858U	NI		50	100	200	80	150	5	10	0.3	10	0.5	22	47		
KRC860U	NK		50	100	200	120	-	5	1	0.3	10	0.5	4.7	-		
KRC861U	NM		50	100	200	120	-	5	1	0.3	10	0.5	10	-		
KRC863U	NO		50	100	200	120	-	5	1	0.3	10	0.5	22	-		
KRC864U	NP		50	100	200	120	-	5	1	0.3	10	0.5	47	-		
KRC866U	N2		50	100	200	33	-	5	5	0.3	10	0.5	1	10		
KRC867U	N4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC868U	N5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10		
KRC869U	N6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10		

Complex BRT (NPN+PNP)

Type No.	Mark	Internal circuit (Top view)	Max. Ratings					h _{FE}				V _{CE(sat)} (V)								R1 (kΩ)		R2 (kΩ)		Package	Outline (Unit : mm)		
			V _{CEO} (V)		I _C (mA)		P _D (mW)	Min.		Typ.		V _{CE} (V)		I _C (mA)		Max.		I _C (mA)								I _B (mA)	
			Q1	Q2	Q1	Q2		Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2				
KRX101E	BA		50	-50	100	-100	200	50	50	80	80	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	10	TESV	
KRX102E	BM		50	-50	100	-100	200	80	80	200	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	10	47	47		
KRX103E	BB		50	-50	100	-100	200	70	70	120	120	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	22	22	22	22		
KRX201E	BA		50	-50	100	-100	200	50	50	80	80	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	10	TES6	
KRX202E	BB		50	-50	100	-100	200	70	70	120	120	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	22	22	22	22		
KRX203E	BC		50	-50	100	-100	200	80	80	200	200	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	47	47	47		
KRX204E	BD		50	-50	100	-100	200	80	80	200	200	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	2.2	2.2	47	47		
KRX206E	BK		50	-50	100	-100	200	80	80	150	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	47	47		
KRX207E	BT		50	-50	100	-100	200	50	80	80	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	47		
KRX209E	BM		50	-50	100	-100	200	80	80	200	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	10	47	47		
KRX210E	MN		-30	50	-500	100	200	140	50	-	80	-5	5	-100	10	-0.3	0.3	-50	10	-2.5	0.5	1	10	10	10		
KRX101U	BA		50	-50	100	-100	200	50	50	80	80	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	10	USV	
KRX103U	BB		50	-50	100	-100	200	70	70	120	120	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	22	22	22	22		
KRX201U	BA		50	-50	100	-100	200	50	50	80	80	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	10	US6	
KRX202U	BB		50	-50	100	-100	200	70	70	120	120	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	22	22	22	22		
KRX203U	BC		50	-50	100	-100	200	80	80	200	200	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	47	47	47		
KRX204U	BD		50	-50	100	-100	200	80	80	200	200	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	2.2	2.2	47	47		
KRX207U	BT		50	-50	100	-100	200	50	80	80	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	47		

Note) P_D= Total Rating

High Current BRT

Type No.				Max. Ratings			G _I			V _{O(ON)} (V)			R1 (kΩ)	R2 (kΩ)	Package	Outline (Unit : mm)
NPN	Mark	PNP	Mark	V _O (V)	I _O (mA)	P _D (mW)	Min.	V _O (V)	I _O (mA)	Max.	I _O (mA)	I _I (mA)				
KRC242S	NR	KRA222S	PR	50	800	200	39	5	50	0.3	50	2.5	2.2	2.2	SOT-23	
KRC243S	NS	KRA223S	PS	50	800	200	47	5	50	0.3	50	2.5	4.7	4.7		
KRC244S	NT	KRA224S	PT	50	800	200	56	5	50	0.3	50	2.5	10	10		
KRC245S	NU	KRA225S	PU	50	800	200	56	5	50	0.3	50	2.5	1	10		
KRC246S	NV	KRA226S	PV	50	800	200	56	5	50	0.3	50	2.5	2.2	10		
KRC452	CB	KRA352	AB	12	500	100	39	5	50	0.3	50	2.5	2.2	2.2	USM	
KRC453	CC	KRA353	AC	12	500	100	47	5	50	0.3	50	2.5	4.7	4.7		
KRC454	CD	KRA354	AD	12	500	100	56	5	50	0.3	50	2.5	10	10		
KRC456	CF	KRA356	AF	12	500	100	56	5	50	0.3	50	2.5	1	10		
KRC457	CG	KRA357	AG	12	500	100	56	5	50	0.3	50	2.5	2.2	10		
KRC242	-	KRA222	-	50	800	625	39	5	50	0.3	50	2.5	2.2	2.2	TO-92	
KRC243	-	KRA223	-	50	800	625	47	5	50	0.3	50	2.5	4.7	4.7		
KRC244	-	KRA224	-	50	800	625	56	5	50	0.3	50	2.5	10	10		
KRC245	-	KRA225	-	50	800	625	56	5	50	0.3	50	2.5	1	10		
KRC246	-	KRA226	-	50	800	625	56	5	50	0.3	50	2.5	2.2	10		

Type No.	Mark	Internal Circuit (Top view)	Max. Ratings			Min.	G _T		V _{O(ON)} (V)			R1 (kΩ)	R2 (kΩ)	Package	Outline (Unit : mm)		
			V _O (V)	I _O (mA)	P _D (mW)		V _O (V)	I _O (mA)	Max.	I _O (mA)	I _I (mA)						
KRA522T	PB		-50	-800	900 ▲	39	-5	-50	-0.3	-50	-2.5	2.2	2.2	TSV			
KRA523T	PC		-50	-800	900 ▲	47	-5	-50	-0.3	-50	-2.5	4.7	4.7				
KRA524T	PD		-50	-800	900 ▲	56	-5	-50	-0.3	-50	-2.5	10	10				
KRA525T	PE		-50	-800	900 ▲	56	-5	-50	-0.3	-50	-2.5	1	10				
KRA526T	PF		-50	-800	900 ▲	56	-5	-50	-0.3	-50	-2.5	2.2	10				
KRC642T	NB		50	800	900 ▲	39	5	50	0.3	50	2.5	2.2	2.2			TSV	
KRC643T	NC		50	800	900 ▲	47	5	50	0.3	50	2.5	4.7	4.7				
KRC644T	ND		50	800	900 ▲	56	5	50	0.3	50	2.5	10	10				
KRC645T	NE		50	800	900 ▲	56	5	50	0.3	50	2.5	1	10				
KRC646T	NF		50	800	900 ▲	56	5	50	0.3	50	2.5	2.2	10				
KRA722T	PB		-50	-800	900 ▲	39	-5	-50	-0.3	-50	-2.5	2.2	2.2	TS6			
KRA723T	PC		-50	-800	900 ▲	47	-5	-50	-0.3	-50	-2.5	4.7	4.7				
KRA724T	PD		-50	-800	900 ▲	56	-5	-50	-0.3	-50	-2.5	10	10				
KRA725T	PE		-50	-800	900 ▲	56	-5	-50	-0.3	-50	-2.5	1	10				
KRA726T	PF		-50	-800	900 ▲	56	-5	-50	-0.3	-50	-2.5	2.2	10				
KRC842T	NB		50	800	900 ▲	39	5	50	0.3	50	2.5	2.2	2.2			TS6	
KRC843T	NC		50	800	900 ▲	47	5	50	0.3	50	2.5	4.7	4.7				
KRC844T	ND		50	800	900 ▲	56	5	50	0.3	50	2.5	10	10				
KRC845T	NE		50	800	900 ▲	56	5	50	0.3	50	2.5	1	10				
KRC846T	NF		50	800	900 ▲	56	5	50	0.3	50	2.5	2.2	10				

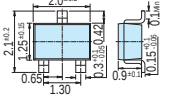
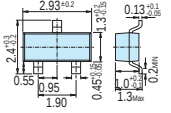
Note) ▲ : Package Mounted on a Ceramic Board (600mm² × 0.8mm)

Audio Muting BRT

Type No.	Mark	Internal Circuit (Top view)	Max. Ratings			h_{FE}				$V_{CE(sat)}$ (V)			R_1 (k Ω)	R_{ON} (Ω)	Package	Outline (Unit : mm)
			V_{CEO} (V)	I_C (mA)	P_D (mW)	Min.	Max.	V_{CE} (V)	I_C (mA)	Max.	I_C (mA)	I_B (mA)	Typ.	Typ.		
KRC231S	NW		15	600	200	200	800	5	50	0.08	50	2.5	2.2	0.6	SOT-23	
KRC232S	NY		15	600	200	200	800	5	50	0.08	50	2.5	5.6	0.6		
KRC281S	MQ□		20	300	200	200	1200	2	4	0.1	30	3	2.2	1		
KRC231	-		15	600	625	200	800	5	50	0.08	50	2.5	2.2	0.6	TO-92	
KRC232	-		15	600	625	200	800	5	50	0.08	50	2.5	5.6	0.6		
KRC281	-		20	300	625	200	1200	2	4	0.1	30	3	2.2	1		

Note) ▲ : Package mounted on a ceramic board (600mm² × 0.8mm)

General Purpose Transistor

Type No.	Mark	Complementary	Mark	Max. Ratings			h _{FE}				V _{CE(sat)} (V)			f _T (MHz)				Package	Outline (Unit : mm)
				V _{CEO} (V)	I _C (mA)	P _C (mW)	Min.	Max.	V _{CE} (V)	I _C (mA)	Max.	I _C (mA)	I _B (mA)	Min.	Typ.	V _{CE} (V)	I _C (mA)		
BC857W	3□	BC847W	1□	-45	-100	100	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	USM	
BC847W	1□	BC857W	3□	45	100	100	110	800	5	2	0.25	10	0.5	-	300	5	10		
BC857	3□	BC847	1□	-45	-100	350	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	SOT-23	
BC860	4□	BC850	2□	-45	-100	350	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10		
BC807	5□	BC817	6□	-45	-800	350	100	630	-1	-100	-0.7	-500	-50	80	-	5	10		
BC856	3□	BC846	1□	-65	-100	350	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10		
BC848	1□	-	3□	30	100	350	110	800	5	2	0.25	10	0.5	-	300	5	10		
BC847	1□	BC857	3□	45	100	350	110	800	5	2	0.25	10	0.5	-	300	5	10		
BC850	2□	BC860	4□	45	100	350	200	800	5	2	0.25	10	0.5	-	300	5	10		
BC817	6□	BC807	5□	45	800	350	100	630	-1	-100	-0.7	-500	-50	100	-	5	10		
BC846	1□	BC856	3□	65	100	350	110	450	5	2	0.25	10	0.5	-	300	5	10		
MMBTA56	ANX	MMBTA06	ADX	-80	-500	350	100	-	-1	-10	-0.25	-100	-10	50	-	1	100		
MMBTA06	ADX	MMBTA56	ANX	80	500	350	100	-	1	10	0.25	100	10	100	-	2	10		
KN3906S	ZAA	KN3904S	ZCA	-40	-200	350	60	-	-1	-0.1	-0.25	-10	-1	-	250	-20	-10		
KN4403S	ZWA	KN4401S	ZUA	-40	-600	350	30	-	-1	-0.1	-0.4	-150	-15	200	-	-10	-20		
KN3904S	ZCA	KN3906S	ZAA	40	200	350	40	-	1	0.1	0.2	10	1	-	300	20	10		
KN4401S	ZUA	KN4403S	ZWA	40	600	350	20	-	1	0.1	0.4	150	15	250	-	10	20		
2N5401S	ZE	-	-	-150	-600	350	60	240	-5	-10	-0.2	-10	-1	100	300	-10	-10		
2N5551S	ZF	-	-	160	600	350	80	250	5	10	0.15	10	1	100	300	10	10		
MMBTA92	YV	MMBTA42	AAX	-300	-500	350	40	-	-10	-10	-0.5	-20	-2	50	-	-20	-10		
MMBTA42	AAX	MMBTA92	YV	300	500	350	40	-	10	10	0.5	20	2	50	-	20	10		
MMBTA44	APX	-	-	400	300	350	50	200	10	10	0.5	10	1	20	-	10	10		

Note) □ : Package Mounted on 99.5% Alumina 10 × 8 × 0.6mm, □ : hFE Grade

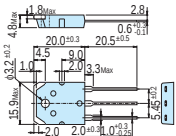
General Purpose Transistor

Technical drawing of a mechanical part with dimensions:

- Top view: 3.7 MAX, 1.0, 14.0 ± 0.5, 0.85, 0.55 MAX, 0.45
- Side view: 4.8 MAX, 1.0, 4.7 MAX, 1.27, 0.45

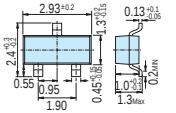
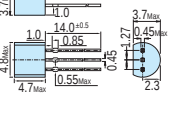
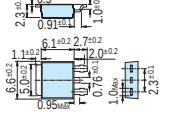
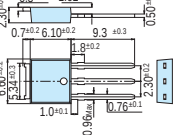
Note) : Package Mounted on 99.5% Alumina 10 × 8 × 0.6mm

General Purpose Transistor

Type No.	Complementary	Max. Ratings				h_{FE}				$V_{CE(sat)}$ (V)			f_T (MHz)				Package	Outline (Unit : mm)
		V_{CEO} (V)	I_C (A)	P_C (W)	P_C (W)	Min.	Max.	V_{CE} (V)	I_C (mA)	Max.	I_C (mA)	I_B (mA)	Min.	Typ.	V_{CE} (V)	I_C (mA)		
TIP36C	TIP35C	-100	-25	-	125	55	160	-5	-1.5A	-1.8	-15A	-1.5A	3	-	-5	-1A	TO-3P(N)	
TIP35C	TIP36C	100	25	-	125	55	160	5	1.5A	1.8	15A	1.5A	3	-	5	1A		

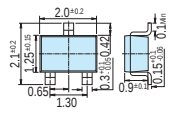
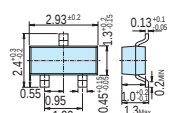
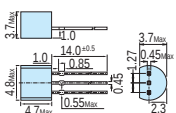
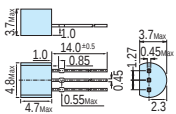
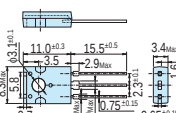
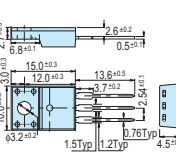
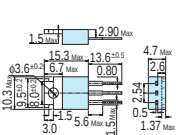
Note) : $T_a=25$, : $T_c=25$

Darlington Transistor

Type No.	Mark	Complementary	Max. Ratings			h_{FE}			$V_{CE(sat)}$ (V)			f_T (MHz)			Package	Outline (Unit : mm)
			V_{CE} (V)	I_C (mA)	P_C (mW)	Min.	V_{CE} (V)	I_C (mA)	Max.	I_C (mA)	I_B (mA)	Typ.	V_{CE} (V)	I_C (mA)		
MMBTA63	AGX	-	-30	-500	350	5000	-5	-10	-1.5	-100	-0.1	125	-5	-10	SOT-23	
MMBTA517	UA	-	30	400	350	30000	2	100	1	100	1	220	2	100		
MMBTA13	AIX	-	30	500	350	5000	5	10	1.5	100	0.1	125	5	10		
BC517	-	-	30	500	625	30,000	2	100	1	100	1	220	2	100	TO-92	
MJD112	-	MJD117	100	2A	20W	1000	3	2A	2	2A	8	25	10	750	DPAK	
MJD112L	-	MJD117L	100	2A	20W	1000	3	2A	2	2A	8	25	10	750	IPAK(1)	

Note) : V_{CEO} , : Typ, : $T_c=25$

Switching Transistor

Type No.	Mark	Complementary	Mark	Max. Ratings			h _{FE}			V _{CE(sat)} (V)			f _T (MHz)	t _{on} (ns)	t _{off} (ns)	t _r (ns)	t _{stg} (ns)	t _f (ns)	Package	Outline (Unit : mm)
				V _{CEO} (V)	I _C (mA)	P _C (mW)	Max.	V _{CE} (V)	I _C (mA)	Max.	I _C (mA)	I _B (mA)	Min.	Max.	Max.	Max.	Max.	Max.		
KTN2907AU	ZH	KTN2222AU	ZG	-60	-600	100	300	-10	-150	-0.4	-150	-15	200	45	100	40	80	30	USM	
KTN2222AU	ZG	KTN2907AU	ZH	40	600	100	300	10	150	0.4	150	15	250	-	-	25	225	60		
2N3906S	ZA	2N3904S	ZC	-40	-200	350	300	-1	-0.1	-0.25	-10	-1	250	-	-	35	225	75	SOT-23	
2N3904S	ZC	2N3906S	ZA	40	200	350	300	1	10	0.2	10	1	300	-	-	35	200	50		
KTN2222S	ZB	KTN2907S	ZDA	30	600	350	300	10	150	0.4	150	15	250	-	-	25	225	60		
KTN2222AS	ZG	KTN2907AS	ZH	40	600	350	300	10	150	0.3	150	15	300	-	-	25	225	60		
KN3904	-	-	-	40	200	625	300	1	10	0.2	10	1	300	-	-	35	200	50	TO-92	
KTN2907A	-	KTN2222A	-	-60	-600	625	300	-10	-150	-0.4	-150	-15	200	45	100	40	80	30	TO-92	
KTN2222A	-	KTN2907A	-	40	600	625	300	10	150	0.3	150	15	300	-	-	25	225	60		
MJE13003	-	-	-	400	1.5A	20W	38	2	500	0.5	500	100	4	-	1.1μs	4μs	-	700	TO-126	
MJE13003HV	-	-	-	530	1.5A	20W	50	10	400	0.8	500	100	4	1.1μs	-	4μs	-	700		
MJE13005DF	-	-	-	400	5A	30W	35	5	1A	0.5	1A	200	4	-	150	5μs	-	800	TO-220IS	
MJE13007F	-	-	-	400	8A	40W	50	5	2A	1	2A	400	4	-	1.6μs	3μs	-	700		
MJE13009F	-	-	-	400	12A	50W	28	5	5A	1	5A	1A	4	-	1.1μs	3μs	-	700		
KTC5027F	-	-	-	800	3A	40W	40	5	200	2	1.5A	300	15	0.5μs	3.3μs	-	3μs	300		
MJE13005D	-	-	-	400	5A	75W	35	5	1A	0.5	1A	200	4	-	150	5μs	-	800	TO-220AB	
MJE13009	-	-	-	400	12A	100W	28	5	5A	1	5A	1A	4	-	1.1μs	3μs	-	700		
KTC5027	-	-	-	800	3A	50W	40	5	200	2	1.5A	300	15	-	500	3μs	-	300		
MJE5555	-	-	-	400	5A	75W	40	3	800	0.5	1A	200	-	-	200	2.5μs	-	300		

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
2N2222A	Onsemi	KTN2222A	2SA1204	Toshiba	KTA1001	2SA1584	Rohm	KTA2017	2SB710	Panasonic	KTA1505S
2N2907A	Onsemi	KTN2907A	2SA1208	Sanyo	KTA1024	2SA1586	Toshiba	KTA2014	2SB719	Renesas	KTB1369
2N3904	Onsemi	2N3904	2SA1213	Toshiba	KTA1666	2SA1587	Toshiba	KTA2017	2SB720	Renesas	KTB1369
2N5551	Onsemi	2N5551	2SA1214	Toshiba	KTB1366	2SA1588	Toshiba	KTA2015	2SB725	Panasonic	KTA1266
2SA473	Toshiba	KTA1658	2SA1220	Renesas	KTA1704	2SA1589	Sanyo	KRA113S	2SB739	Renesas	KTA1273
2SA539	Renesas	KTA1266	2SA1222	Renesas	KTA1275	2SA1590	Sanyo	KRA113M	2SB746	Renesas	KTA1270
2SA562TM	Toshiba	KTA1270	2SA1225	Toshiba	KTA1225D	2SA1591	Sanyo	KRA106M	2SB761/A	Panasonic	KTA1046
2SA564A	Panasonic	KTA1266	2SA1225	Toshiba	KTA1225L	2SA1597	Sanyo	KRA106S	2SB762	Panasonic	KTA1368
2SA574	JRC	KTA1266	2SA1235	Renesas	KTA1504S	2SA1603	Renesas	KTA2014	2SB764	Sanyo	KTA1281
2SA608	Sanyo	KTA1266	2SA1241	Toshiba	KTA1718D	2SA1606	Sanyo	KTA1659A	2SB766	Panasonic	KTA1663
2SA671	Renesas	KTA1046	2SA1241	Toshiba	KTA1718L	2SA1608	Renesas	KTA2015	2SB767	Panasonic	KTA1662
2SA673	Renesas	KTA1270	2SA1242	Toshiba	KTA1242L	2SA1611	Renesas	KTA2014	2SB772	Sanyo	KTB772
2SA683	Panasonic	KTA1273	2SA1242	Toshiba	KTA1242D	2SA1612	Renesas	KTA2017	2SB776	Sanyo	KTB688
2SA684	Panasonic	KTA1281	2SA1244	Toshiba	KTA1385D	2SA1622	Sanyo	KTA2014	2SB783	Renesas	KTB1368
2SA715	Renesas	KTA1658	2SA1244	Toshiba	KTA1385L	2SA1625	Renesas	KTA1277	2SB789A	Panasonic	KTA1661
2SA719	Panasonic	KTA1270	2SA1246	Sanyo	KTCT3198	2SA1647	Renesas	KTA1042L	2SB798	Renesas	KTA1663
2SA733	Renesas	KTA1266	2SA1252	Sanyo	KTA1504S	2SA1653	Sanyo	KRA119S	2SB805	Renesas	KTA1661
2SA738	Renesas	KTA1658	2SA1264N	Toshiba	KTB688	2SA1654	Sanyo	KRA119M	2SB807	Panasonic	KTA1660
2SA740	Toshiba	KTB1369	2SA1282A	Renesas	KTA1273	2SA1655	Sanyo	KRA101S	2SB808	Sanyo	KTA1021
2SA769	Sanken	KTB1368	2SA1284	Renesas	KTA1274	2SA1656	Sanyo	KRA101M	2SB810	Renesas	KTA1271
2SA771	Sanken	KTA1049	2SA1285	Renesas	KTA1024	2SA1676	Sanyo	KRA304	2SB814	Panasonic	KTA1517
2SA777	Panasonic	KTA1274	2SA1286	Renesas	KTA1273	2SA1677	Sanyo	KRA303	2SB815	Sanyo	KTA1298
2SA812	Renesas	KTA1504S	2SA1296	Toshiba	KTA1273	2SA1678	Sanyo	KRA302	2SB816	Sanyo	KTB688
2SA813	Renesas	KTA1504S	2SA1304	Toshiba	KTB1369	2SA1689	Sanyo	BF421	2SB817	Sanyo	KTB817
2SA817A	Toshiba	KTA1274	2SA1306	Toshiba	KTA1659A	2SA1694	Sanken	KTB688	2SB834	Toshiba	KTA1046
2SA839	Toshiba	KTB1369	2SA1312	Toshiba	KTA1517	2SA1695	Sanken	KTA1695	2SB849	Renesas	KTB688
2SA843	Panasonic	KTB1369	2SA1314	Toshiba	KTA1001	2SA1706	Sanyo	KTA1281	2SB856	Renesas	KTA1046
2SA844	Renesas	KTA1266	2SA1318	Sanyo	KTA1266	2SA1721	Toshiba	KTA1073T	2SB858	Renesas	KTB1368
2SA854	Rohm	KTA1270	2SA1335	Rohm	KTA1268	2SA1722	Sanyo	KRA318	2SB861	Renesas	KTB1369
2SA916	Renesas	KTA1024	2SA1338	Sanyo	KTA1505S	2SA1727	Rohm	KTA1703	2SB864	Renesas	KTA1266
2SA933	Rohm	KTA1266	2SA1341	Sanyo	KRA104S	2SA1742	Renesas	KTB1370	2SB874	Renesas	KTA1715
2SA934	Rohm	KTA1273	2SA1342	Sanyo	KRA103S	2SA1745	Sanyo	KTA2015	2SB887	Sanyo	KTB2510
2SA935	Rohm	KTA1023	2SA1343	Sanyo	KRA109S	2SA1767	Panasonic	BF421	2SB890	Rohm	KTA200
2SA940	Toshiba	KTB1369	2SA1344	Sanyo	KRA102S	2SA1774	Rohm	KTA2014E	2SB892	Sanyo	KTA1281
2SA949	Toshiba	KTA1024	2SA1345	Sanyo	KRA104M	2SA1774H	Rohm	KTA2014E	2SB899	Renesas	KTA1046
2SA950	Toshiba	KTA1271	2SA1346	Sanyo	KRA103M	2SA1775	Rohm	KTA1703	2SB901	Renesas	KTB1368
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2SA970	Toshiba	KTA1268	2SA1368	Renesas	KTA1662	2SA1862	Rohm	KTA1862D	2SB966	Renesas	KTB688
2SA973	Panasonic	KTA1266	2SA1381	Sanyo	KTA1381	2SA1868	Panasonic	KTA1277	2SB984	Renesas	KTA1275
2SA985A	Renesas	KTA1659A	2SA1384	Rohm	KTA1384D	2SA1900	Rohm	KTA1666	2SB1010	Rohm	KTA1273
2SA989	Renesas	KTA1266	2SA1385	Renesas	KTA1385D	2SA1924	Toshiba	KTA1703	2SB1015	Toshiba	KTA1046
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2SA1036K	Rohm	KTA1505S	2SA1502	Sanyo	KRA118S	2SB546	Renesas	KTB1369	2SB1085A	Rohm	KTA1659A
2SA1037K	Rohm	KTA1504S	2SA1503	Sanyo	KRA118M	2SB560	Renesas	KTB1369	2SB1095	Renesas	KTA1049
2SA1037AK	Rohm	KTA1504S	2SA1507	Sanyo	KTA1700	2SB561	Renesas	KTA1270	2SB1096	Renesas	KTB1369
2SA1038	Rohm	KTA1268	2SA1508	Sanyo	KRA114S	2SB562	Renesas	KTA1273	2SB1111	Renesas	KTA1715
2SA1049	Toshiba	KTA1268	2SA1509	Sanyo	KRA114M	2SB566	Renesas	KTA1273	2SB1114	Renesas	KTA1001
2SA1069	Renesas	KTA1049	2SA1510	Sanyo	KRA110S	2SB568	Renesas	KTB1368	2SB1119	Sanyo	KTA1664
2SA1111	Panasonic	KTA1659A	2SA1511	Sanyo	KRA110M	2SB568	Renesas	KTB1369	2SB1120	Sanyo	KTA1001
2SA1121	Renesas	KTA1505S	2SA1518	Sanyo	KRA224S	2SB595	Toshiba	KTA1049	2SB1123	Sanyo	KTA1666
2SA1127	Panasonic	KTA1266L	2SA1519	Sanyo	KRA223S	2SB596	Toshiba	KTB1368	2SB1123	Sanyo	KTA1666
2SA1145	Toshiba	KTA1024	2SA1520	Sanyo	KRA226S	2SB604	Panasonic	KTB1368	2SB1132	Rohm	KTA1664
2SA1151	Renesas	KTA1266	2SA1521	Sanyo	KRA222S	2SB624	Renesas	KTA1298	2SB1132	Rohm	KTA1664
2SA1156	Renesas	KTA1277	2SA1522	Sanyo	KRA224M	2SB628	Renesas	KTA1659A	2SB1142	Sanyo	KTA1715
2SA1156	Renesas	KTA1703	2SA1523	Sanyo	KRA223M	2SB631K	Sanyo	KTB631K	2SB1151	Renesas	KTB1151
2SA1162	Toshiba	KTA1504S	2SA1524	Sanyo	KRA226M	2SB646A	Renesas	KTA1024	2SB1181	Rohm	KTA1045D
2SA1173	Renesas	KTA1660	2SA1525	Sanyo	KRA222M	2SB647/A	Renesas	KTA1023	2SB1182	Rohm	KTA1718D
2SA1179	Sanyo	KTA1504S	2SA1552	Sanyo	KTA1225D	2SB649/A	Renesas	KTA1700	2SB1184	Rohm	KTA1040D
2SA1182	Toshiba	KTA1505S	2SA1552	Sanyo	KTA1225L	2SB649A	Renesas	KTA1700	2SB1186A	Rohm	KTA1659A
2SA1184	Toshiba	KTA1659A	2SA1559	Rohm	KTA1270	2SB686	Toshiba	KTB688	2SB1187	Rohm	KTA1046
2SA1191	Renesas	KTA1268	2SA1563	Sanyo	KRA107S	2SB688	Toshiba	KTB688	2SB1188	Rohm	KTA1663
2SA1200	Toshiba	KTA1660	2SA1564	Sanyo	KRA107M	2SB698	Sanyo	KTA1271	2SB1189	Rohm	KTA1661
2SA1201	Toshiba	KTA1661	2SA1576	Rohm	KTA2014	2SB703	Renesas	KTB1368	2SB1197K	Rohm	KTA1298
2SA1202	Toshiba	KTA1662	2SA1577	Rohm	KTA2015	2SB708	Renesas	KTB1370	2SB1201	Sanyo	KTA1718L
2SA1203	Toshiba	KTA1663	2SA1579	Rohm	KTA2017	2SB709A	Panasonic	KTA1504S	2SB1201	Sanken	KTA1718D

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
2SB1202	Sanyo	KTA1040D	2SC2167	Sanken	KTD2061	2SC3400	Sanyo	KRC103M	2SC4363	Sanyo	KRC101M
2SB1202	Sanyo	KTA1040L	2SC2168	Sanken	KTD2061	2SC3401	Sanyo	KRC109M	2SC4397	Sanyo	KRC403
2SB1203	Sanyo	KTA1385D	2SC2229	Toshiba	KTC3206	2SC3402	Sanyo	KRC102M	2SC4398	Sanyo	KRC402
2SB1203	Sanyo	KTA1385L	2SC2233	Toshiba	KTC1003	2SC3421	Toshiba	KTD600K	2SC4400	Sanyo	KTC4080
2SB1205	Sanyo	KTA1242D	2SC2235	Toshiba	KTC1027	2SC3423	Toshiba	KTC3423	2SC4413	Sanyo	KTC4075
2SB1205	Sanyo	KTA1242L	2SC2236	Toshiba	KTC3205	2SC3440	Renesas	KTC3265	2SC4418	Sanken	KTC4419
2SB1212	Rohm	KTA1275	2SC2238	Toshiba	KTC4370A	2SC3444	Renesas	KTC4378	2SC4448	Toshiba	KTC1001
2SB1216	Sanyo	KTA1042D	2SC2239	Toshiba	KTD2061	2SC3446	Sanyo	KTC4520F	2SC4467	Sanken	KTD718
2SB1216	Sanyo	KTA1042L	2SC2274	Sanyo	KTC200	2SC3447	Sanyo	KTC4521F	2SC4467	Sanken	KTC5197
2SB1218	Panasonic	KTA1504S	2SC2275A	Renesas	KTC4370A	2SC3468	Sanyo	KTC3207	2SC4468	Sanken	KTC4468
2SB1218A	Panasonic	KTA2014	2SC2320/L	Renesas	KTC3198/L	2SC3503	Sanyo	KTC3503	2SC4497	Toshiba	KTC3207T
2SB1219	Panasonic	KTA2015	2SC2344	Sanyo	KTD2061	2SC3518	Renesas	KTC5103D	2SC4506	Rohm	KTC3229
2SB1220	Panasonic	KTA2017	2SC2383	Toshiba	KTC3228	2SC3518-Z	Renesas	KTC5103D	2SC4511	Sanken	KTC2028
2SB1234	Sanyo	KTB1234T	2SC2404	Panasonic	KTC3880S	2SC3570	Renesas	KTC4419	2SC4512	Sanken	KTC2028
2SB1237	Rohm	KTA1273	2SC2411K	Rohm	KTC3876S	2SC3621	Toshiba	KTC2800	2SC4533	Panasonic	KTC4520F
2SB1240	Rohm	KTA1281	2SC2412K	Rohm	KTC3875S	2SC3624	Toshiba	KTC3295	2SC4544	Toshiba	KTC3229
2SB1261	Renesas	KTA1040L	2SC2462	Renesas	KTC3875S	2SC3631	Renesas	KTC3631D	2SC4546	Sanken	MJE13007F
2SB1261-Z	Renesas	KTA1040D	2SC2480	Panasonic	KTC3882	2SC3691	Renesas	KTC2028	2SC4549	Renesas	KTC2028
2SB1274	Sanyo	KTA1046	2SC2482	Toshiba	KTC3207	2SC3830	Sanken	KTC4521F	2SC4553	Renesas	KTD1937
2SB1275	Rohm	KTA1225D	2SC2501	Shindengen	KTC4419	2SC3859	Sanyo	KRC111S	2SC4555	Sanyo	KTC4076
2SB1290	Rohm	KTB1370	2SC2517	Renesas	KTC2028	2SC3860	Sanyo	KRC111M	2SC4558	Sanken	KTD2066
2SB1293	Rohm	KTA1049	2SC2535	Toshiba	KTC4419	2SC3863	Sanyo	KRC118S	2SC4573	Rohm	KTD1414
2SB1294	Rohm	KTA1049	2SC2553	Toshiba	KTC4419	2SC3864	Sanyo	KRC118M	2SC4574	Rohm	KTD1414
2SB1315	Renesas	KTB688	2SC2610	Renesas	KTC3207	2SC388A	Toshiba	KTC3197	2SC4596	Rohm	KTC2028
2SB1316	Rohm	MJD117	2SC2613	Renesas	KTC4419	2SC3898	Sanyo	KRC114S	2SC4617	Rohm	KTC4075E
2SB1328	Rohm	KTA1700	2SC2618	Renesas	KTC3876S	2SC3899	Sanyo	KRC114M	2SC4617H	Rohm	KTC4075E
2SB1364	Renesas	KTA1663	2SC2620	Renesas	KTC3880S	2SC3900	Sanyo	KRC110S	2SC4620	Rohm	MPSA44
2SB1371	Panasonic	KTB688	2SC2655	Toshiba	KTC3209	2SC3901	Sanyo	KRC110M	2SC4662	Sanken	KTC4419
2SB1374	Rohm	KTA1281	2SC2688	Renesas	KTC4217	2SC3912	Sanyo	KRC244S	2SC4667	Toshiba	2N3904S
2SB1375	Toshiba	KTA1046	2SC2703	Toshiba	KTD863	2SC3913	Sanyo	KRC243S	2SC4672	Rohm	KTC4379
2SB1385	Renesas	KTA1385L	2SC2705	Toshiba	KTC3206	2SC3914	Sanyo	KRC246S	2SC4688	Toshiba	KTD718
2SB1409L	Renesas	KTA1225L	2SC2712	Toshiba	KTC3875S	2SC3915	Sanyo	KRC242S	2SC4689	Toshiba	KTD718
2SB1409S	Renesas	KTA1225D	2SC2714	Toshiba	KTC3880S	2SC3916	Sanyo	KRC244M	2SC4738	Toshiba	KTC4075E
2SB1412	Rohm	KTA1242D	2SC2732	Renesas	KTC3882	2SC3917	Sanyo	KRC243M	2SC4738F	Toshiba	KTC4075E
2SB1417	Panasonic	KTA1046	2SC2755	Renesas	KTC3880S	2SC3918	Sanyo	KRC246M	2SC4738FT	Toshiba	KTC4075V
2SB1421	Panasonic	KTB688	2SC2812	Sanyo	KTC3875S	2SC3919	Sanyo	KRC242M	2SC4833	Shindengen	KTC4419
2SB1455	Sanyo	KTA1049	2SC2859	Toshiba	KTC3876S	2SC3920	Sanyo	KTC2800	2SC4883/A	Sanken	KTD2061
2SB1475	Renesas	KTA2015	2SC2873	Toshiba	KTC4379	2SC3938	Panasonic	KTC4076	2SC4915	Toshiba	KTC4080E
2SB1530	Renesas	KTB1369	2SC2873	Toshiba	KTC4379	2SC3969	Rohm	KTC4520F	2SC4917	Toshiba	MJE13003
2SB1560	Sanken	KTB2510	2SC2878	Toshiba	KTC2074	2SC4002	Sanyo	MPSA44	2SC4944	Toshiba	KTC601U
2SB1561	Rohm	KTA1666	2SC2881	Toshiba	KTC4373	2SC4008	Rohm	KTD2060	2SC5001	Rohm	KTC5001D
2SB1565	Rohm	KTA1046	2SC2882	Toshiba	KTC4374	2SC4047	Sanyo	KRC107S	2SC5028	Toshiba	KTC2814
2SB1650	Rohm	KTA1700	2SC2883	Toshiba	KTC4375	2SC4048	Sanyo	KRC107M	2SC5101	Sanken	KTD718
2SB1725	Sanken	KTB1370	2SC2884	Toshiba	KTC4376	2SC4051	Shindengen	KTC4520F	2SC5103F5	Rohm	KTC5103D
2SB1859A	Sanken	KTB1369	2SC2983	Toshiba	KTC2983D	2SC4053	Shindengen	KTC4521F	2SC5113	Rohm	KTC4521F
2SB1891	Toshiba	KTA1715	2SC2983	Toshiba	KTC2983L	2SC4061K	Rohm	MMBTA42	2SC5197	Toshiba	KTC5197
2SC382TM	Toshiba	KTC3197	2SC3068	Sanyo	KTC3112	2SC4062	Renesas	KTD1937	2SC5248	Rohm	KTD2061
2SC536	Sanyo	KTC3198	2SC3072	Toshiba	KTC3072D	2SC4068	Panasonic	KTC4080	2SC5658	Rohm	KTC4075V
2SC789	Toshiba	KTD2060	2SC3072	Toshiba	KTC3072L	2SC4081	Rohm	KTC4075	2SC5663	Rohm	KTC4072V
2SC790	Toshiba	KTC2026	2SC3074	Toshiba	KTC5103L	2SC4082	Rohm	KTC4082	2SD57	Renesas	KTC2028
2SC945	Renesas	KTC3198	2SC3074	Toshiba	KTC5103D	2SC4097	Rohm	KTC4076	2SD58	Renesas	KTC2028
2SC1061	Renesas	KTC2026	2SC3112	Toshiba	KTC3112	2SC4099	Rohm	KTC4080	2SD78	Renesas	KTC2028
2SC1173	Toshiba	KTC4369	2SC3124	Toshiba	KTC3882	2SC4116	Toshiba	KTC4075	2SD122	Renesas	KTD2060
2SC1213	Renesas	KTC3202	2SC3134	Sanyo	KTC3875S	2SC4118	Toshiba	KTC4076	2SD141	Renesas	KTC2028
2SC1213A	Renesas	KTC200	2SC3142	Sanyo	KTC3880S	2SC4120	Sanyo	KRC113S	2SD142	Renesas	KTC2028
2SC1371	Panasonic	KTC3202	2SC3142A	Renesas	KTC3205	2SC4121	Sanyo	KRC113M	2SD143	Renesas	KTC2028
2SC1384	Renesas	KTC3209	2SC3181N	Toshiba	KTD718	2SC4129	Rohm	MJE13007F	2SD144	Renesas	KTC2028
2SC1398	Panasonic	KTC4369	2SC3187	Panasonic	KTC3207	2SC4129	Rohm	KTC4419	2SD150	Renesas	KTC2028
2SC1419	Renesas	KTC2026	2SC3225	Toshiba	KTC3209	2SC4133	Sanyo	KRC106M	2SD152	Renesas	KTD2060
2SC1505	Renesas	KTC3208	2SC3243	Renesas	KTD863	2SC4137	Rohm	KTC3114	2SD154	Renesas	KTD2060
2SC1569	Toshiba	KTC3208	2SC3246	Renesas	KTC3209	2SC4146	Sanyo	KRC106S	2SD155	Renesas	KTD2060
2SC1573	Panasonic	KTC3207	2SC3247	Renesas	KTD863	2SC4154	Renesas	KTC4075	2SD234	Toshiba	KTC2028
2SC1623	Renesas	KTC3875S	2SC3249	Renesas	KTC3207	2SC4155	Renesas	KTC4075	2SD235	Toshiba	KTC2028
2SC1685	Panasonic	KTC3198	2SC3252	Sanyo	KTC4369	2SC4177	Renesas	KTC4075	2SD254	Renesas	KTC2028
2SC1740	Rohm	KTC3198	2SC3258	Toshiba	KTC2028	2SC4178	Renesas	KTC4080	2SD255	Renesas	KTC2028
2SC1741	Rohm	KTC3202	2SC3266	Toshiba	KTC3205	2SC4181	Renesas	KTC4075	2SD256	Sanken	KTC2028
2SC1815	Toshiba	KTC3198	2SC3269	Rohm	KTC3207	2SC4182	Renesas	KTC4082	2SD288	Renesas	KTC2028
2SC1826	Sanken	KTD2026	2SC3295	Toshiba	KTC3295	2SC4207	Sanyo	KTC2983D	2SD289	Renesas	KTC2028
2SC1881	Renesas	KTD2424	2SC3296	Toshiba	KTD2061	2SC4207	Sanyo	KTC2983L	2SD313	Sanyo	KTC2028
2SC1905	Panasonic	KTC3208	2SC3297	Toshiba	KTC4369	2SC4211	Sanyo	KTC3875S	2SD314	Sanyo	KTC2028
2SC1913	Panasonic	KTD2061	2SC3298	Toshiba	KTC4370A	2SC4215	Toshiba	KTC4080	2SD315	Sanyo	KTD2060
2SC1921	Renesas	KTC3229	2SC3303	Toshiba	KTC2022D	2SC4216	Sanyo	KRC110M	2SD317/A	Panasonic	KTD2060
2SC1959	Toshiba	KTC3202	2SC3303	Toshiba	KTC2022L	2SC4217	Sanyo	KTC4217	2SD318/A	Panasonic	KTD2060
2SC1983	Sanken	KTD2092	2SC3326	Toshiba	KTD1304	2SC4251	Toshiba	KTC4082	2SD325	Sanyo	KTC4369
2SC2001	Renesas	KTC3203	2SC3331	Sanyo	KTC3198	2SC4258	Renesas	KTC4080	2SD359	Renesas	KTC2028
2SC2060	Rohm	KTD863	2SC3395	Sanyo	KRC104S	2SC4259	Renesas	KTC4080	2SD360	Renesas	KTC2028
2SC2073	Toshiba	KTD2061	2SC3396	Sanyo	KRC103S	2SC4270	Sanyo	KTC3882	2SD361	Renesas	KTC2028
2SC2075	Toshiba	Conserved/Discontinued	2SC3397	Sanyo	KRC109S	2SC4331	Renesas	KTC2022L	2SD365	Panasonic	KTC2028
2SC2078	Sanyo	Conserved/Discontinued	2SC3398	Sanyo	KRC102S	2SC4338	Renesas	MJD112L	2SD389	Panasonic	KTD2060
2SC2120	Toshiba	KTC3203	2SC3399	Sanyo	KRC104M	2SC4362	Sanyo	KRC101S	2SD390	Panasonic	KTD2060

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
2SD401A	Renesas	KTD2061	2SD1236	Sanyo	KTC2028	2SD2012	Toshiba	KTC2026	BD240/A	Onsemi	KTA1046
2SD415	Renesas	KTD600K	2SD1264/A	Panasonic	KTD2061	2SD2014	Sanken	KTD1414	BD240B	Onsemi	KTA1046
2SD418	Panasonic	KTD2499	2SD1268	Panasonic	KTD2060	2SD2022	Rohm	KTD2424	BD240C	Onsemi	KTA1049
2SD438	Sanyo	KTC1027	2SD1270	Panasonic	KTC2028	2SD2023	Rohm	KTC2026	BD241/A	Onsemi	KTC2026
2SD468	Renesas	KTC3205	2SD1273	Panasonic	KTD2092	2SD2027	Sanyo	KTC2026	BD241B	Onsemi	KTD2060
2SD471	Renesas	KTC3205	2SD1276	Panasonic	KTD1414	2SD2032	Rohm	KTD1414	BD241C	Onsemi	KTC2028
2SD475	Renesas	KTD2060	2SD1280	Panasonic	KTC4375	2SD2035	Rohm	KTD2060	BD242/A	Onsemi	KTC2026
2SD476	Renesas	KTD2060	2SD1288	Renesas	KTD718	2SD2051	Panasonic	KTD2424	BD242B	Onsemi	KTB1368
2SD477	Renesas	KTD2061	2SD1289	Renesas	KTD718	2SD2061	Rohm	KTC2026	BD242C	Onsemi	KTA1049
2SD478	Renesas	KTD2061	2SD1302	Panasonic	KTC3202	2SD2064	Panasonic	KTD718	BD677A	Fairchild	KTD1411
2SD488	Onsemi	KTD2060	2SD1328	Panasonic	KTC2875	2SD2092	Toshiba	KTD2092	BD809	Onsemi	KTC4512
2SD489	Onsemi	KTD2060	2SD1353	Toshiba	KTC2026	2SD2102	Renesas	KTD1414	BD810	Onsemi	KTA1726
2SD490	Onsemi	KTD2060	2SD1354	Toshiba	KTC2026	2SD2107	Renesas	KTD2060	BF420	Philips	BF420
2SD525	Toshiba	KTC2028	2SD1369	Toshiba	KTD2424	2SD2110	Renesas	KTD1414	BF421	Philips	BF421
2SD526	Toshiba	KTD2060	2SD1370	Toshiba	KTD1414	2SD2118	Rohm	KTC3072	BF422	Philips	BF422
2SD570	Panasonic	KTD2060	2SD1383K	Rohm	MMBTA63	2SD2118	Rohm	KTC3072D	BF423	Philips	BF423
2SD580	Toshiba	KTC2026	2SD1384	Rohm	KTC3205	2SD2123L	Renesas	KTC2983L	BN1A3Q	Renesas	KRA116M
2SD600K	Sanyo	KTD600K	2SD1406	Toshiba	KTC2026	2SD2123S	Renesas	KTC2983D	BN1A4M	Renesas	KRA102M
2SD601	Panasonic	KTC3875S	2SD1407	Toshiba	KTC2028	2SD2128	Renesas	KTD2424	BN1A4P	Renesas	KRA107M
2SD602	Panasonic	KTC3876S	2SD1408	Toshiba	KTD2060	2SD2129	Toshiba	KTD1413	BN1A4Z	Renesas	KRA111M
2SD633	Toshiba	KTD1415	2SD1414	Toshiba	KTD1414	2SD2156/A	Panasonic	KTD2092	BN1F4M	Renesas	KRA103M
2SD634	Toshiba	KTD1415	2SD1415	Toshiba	KTD1415	2SD2157/A	Panasonic	KTD1414	BN1F4N	Renesas	KRA108M
2SD635	Toshiba	KTD1415	2SD1436K	Renesas	KTD1510	2SD2158/A	Panasonic	KTD2092	BN1F4Z	Renesas	KRA113M
2SD667	Renesas	KTD1863	2SD1491	Renesas	KTC2814	2SD2164	Renesas	KTD2092	BN1L3M	Renesas	KRA101M
2SD667	Renesas	KTD1863	2SD1505	Rohm	KTC2026	2SD2188	Rohm	KTD2066	BN1L3N	Renesas	KRA119M
2SD669A	Renesas	KTC2800	2SD1562A	Rohm	KTC4370A	2SD2223	Sanyo	KTD1414	BN1L3Z	Renesas	KRA110M
2SD678A	Panasonic	KTD1415	2SD1582	Renesas	KTD1028	2SD2228	Renesas	KTC4076	BN1L4L	Renesas	KRA109M
2SD679A	Panasonic	KTD1415	2SD1585	Renesas	KTC2026	2SD2241	Toshiba	KTD1413	BN1L4M	Renesas	KRA104M
2SD686	Toshiba	KTD1414	2SD1586	Renesas	KTC2028	2SD2242	Panasonic	KTD1414	BN1L4Z	Renesas	KRA114M
2SD687	Toshiba	KTD2424	2SD1587	Renesas	KTD2061	2SD2257	Toshiba	KTD1413	BUV46	STM	KTC4520F
2SD691	Panasonic	KTD1415	2SD1615	Renesas	KTC4378	2SD2337	Renesas	KTD2061	BUX84	Onsemi	KTC4419
2SD718	Toshiba	KTD718	2SD1622	Sanyo	KTC4378	2SD2342	Renesas	KTD998	CPH3101	Sanyo	KTA1544T
2SD721	Sanken	KTD1415	2SD1623	Sanyo	KTC4379	2SD2343	Rohm	KTC4370A	CPH3105	Sanyo	KTA1552T
2SD722	Sanken	KTD1415	2SD1664	Rohm	KTC4375	2SD2351	Rohm	KTC4666	CPH3106	Sanyo	KTA1535T
2SD723	Renesas	KTD2060	2SD1682	Sanyo	KTC2814	2SD2389	Sanken	KTD1510	CPH3109	Sanyo	KTA1542T
2SD731	Panasonic	KTD718	2SD1691	Renesas	KTD1691	2SD2390	Sanken	KTD1510	CPH3110	Sanyo	KTA1543T
2SD734	Sanyo	KTC3208	2SD1733	Rohm	KTC2025D	2SD2566	Rohm	KTC2800	CPH3112	Sanyo	KTA1553T
2SD743/A	Renesas	KTC2028	2SD1758	Rohm	KTC3205	2SD3076	Toshiba	KTC2815D	CPH3114	Sanyo	KTA1532T
2SD759	Renesas	KTC4370A	2SD1758	Rohm	KTC2815D	2SD3518	Renesas	KTC5103L	CPH3115	Sanyo	KTA1541T
2SD760	Renesas	KTC4370A	2SD1760	Rohm	KTC2020L	BA1A3Q	Renesas	KRC116M	CPH3116	Sanyo	KTA1551T
2SD761	Sanyo	KTC4370A	2SD1760	Rohm	KTC2020D	BA1A4M	Renesas	KRC102M	CPH3201	Sanyo	KTC3544T
2SD768	Renesas	KTD1415	2SD1763A	Rohm	KTC4370A	BA1A4P	Renesas	KRC107M	CPH3205	Sanyo	KTC3552T
2SD795	Renesas	KTC2026	2SD1767	Rohm	KTC4373	BA1A4Z	Renesas	KRC111M	CPH3206	Sanyo	KTC3535T
2SD837	Panasonic	KTD1414	2SD1770	Panasonic	KTD2061	BA1E4M	Renesas	KRC103M	CPH3209	Sanyo	KTC3542T
2SD856/A	Panasonic	KTC2026	2SD1772	Panasonic	KTD2061	BA1F4N	Renesas	KRC108M	CPH3210	Sanyo	KTC3543T
2SD857/A	Panasonic	KTD2020	2SD1778	Rohm	KTD2060	BA1F4Z	Renesas	KRC113M	CPH3212	Sanyo	KTC3553T
2SD863	Sanyo	KTD863	2SD1781	Rohm	KTC3265	BA1L3M	Renesas	KRC101M	CPH3214	Sanyo	KTC3532T
2SD874	Panasonic	KTC4375	2SD1801	Sanyo	KTC2815D	BA1L3N	Renesas	KRC119M	CPH3215	Sanyo	KTC3541T
2SD874A	Panasonic	KTC4378	2SD1802	Sanyo	KTC2020D	BA1L3Z	Renesas	KRC110M	CPH3216	Sanyo	KTC3551T
2SD880	Toshiba	KTC2026	2SD1802	Sanyo	KTC2020D	BA1L4L	Renesas	KRC109M	CPH6701	Sanyo	KTS512T
2SD882	Sanyo	KTD882	2SD1802	Sanyo	KTC2020L	BA1L4M	Renesas	KRC104M	DTA113ZE	Rohm	KRA316E
2SD887	Panasonic	KTC2026	2SD1803	Sanyo	KTC5103D	BA1L4Z	Renesas	KRC114M	DTA113ZKA	Rohm	KRA116S
2SD896	Sanyo	KTD718	2SD1803	Sanyo	KTC5103D	BC115	STM	KTC1008	DTA113ZSA	Rohm	KRA116M
2SD968	Panasonic	KTC4373	2SD1803	Sanyo	KTC5103L	BC140	STM	KTC1008	DTA113ZUA	Rohm	KRA316
2SD972	Sanken	KTD1413	2SD1805	Sanyo	KTC3072D	BC211	STM	KTC1008	DTA114EE	Rohm	KRA302E
2SD999	Renesas	KTC4375	2SD1805	Sanyo	KTC3072L	BC337	STM	BC337	DTA114EK	Rohm	KRA102S
2SD1000	Renesas	KTC4378	2SD1816	Sanyo	KTC2022D	BC340	STM	KTC1008	DTA114EM	Rohm	KRA302V
2SD1001	Renesas	KTC4374	2SD1816	Sanyo	KTC2022L	BC341	STM	KTC1008	DTA114ES	Rohm	KRA102M
2SD1007	Renesas	KTC4374	2SD1819A	Panasonic	KTC4075	BC342	STM	KTC1008	DTA114EU	Rohm	KRA302
2SD1010	Panasonic	KTC3112	2SD1820	Panasonic	KTC4076	BC395	STM	KTC1008	DTA114TE	Rohm	KRA311E
2SD1029	Sanyo	KTD2060	2SD1851	Sanyo	KTD1854T	BC807	Onsemi	BC807	DTA114TK	Rohm	KRA111S
2SD1047	Sanyo	KTD1047	2SD1858	Rohm	KTD863	BC817	Onsemi	BC817	DTA114TM	Rohm	KRA311V
2SD1048	Sanyo	KTC3265	2SD1859	Rohm	KTD1863	BC846	Onsemi	BC846	DTA114TS	Rohm	KRA111M
2SD1052	Toshiba	KTC2026	2SD1863	Rohm	KTD1863	BC847	Onsemi	BC847	DTA114TU	Rohm	KRA311
2SD1060	Sanyo	KTC2028	2SD1896	Rohm	KTC2028	BC847WLT1	Onsemi	BC847W	DTA114WE	Rohm	KRA320E
2SD1110	Renesas	KTD718	2SD1897	Rohm	KTC2028	BC848	Onsemi	BC848	DTA114WKA	Rohm	KRA120S
2SD1131	Renesas	KTD2060	2SD1898	Rohm	KTD1898	BC850	Onsemi	BC850	DTA114WSA	Rohm	KRA120M
2SD1132	Renesas	KTD2060	2SD1898	Rohm	KTD1898	BC856	Onsemi	BC856	DTA114WUA	Rohm	KRA320
2SD1133	Renesas	KTD2060	2SD1899	Renesas	KTC2020L	BC857	Onsemi	BC857	DTA114YE	Rohm	KRA307E
2SD1134	Renesas	KTD2060	2SD1899-Z	Renesas	KTC2020D	BC857WLT1	Onsemi	BC857W	DTA114YK	Rohm	KRA107S
2SD1135	Renesas	KTD2060	2SD1913	Sanyo	KTC2026	BC860	Onsemi	BC860	DTA114YM	Rohm	KRA307V
2SD1136	Renesas	KTD2060	2SD1918	Rohm	KTC2983D	BCW60A/B/D	Onsemi	KTC3875S	DTA114YS	Rohm	KRA107M
2SD1138	Renesas	KTD2061	2SD1932	Rohm	KTD1414	BCW61A/B/D	Onsemi	KTA1504S	DTA114YU	Rohm	KRA307
2SD1177	Renesas	KTC2814	2SD1933	Rohm	KTD1414	BCW68	Onsemi	BCW68	DTA115EE	Rohm	KRA322E
2SD1190	Sanyo	KTD1414	2SD1944	Rohm	KTD2092	BCX52	Onsemi	KTA1666	DTA115EKA	Rohm	KRA122S
2SD1195	Sanyo	KTD1413	2SD1972	Panasonic	KTC2026	BCX70G/H/J/K	Onsemi	KTC3875S	DTA115ESA	Rohm	KRA122M
2SD1197	Sanyo	KTD1510	2SD1977	Renesas	KTD718	BCX71G/H/J/K	Onsemi	KTA1504S	DTA115EUA	Rohm	KRA322
2SD1207	Sanyo	KTC3209	2SD1980	Rohm	MJD112	BD239/A	Onsemi	KTC2026	DTA115TE	Rohm	KRA312E
2SD1207S	Sanyo	KTC3209	2SD1990	Panasonic	KTD2060	BD239B	Onsemi	KTD2060	DTA115TH	Rohm	KRA312E
2SD1218	Panasonic	KTD1414	2SD2004	Rohm	KTC2800	BD239C	Onsemi	KTC2028	DTA115TK	Rohm	KRA112S

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
DTA115TM	Rohm	KRA312V	DTB143EK	Rohm	KRA223S	DTC143ZK	Rohm	KRC106S	EMZ1	Rohm	KTX101E
DTA115TS	Rohm	KRA112M	DTB143ES	Rohm	KRA223M	DTC143ZM	Rohm	KRC406V	FA1A3Q	Renesas	KRC116S
DTA115TU	Rohm	KRA312	DTC113ZE	Rohm	KRC416E	DTC143ZS	Rohm	KRC106M	FA1A4M	Renesas	KRC102S
DTA123EE	Rohm	KRA317E	DTC113ZKA	Rohm	KRC116S	DTC143ZU	Rohm	KRC406	FA1A4P	Renesas	KRC107S
DTA123EKA	Rohm	KRA117S	DTC113ZSA	Rohm	KRC116M	DTC144EE	Rohm	KRC404E	FA1A4Z	Renesas	KRC111S
DTA123EM	Rohm	KRA317V	DTC113ZUA	Rohm	KRC416	DTC144EK	Rohm	KRC104S	FA1F4M	Renesas	KRC103S
DTA123ESA	Rohm	KRA117M	DTC114EE	Rohm	KRC402E	DTC144EM	Rohm	KRC404V	FA1F4N	Renesas	KRC108S
DTA123EUA	Rohm	KRA317	DTC114EK	Rohm	KRC102S	DTC144ES	Rohm	KRC104M	FA1F4Z	Renesas	KRC113S
DTA123JE	Rohm	KRA305E	DTC114EM	Rohm	KRC402V	DTC144EU	Rohm	KRC404	FA1L3M	Renesas	KRC101S
DTA123JK	Rohm	KRA105S	DTC114ES	Rohm	KRC102M	DTC144TE	Rohm	KRC414E	FA1L3N	Renesas	KRC119S
DTA123JM	Rohm	KRA305V	DTC114EU	Rohm	KRC402	DTC144TK	Rohm	KRC114S	FA1L3Z	Renesas	KRC110S
DTA123JS	Rohm	KRA105M	DTC114TE	Rohm	KRC411E	DTC144TM	Rohm	KRC414V	FA1L4L	Renesas	KRC109S
DTA123JU	Rohm	KRA305	DTC114TK	Rohm	KRC111S	DTC144TS	Rohm	KRC114M	FA1L4M	Renesas	KRC104S
DTA123YE	Rohm	KRA318E	DTC114TM	Rohm	KRC411V	DTC144TU	Rohm	KRC414	FA1L4Z	Renesas	KRC114S
DTA123YKA	Rohm	KRA118S	DTC114TS	Rohm	KRC111M	DTC144VKA	Rohm	KRC121S	FMMT618	Zetex	KTC3534T
DTA123YSA	Rohm	KRA118M	DTC114TU	Rohm	KRC411	DTC144VSA	Rohm	KRC121M	FMMT718	Zetex	KTA1532T
DTA123YUA	Rohm	KRA318	DTC114WE	Rohm	KRC420E	DTC144VUA	Rohm	KRC421	FN1A3Q	Renesas	KRA116S
DTA124EE	Rohm	KRA303E	DTC114WKA	Rohm	KRC120S	DTC144WE	Rohm	KRC409E	FN1A4M	Renesas	KRA102S
DTA124EK	Rohm	KRA103S	DTC114WSA	Rohm	KRC120M	DTC144WK	Rohm	KRC109S	FN1A4P	Renesas	KRA107S
DTA124EM	Rohm	KRA303V	DTC114WUA	Rohm	KRC420	DTC144WS	Rohm	KRC109M	FN1A4Z	Renesas	KRA111S
DTA124ES	Rohm	KRA103M	DTC114YE	Rohm	KRC407E	DTC144WU	Rohm	KRC409	FN1F4M	Renesas	KRA103S
DTA124EU	Rohm	KRA303	DTC114YK	Rohm	KRC107S	DTC155EM	Rohm	KRC422V	FN1F4N	Renesas	KRA108S
DTA124TE	Rohm	KRA313E	DTC114YM	Rohm	KRC407V	DTC314TK	Rohm	KRC233S	FN1F4Z	Renesas	KRA113S
DTA124TH	Rohm	KRA313E	DTC114YS	Rohm	KRC107M	DTC314TK	Rohm	KRC233M	FN1L3M	Renesas	KRA101S
DTA124TK	Rohm	KRA113S	DTC114YU	Rohm	KRC407	DTC323TK	Rohm	KRC231S	FN1L3N	Renesas	KRA119S
DTA124TM	Rohm	KRA313V	DTC115EE	Rohm	KRC422E	DTC323TS	Rohm	KRC231M	FN1L3Z	Renesas	KRA110S
DTA124TS	Rohm	KRA113M	DTC115EKA	Rohm	KRC122S	DTD113EK	Rohm	KRC241S	FN1L4L	Renesas	KRA109S
DTA124TU	Rohm	KRA313	DTC115ESA	Rohm	KRC122M	DTD113ES	Rohm	KRC241M	FN1L4M	Renesas	KRA104S
DTA124XE	Rohm	KRA308E	DTC115EUA	Rohm	KRC422	DTD113ZK	Rohm	KRC245S	FN1L4Z	Renesas	KRA114S
DTA124XK	Rohm	KRA108S	DTC115TH	Rohm	KRC412E	DTD113ZS	Rohm	KRC245M	GA1A3Q	Renesas	KRC416
DTA124XM	Rohm	KRA308V	DTC115TK	Rohm	KRC112S	DTD114EK	Rohm	KRC244S	GA1A4M	Renesas	KRC402
DTA124XS	Rohm	KRA108M	DTC115TM	Rohm	KRC412V	DTD114ES	Rohm	KRC244M	GA1A4P	Renesas	KRC407
DTA124XU	Rohm	KRA308	DTC115TS	Rohm	KRC112M	DTD123EK	Rohm	KRC242S	GA1A4Z	Renesas	KRC411
DTA143EE	Rohm	KRA301E	DTC115TU	Rohm	KRC412	DTD123ES	Rohm	KRC242M	GA1F4M	Renesas	KRC403
DTA143EK	Rohm	KRA101S	DTC123EE	Rohm	KRC417E	DTD123YK	Rohm	KRC246S	GA1F4N	Renesas	KRC408
DTA143EM	Rohm	KRA301V	DTC123EKA	Rohm	KRC117S	DTD123YS	Rohm	KRC246M	GA1F4Z	Renesas	KRC413
DTA143ES	Rohm	KRA101M	DTC123EM	Rohm	KRC417V	DTD143EK	Rohm	KRC243S	GA1L3M	Renesas	KRC401
DTA143EU	Rohm	KRA301	DTC123ESA	Rohm	KRC117M	DTD143ES	Rohm	KRC243M	GA1L3N	Renesas	KRC419
DTA143TE	Rohm	KRA310E	DTC123EUA	Rohm	KRC417	EMA2	Rohm	KRA554E	GA1L3Z	Renesas	KRC410
DTA143TK	Rohm	KRA110S	DTC123JE	Rohm	KRC405E	EMA3	Rohm	KRA560E	GA1L4L	Renesas	KRC409
DTA143TM	Rohm	KRA310V	DTC123JK	Rohm	KRC105S	EMA4	Rohm	KRA561E	GA1L4M	Renesas	KRC404
DTA143TS	Rohm	KRA110M	DTC123JM	Rohm	KRC405V	EMA5	Rohm	KRA555E	GA1L4Z	Renesas	KRC414
DTA143XE	Rohm	KRA319E	DTC123JS	Rohm	KRC105M	EMA6	Rohm	KRA564E	GN1A3Q	Renesas	KRA316
DTA143XKA	Rohm	KRA119S	DTC123JU	Rohm	KRC405	EMA7	Rohm	KRA569E	GN1A4M	Renesas	KRA302
DTA143XM	Rohm	KRA319V	DTC123YE	Rohm	KRC418E	EMA8	Rohm	KRA557E	GN1A4P	Renesas	KRA307
DTA143XSA	Rohm	KRA119M	DTC123YKA	Rohm	KRC118S	EMA11	Rohm	KRA556E	GN1A4Z	Renesas	KRA311
DTA143XUA	Rohm	KRA319	DTC123YSA	Rohm	KRC118M	EMB2	Rohm	KRA754E	GN1F4M	Renesas	KRA303
DTA143ZE	Rohm	KRA306E	DTC123YUA	Rohm	KRC418	EMB3	Rohm	KRA760E	GN1F4N	Renesas	KRA308
DTA143ZK	Rohm	KRA106S	DTC124EE	Rohm	KRC403E	EMB4	Rohm	KRA761E	GN1F4Z	Renesas	KRA313
DTA143ZM	Rohm	KRA306V	DTC124EK	Rohm	KRC103S	EMB6	Rohm	KRA724E	GN1L3M	Renesas	KRA301
DTA143ZS	Rohm	KRA106M	DTC124EM	Rohm	KRC403V	EMB9	Rohm	KRA757E	GN1L3N	Renesas	KRA319
DTA143ZU	Rohm	KRA306	DTC124ES	Rohm	KRC103M	EMB10	Rohm	KRA755E	GN1L3Z	Renesas	KRA310
DTA144EE	Rohm	KRA304E	DTC124EU	Rohm	KRC403	EMB11	Rohm	KRA752E	GN1L4L	Renesas	KRA309
DTA144EK	Rohm	KRA104S	DTC124TE	Rohm	KRC413E	EMD2	Rohm	KRX202E	GN1L4M	Renesas	KRA304
DTA144EM	Rohm	KRA304V	DTC124TH	Rohm	KRC413E	EMD3	Rohm	KRX201E	GN1L4Z	Renesas	KRA314
DTA144ES	Rohm	KRA104M	DTC124TK	Rohm	KRC113S	EMD12	Rohm	KRX203E	HN1A01FE	Toshiba	KTA701E
DTA144EU	Rohm	KRA304	DTC124TM	Rohm	KRC413V	EMG1	Rohm	KRC653E	HN1A01FU	Toshiba	KTA701U
DTA144TE	Rohm	KRA314E	DTC124TS	Rohm	KRC113M	EMG2	Rohm	KRC654E	HN1B04FE	Toshiba	KTX101E
DTA144TK	Rohm	KRA114S	DTC124TU	Rohm	KRC413	EMG3	Rohm	KRC660E	HN1B04FU	Toshiba	KTX101U
DTA144TM	Rohm	KRA314V	DTC124XE	Rohm	KRC408E	EMG4	Rohm	KRC661E	HN1C01FE	Toshiba	KTC801E
DTA144TS	Rohm	KRA114M	DTC124XK	Rohm	KRC108S	EMG5	Rohm	KRC657E	HN1C01FU	Toshiba	KTC801U
DTA144TU	Rohm	KRA314	DTC124XM	Rohm	KRC408V	EMG6	Rohm	KRC664E	HN1C03F	Toshiba	KTC812T
DTA144VKA	Rohm	KRA121S	DTC124XS	Rohm	KRC108M	EMG8	Rohm	KRC656E	HN2A01FU	Toshiba	KTA711U
DTA144VSA	Rohm	KRA121M	DTC124XU	Rohm	KRC408	EMG9	Rohm	KRC652E	HN2C01FE	Toshiba	KTC811E
DTA144VUA	Rohm	KRA321	DTC143EE	Rohm	KRC401E	EMG11	Rohm	KRC655E	HN2C01FU	Toshiba	KTC811U
DTA144WE	Rohm	KRA309E	DTC143EK	Rohm	KRC101S	EMH1	Rohm	KRC853E	IMX9	Rohm	KTC812T
DTA144WK	Rohm	KRA109S	DTC143EM	Rohm	KRC401V	EMH2	Rohm	KRC854E	IMZ4	Rohm	KTX111T
DTA144WS	Rohm	KRA109M	DTC143ES	Rohm	KRC101M	EMH3	Rohm	KRC860E	MJD112	Onsemi	MJD112
DTA144WU	Rohm	KRA309	DTC143EU	Rohm	KRC401	EMH4	Rohm	KRC861E	MJD112-1	Onsemi	MJD112L
DTA155EM	Rohm	KRA322V	DTC143TE	Rohm	KRC410E	EMH6	Rohm	KRC824E	MJD117	Onsemi	MJD117
DTB113EK	Rohm	KRA221S	DTC143TK	Rohm	KRC110S	EMH9	Rohm	KRC857E	MJD117-1	Onsemi	MJD117L
DTB113ES	Rohm	KRA221M	DTC143TM	Rohm	KRC410V	EMH10	Rohm	KRC855E	MJD41C-1	Onsemi	KTC2022L
DTB113ZK	Rohm	KRA225S	DTC143TS	Rohm	KRC110M	EMH11	Rohm	KRC852E	MJE122	Onsemi	KTD1413
DTB113ZS	Rohm	KRA225M	DTC143TU	Rohm	KRC410	EMT1	Rohm	KTA701E	MJE127	Onsemi	KTB1423
DTB114EK	Rohm	KRA224S	DTC143XE	Rohm	KRC419E	EMT18	Rohm	KTA702E	MJE800T	Onsemi	KTD1414
DTB114ES	Rohm	KRA224M	DTC143XKA	Rohm	KRC119S	EMX1	Rohm	KTC801E	MJE6107	Onsemi	KTB1368
DTB123EK	Rohm	KRA222S	DTC143XM	Rohm	KRC419V	EMX2	Rohm	KTC811E	MJE13003	Mospec	MJE13003
DTB123ES	Rohm	KRA222M	DTC143XSA	Rohm	KRC119M	EMX3	Rohm	KTC812E	MJE13003	Onsemi	MJE13003
DTB123YK	Rohm	KRA226S	DTC143XUA	Rohm	KRC419	EMX18	Rohm	KTC802E	MJE13003	STM	MJE13003
DTB123YS	Rohm	KRA226M	DTC143ZE	Rohm	KRC406E	EMY1	Rohm	KTX201E	MJE13004	Onsemi	KTC4419

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
MJE13005	Mospec	MJE13005F	PDTC124EK	NXP	KRC103S	RN1301	Toshiba	KRC401	RN1907FE	Toshiba	KRC857E
MJE13005	Onsemi	MJE13005F	PDTC124ES	NXP	KRC103M	RN1302	Toshiba	KRC402	RN1908	Toshiba	KRC858U
MJE13005	STM	MJE13005F	PDTC124EU	NXP	KRC403	RN1303	Toshiba	KRC403	RN1908FE	Toshiba	KRC858E
MJE13007	Onsemi	MJE13007F	PDTC143EK	NXP	KRC101S	RN1304	Toshiba	KRC404	RN1909	Toshiba	KRC859U
MJE16002	Onsemi	KTC4419	PDTC143ES	NXP	KRC101M	RN1305	Toshiba	KRC405	RN1909FE	Toshiba	KRC859E
MJE16004	Onsemi	KTC4419	PDTC143EU	NXP	KRC401	RN1306	Toshiba	KRC406	RN1910	Toshiba	KRC860U
MMBA811C5	Onsemi	KTA1504S	PDTC144EK	NXP	KRC104S	RN1307	Toshiba	KRC407	RN1910FE	Toshiba	KRC860E
MMBA811C6	Onsemi	KTA1504S	PDTC144ES	NXP	KRC104M	RN1308	Toshiba	KRC408	RN1911	Toshiba	KRC861U
MMBA811C7	Onsemi	KTA1504S	PDTC144EU	NXP	KRC404	RN1309	Toshiba	KRC409	RN1911FE	Toshiba	KRC861E
MMBA811C8	Onsemi	KTA1504S	PDTD114EK	NXP	KRC244S	RN1310	Toshiba	KRC410	RN1961	Toshiba	KRC821U
MMBA812M5	Onsemi	KTA1504S	PDTD114ES	NXP	KRC244M	RN1311	Toshiba	KRC411	RN1961FE	Toshiba	KRC821E
MMBA812M6	Onsemi	KTA1504S	RN1101	Toshiba	KRC401E	RN1312	Toshiba	KRC413	RN1962	Toshiba	KRC822U
MMBA812M7	Onsemi	KTA1504S	RN1101F	Toshiba	KRC401E	RN1313	Toshiba	KRC414	RN1962FE	Toshiba	KRC822E
MMBC1009F1	Onsemi	KTC3875S	RN1101FT	Toshiba	KRC401V	RN1314	Toshiba	KRC416	RN1963	Toshiba	KRC823U
MMBC1009F2	Onsemi	KTC3875S	RN1102	Toshiba	KRC402E	RN1315	Toshiba	KRC418	RN1963FE	Toshiba	KRC823E
MMBC1009F3	Onsemi	KTC3875S	RN1102F	Toshiba	KRC402E	RN1316	Toshiba	KRC419	RN1964	Toshiba	KRC824U
MMBC1009F4	Onsemi	KTC3875S	RN1102FT	Toshiba	KRC402V	RN1317	Toshiba	KRC420	RN1964FE	Toshiba	KRC824E
MMBC1009F5	Onsemi	KTC3875S	RN1103	Toshiba	KRC403E	RN1318	Toshiba	KRC421	RN1965	Toshiba	KRC825U
MMBC1321Q2	Onsemi	KTC3882	RN1103F	Toshiba	KRC403E	RN1401	Toshiba	KRC101S	RN1965FE	Toshiba	KRC825E
MMBC1321Q3	Onsemi	KTC3882	RN1103FT	Toshiba	KRC403V	RN1402	Toshiba	KRC102S	RN1966	Toshiba	KRC826U
MMBC1321Q4	Onsemi	KTC3882	RN1104	Toshiba	KRC404E	RN1403	Toshiba	KRC103S	RN1966FE	Toshiba	KRC826E
MMBC1321Q5	Onsemi	KTC3882	RN1104F	Toshiba	KRC404E	RN1404	Toshiba	KRC104S	RN1967	Toshiba	KRC827U
MMBC1622D6	Onsemi	KTC3875S	RN1104FT	Toshiba	KRC404V	RN1405	Toshiba	KRC105S	RN1967FE	Toshiba	KRC827E
MMBC1622D7	Onsemi	KTC3875S	RN1105	Toshiba	KRC405E	RN1406	Toshiba	KRC106S	RN1968	Toshiba	KRC828U
MMBC1622D8	Onsemi	KTC3875S	RN1105F	Toshiba	KRC405E	RN1407	Toshiba	KRC107S	RN1968FE	Toshiba	KRC828E
MMBC1623L3	Onsemi	KTC3875S	RN1105FT	Toshiba	KRC405V	RN1408	Toshiba	KRC108S	RN1969	Toshiba	KRC829U
MMBC1623L4	Onsemi	KTC3875S	RN1106	Toshiba	KRC406E	RN1409	Toshiba	KRC109S	RN1969FE	Toshiba	KRC829E
MMBC1623L5	Onsemi	KTC3875S	RN1106F	Toshiba	KRC406E	RN1410	Toshiba	KRC110S	RN1970	Toshiba	KRC830U
MMBC1623L6	Onsemi	KTC3875S	RN1106FT	Toshiba	KRC406V	RN1411	Toshiba	KRC111S	RN1970FE	Toshiba	KRC830E
MMBC1623L7	Onsemi	KTC3875S	RN1107	Toshiba	KRC407E	RN1412	Toshiba	KRC113S	RN1971	Toshiba	KRC831U
MMBT2222/A	Onsemi	KTN2222S/AS	RN1107F	Toshiba	KRC407E	RN1413	Toshiba	KRC114S	RN1971FE	Toshiba	KRC831E
MMBT2907A	Onsemi	KTN2907AS	RN1107FT	Toshiba	KRC407V	RN1414	Toshiba	KRC116S	RN1973	Toshiba	KRC834U
MMBT2907AW1	Onsemi	KTN2907AU	RN1108	Toshiba	KRC408E	RN1415	Toshiba	KRC118S	RN2101	Toshiba	KRA301E
MMBT3904	Onsemi	2N3904S	RN1108F	Toshiba	KRC408E	RN1416	Toshiba	KRC119S	RN2101F	Toshiba	KRA301E
MMBT3906	Onsemi	2N3906S	RN1108FT	Toshiba	KRC408V	RN1417	Toshiba	KRC120S	RN2101FT	Toshiba	KRA301V
MMBT4124	Onsemi	KTC3876S	RN1109	Toshiba	KRC409E	RN1418	Toshiba	KRC121S	RN2102	Toshiba	KRA302E
MMBT4126	Onsemi	KTA1505S	RN1109F	Toshiba	KRC409E	RN1421	Toshiba	KRC241S	RN2102F	Toshiba	KRA302E
MMBT4401	Onsemi	KTN2222AS	RN1109FT	Toshiba	KRC409V	RN1422	Toshiba	KRC242S	RN2102FT	Toshiba	KRA302V
MMBT4403	Onsemi	KTN2907AS	RN1110	Toshiba	KRC410E	RN1423	Toshiba	KRC243S	RN2103	Toshiba	KRA303E
MMBT5087	Onsemi	KTA1504S	RN1110F	Toshiba	KRC410E	RN1424	Toshiba	KRC244S	RN2103F	Toshiba	KRA303E
MMBT5088	Onsemi	KTC3875S	RN1110FT	Toshiba	KRC410V	RN1426	Toshiba	KRC245S	RN2103FT	Toshiba	KRA303V
MMBT5089	Onsemi	KTC3295	RN1111	Toshiba	KRC411E	RN1427	Toshiba	KRC246S	RN2104	Toshiba	KRA304E
MMBTA13	Onsemi	MMBTA517	RN1111F	Toshiba	KRC411E	RN1441	Toshiba	KRC232S	RN2104F	Toshiba	KRA304E
MMBTA14	Onsemi	MMBTA517	RN1111FT	Toshiba	KRC411V	RN1442	Toshiba	KRC233S	RN2104FT	Toshiba	KRA304V
MMBTA20	Onsemi	KTN2222AS	RN1112	Toshiba	KRC413E	RN1444	Toshiba	KRC231S	RN2105	Toshiba	KRA305E
MMBTA42	Onsemi	MMBTA42	RN1112F	Toshiba	KRC413E	RN1544	Toshiba	KRC681T	RN2105F	Toshiba	KRA305E
MMBTA55	Onsemi	MMBTA92	RN1112FT	Toshiba	KRC413V	RN1701	Toshiba	KRC651U	RN2105FT	Toshiba	KRA305V
MMBTA56	Onsemi	MMBTA92	RN1113	Toshiba	KRC414E	RN1702	Toshiba	KRC652U	RN2106	Toshiba	KRA306E
MMBTA63	Onsemi	MMBTA63	RN1113F	Toshiba	KRC414E	RN1702JE	Toshiba	KRC651E	RN2106F	Toshiba	KRA306E
MMBTA92	Onsemi	MMBTA92	RN1113FT	Toshiba	KRC414V	RN1703	Toshiba	KRC653U	RN2106FT	Toshiba	KRA306V
MPS2222A	Onsemi	KTN2222A	RN1114	Toshiba	KRC416E	RN1703JE	Toshiba	KRC652E	RN2107	Toshiba	KRA307E
MPS2907A	Onsemi	KTN2907A	RN1114FT	Toshiba	KRC416V	RN1704	Toshiba	KRC654U	RN2107F	Toshiba	KRA307E
MPSA12	Onsemi	BC517	RN1115	Toshiba	KRC418E	RN1704JE	Toshiba	KRC653E	RN2107FT	Toshiba	KRA307V
MPSA20	Onsemi	2N3904	RN1115FT	Toshiba	KRC418V	RN1705	Toshiba	KRC655U	RN2108	Toshiba	KRA308E
MPSA42	Onsemi	MPSA42	RN1116	Toshiba	KRC419E	RN1705JE	Toshiba	KRC654E	RN2108F	Toshiba	KRA308E
MPSA44	Onsemi	MPSA44	RN1116FT	Toshiba	KRC419V	RN1706	Toshiba	KRC656U	RN2108FT	Toshiba	KRA308V
MPS-U01/A	Onsemi	KTD1351	RN1117	Toshiba	KRC420E	RN1706JE	Toshiba	KRC655E	RN2109	Toshiba	KRA309E
PDTA114EK	NXP	KRA102S	RN1117FT	Toshiba	KRC420V	RN1707	Toshiba	KRC657U	RN2109F	Toshiba	KRA309E
PDTA114ES	NXP	KRA102M	RN1118	Toshiba	KRC421E	RN1707JE	Toshiba	KRC656E	RN2109FT	Toshiba	KRA309V
PDTA114EU	NXP	KRA302	RN1118FT	Toshiba	KRC421V	RN1708	Toshiba	KRC658U	RN2110	Toshiba	KRA310E
PDTA114TK	NXP	KRA111S	RN1201	Toshiba	KRC101M	RN1708JE	Toshiba	KRC657E	RN2110F	Toshiba	KRA310E
PDTA114TS	NXP	KRA111M	RN1202	Toshiba	KRC102M	RN1709	Toshiba	KRC659U	RN2110FT	Toshiba	KRA310V
PDTA114TU	NXP	KRA311	RN1203	Toshiba	KRC103M	RN1709JE	Toshiba	KRC658E	RN2111	Toshiba	KRA311E
PDTA124EK	NXP	KRA103S	RN1204	Toshiba	KRC104M	RN1710	Toshiba	KRC660U	RN2111F	Toshiba	KRA311E
PDTA124ES	NXP	KRA103M	RN1205	Toshiba	KRC105M	RN1710JE	Toshiba	KRC659E	RN2111FT	Toshiba	KRA311V
PDTA124EU	NXP	KRA303	RN1206	Toshiba	KRC106M	RN1711	Toshiba	KRC661U	RN2112	Toshiba	KRA313E
PDTA143EK	NXP	KRA101S	RN1207	Toshiba	KRC107M	RN1711JE	Toshiba	KRC660E	RN2112F	Toshiba	KRA313E
PDTA143ES	NXP	KRA101M	RN1208	Toshiba	KRC108M	RN1901	Toshiba	KRC851U	RN2112FT	Toshiba	KRA313V
PDTA143EU	NXP	KRA301	RN1209	Toshiba	KRC109M	RN1901FE	Toshiba	KRC851E	RN2113	Toshiba	KRA314E
PDTA144EK	NXP	KRA104S	RN1210	Toshiba	KRC101M	RN1902	Toshiba	KRC852U	RN2113F	Toshiba	KRA314E
PDTA144ES	NXP	KRA104M	RN1211	Toshiba	KRC111M	RN1902FE	Toshiba	KRC852E	RN2113FT	Toshiba	KRA314V
PDTA144EU	NXP	KRA304	RN1221	Toshiba	KRC241M	RN1903	Toshiba	KRC853U	RN2114	Toshiba	KRA316E
PDTB114EK	NXP	KRA224S	RN1222	Toshiba	KRC242M	RN1903FE	Toshiba	KRC853E	RN2114FT	Toshiba	KRA316V
PDTB114ES	NXP	KRA224M	RN1223	Toshiba	KRC243M	RN1904	Toshiba	KRC854U	RN2115	Toshiba	KRA318E
PDTC114EK	NXP	KRC102S	RN1224	Toshiba	KRC244M	RN1904FE	Toshiba	KRC854E	RN2115FT	Toshiba	KRA318V
PDTC114ES	NXP	KRC102M	RN1226	Toshiba	KRC245M	RN1905	Toshiba	KRC855U	RN2116	Toshiba	KRA319E
PDTC114EU	NXP	KRC402	RN1227	Toshiba	KRC246M	RN1905FE	Toshiba	KRC855E	RN2116FT	Toshiba	KRA319V
PDTC114TK	NXP	KRC111S	RN1241	Toshiba	KRC232M	RN1906	Toshiba	KRC856U	RN2117	Toshiba	KRA320E
PDTC114TS	NXP	KRC111M	RN1242	Toshiba	KRC233M	RN1906FE	Toshiba	KRC856E	RN2117FT	Toshiba	KRA320V
PDTC114TU	NXP	KRC411	RN1244	Toshiba	KRC231M	RN1907	Toshiba	KRC857U	RN2118	Toshiba	KRA321E

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
RN2118FT	Toshiba	KRA321V	RN2711	Toshiba	KRA561U	TIP31C	Onsemi	TIP31CF	UN221F	Panasonic	KRC119S
RN2201	Toshiba	KRA101M	RN2711JE	Toshiba	KRA561E	TIP31C	STM	TIP31CF	UN221H	Panasonic	KRC118S
RN2202	Toshiba	KRA102M	RN2901	Toshiba	KRA751U	TIP32C	Mospec	TIP32CF	UN221L	Panasonic	KRC101S
RN2203	Toshiba	KRA103M	RN2901FE	Toshiba	KRA751E	TIP32C	Onsemi	TIP32CF	UN221M	Panasonic	KRC105S
RN2204	Toshiba	KRA104M	RN2902	Toshiba	KRA752U	TIP32C	STM	TIP32CF	UN221N	Panasonic	KRC106S
RN2205	Toshiba	KRA105M	RN2902FE	Toshiba	KRA752E	TIP35C	Mospec	TIP35C	UN411E	Panasonic	KRA109M
RN2206	Toshiba	KRA106M	RN2903	Toshiba	KRA753U	TIP35C	Onsemi	TIP35C	UN411L	Panasonic	KRA101M
RN2207	Toshiba	KRA107M	RN2903FE	Toshiba	KRA753E	TIP35C	STM	TIP35C	UN421E	Panasonic	KRC109M
RN2208	Toshiba	KRA108M	RN2904	Toshiba	KRA754U	TIP36C	Mospec	TIP36C	UN421F	Panasonic	KRC119M
RN2209	Toshiba	KRA109M	RN2904FE	Toshiba	KRA754E	TIP36C	Onsemi	TIP36C	UN421H	Panasonic	KRC118M
RN2210	Toshiba	KRA110M	RN2905	Toshiba	KRA755U	TIP36C	STM	TIP36C	UN421L	Panasonic	KRC101M
RN2211	Toshiba	KRA111M	RN2905FE	Toshiba	KRA755E	TIP41C	Mospec	TIP41CF	UN421M	Panasonic	KRC105M
RN2221	Toshiba	KRA221M	RN2906	Toshiba	KRA756U	TIP41C	Onsemi	TIP41CF	UN421N	Panasonic	KRC106M
RN2222	Toshiba	KRA222M	RN2906FE	Toshiba	KRA756E	TIP41C	STM	TIP41CF	UN511E	Panasonic	KRA309
RN2223	Toshiba	KRA223M	RN2907	Toshiba	KRA757U	TIP42C	Mospec	TIP42CF	UN511F	Panasonic	KRA319
RN2224	Toshiba	KRA224M	RN2907FE	Toshiba	KRA757E	TIP42C	Onsemi	TIP42CF	UN511H	Panasonic	KRA318
RN2226	Toshiba	KRA225M	RN2908	Toshiba	KRA758U	TIP42C	STM	TIP42CF	UN511L	Panasonic	KRA301
RN2227	Toshiba	KRA226M	RN2908FE	Toshiba	KRA758E	TIP122	Onsemi	KTD1413	UN511M	Panasonic	KRA305
RN2301	Toshiba	KRA301	RN2909	Toshiba	KRA759U	TIP127	Onsemi	KTB1423	UN511N	Panasonic	KRA306
RN2302	Toshiba	KRA302	RN2909FE	Toshiba	KRA759E	UMA1N	Rohm	KRA553U	UN511T	Panasonic	KRA308
RN2303	Toshiba	KRA303	RN2910	Toshiba	KRA760U	UMA2N	Rohm	KRA554U	UN521E	Panasonic	KRC409
RN2304	Toshiba	KRA304	RN2910FE	Toshiba	KRA760E	UMA3N	Rohm	KRA560U	UN521F	Panasonic	KRC419
RN2305	Toshiba	KRA305	RN2911	Toshiba	KRA761U	UMA4N	Rohm	KRA561U	UN521H	Panasonic	KRC418
RN2306	Toshiba	KRA306	RN2911FE	Toshiba	KRA761E	UMA5N	Rohm	KRA555U	UN521L	Panasonic	KRC401
RN2307	Toshiba	KRA307	RN2961	Toshiba	KRA721U	UMA6N	Rohm	KRA564U	UN521M	Panasonic	KRC405
RN2308	Toshiba	KRA308	RN2961FE	Toshiba	KRA721E	UMA7N	Rohm	KRA569U	UN521N	Panasonic	KRC406
RN2309	Toshiba	KRA309	RN2962	Toshiba	KRA722U	UMA8N	Rohm	KRA557U	UN521T	Panasonic	KRC408
RN2310	Toshiba	KRA310	RN2962FE	Toshiba	KRA722E	UMA9N	Rohm	KRA552U	UN2110	Panasonic	KRA114S
RN2311	Toshiba	KRA311	RN2963	Toshiba	KRA723U	UMA10N	Rohm	KRA566U	UN2111	Panasonic	KRA102S
RN2312	Toshiba	KRA313	RN2963FE	Toshiba	KRA723E	UMA11N	Rohm	KRA556U	UN2112	Panasonic	KRA103S
RN2313	Toshiba	KRA314	RN2964	Toshiba	KRA724U	UMB1N	Rohm	KRA753U	UN2113	Panasonic	KRA104S
RN2314	Toshiba	KRA316	RN2964FE	Toshiba	KRA724E	UMB2N	Rohm	KRA754U	UN2114	Panasonic	KRA107S
RN2315	Toshiba	KRA318	RN2965	Toshiba	KRA725U	UMB3N	Rohm	KRA760U	UN2115	Panasonic	KRA111S
RN2316	Toshiba	KRA319	RN2965FE	Toshiba	KRA725E	UMB4N	Rohm	KRA761U	UN2116	Panasonic	KRA110S
RN2317	Toshiba	KRA320	RN2966	Toshiba	KRA726U	UMB6N	Rohm	KRA724U	UN2117	Panasonic	KRA113S
RN2318	Toshiba	KRA321	RN2966FE	Toshiba	KRA726E	UMB8N	Rohm	KRA731U	UN2121	Panasonic	KRA222S
RN2401	Toshiba	KRA101S	RN2967	Toshiba	KRA727U	UMB9N	Rohm	KRA757U	UN2122	Panasonic	KRA223S
RN2402	Toshiba	KRA102S	RN2967FE	Toshiba	KRA727E	UMB10N	Rohm	KRA755U	UN2123	Panasonic	KRA224S
RN2403	Toshiba	KRA103S	RN2968	Toshiba	KRA728U	UMB11N	Rohm	KRA752U	UN2124	Panasonic	KRA226S
RN2404	Toshiba	KRA104S	RN2968FE	Toshiba	KRA728E	UMC2N	Rohm	KRX103U	UN2210	Panasonic	KRC114S
RN2405	Toshiba	KRA105S	RN2969	Toshiba	KRA729U	UMC3N	Rohm	KRX101U	UN2211	Panasonic	KRC102S
RN2406	Toshiba	KRA106S	RN2969FE	Toshiba	KRA729E	UMC4N	Rohm	KRX102U	UN2212	Panasonic	KRC103S
RN2407	Toshiba	KRA107S	RN2970	Toshiba	KRA730U	UMG1N	Rohm	KRC653U	UN2213	Panasonic	KRC104S
RN2408	Toshiba	KRA108S	RN2970FE	Toshiba	KRA730E	UMG2N	Rohm	KRC654U	UN2214	Panasonic	KRC107S
RN2409	Toshiba	KRA109S	RN2971	Toshiba	KRA731U	UMG3N	Rohm	KRC660U	UN2215	Panasonic	KRC111S
RN2410	Toshiba	KRA110S	RN2971FE	Toshiba	KRA731E	UMG4N	Rohm	KRC661U	UN2216	Panasonic	KRC110S
RN2411	Toshiba	KRA111S	RN47A2JE	Toshiba	KRX103E	UMG5N	Rohm	KRC657U	UN2217	Panasonic	KRC113S
RN2412	Toshiba	KRA113S	RN47A3JE	Toshiba	KRX101E	UMG6N	Rohm	KRC664U	UN2221	Panasonic	KRC242S
RN2413	Toshiba	KRA114S	RN47A4JE	Toshiba	KRX102E	UMG8N	Rohm	KRC669U	UN2222	Panasonic	KRC243S
RN2414	Toshiba	KRA116S	RN47A5JE	Toshiba	KRX104E	UMG9N	Rohm	KRC652U	UN2223	Panasonic	KRC244S
RN2415	Toshiba	KRA118S	RN4982FE	Toshiba	KRX201E	UMG10N	Rohm	KRC666U	UN2224	Panasonic	KRC246S
RN2416	Toshiba	KRA119S	RN4983FE	Toshiba	KRX202E	UMH11N	Rohm	KRC655U	UN4110	Panasonic	KRA114M
RN2417	Toshiba	KRA120S	RN4984FE	Toshiba	KRX203E	UMH1N	Rohm	KRC853U	UN4111	Panasonic	KRA102M
RN2418	Toshiba	KRA121S	RN4985FE	Toshiba	KRX204E	UMH2N	Rohm	KRC854U	UN4112	Panasonic	KRA103M
RN2421	Toshiba	KRA221S	RT1N140C	Renesas	KRC111S	UMH3N	Rohm	KRC860U	UN4113	Panasonic	KRA104M
RN2422	Toshiba	KRA222S	RT1N140S	Renesas	KRC111M	UMH4N	Rohm	KRC861U	UN4114	Panasonic	KRA107M
RN2423	Toshiba	KRA223S	RT1N141C	Renesas	KRC102S	UMH5N	Rohm	KRC823U	UN4115	Panasonic	KRA111M
RN2424	Toshiba	KRA224S	RT1N141S	Renesas	KRC102M	UMH6N	Rohm	KRC824U	UN4116	Panasonic	KRA110M
RN2426	Toshiba	KRA225S	RT1N144C	Renesas	KRC107S	UMH7N	Rohm	KRC830U	UN4117	Panasonic	KRA113M
RN2427	Toshiba	KRA226S	RT1N144S	Renesas	KRC107M	UMH8N	Rohm	KRC831U	UN4117	Panasonic	KRA113M
RN2701	Toshiba	KRA551U	RT1N241C	Renesas	KRC103S	UMH9N	Rohm	KRC857U	UN4121	Panasonic	KRA222M
RN2701JE	Toshiba	KRA551E	RT1N241S	Renesas	KRC103M	UMH10N	Rohm	KRC855U	UN4122	Panasonic	KRA223M
RN2702	Toshiba	KRA552U	RT1N430C	Renesas	KRC110S	UMH11N	Rohm	KRC852U	UN4123	Panasonic	KRA224M
RN2702JE	Toshiba	KRA552E	RT1N430S	Renesas	KRC110M	UMH14N	Rohm	KRC834U	UN4124	Panasonic	KRA226M
RN2703	Toshiba	KRA553U	RT1N441C	Renesas	KRC104S	UMT1N	Rohm	KTA701U	UN4210	Panasonic	KRC114M
RN2703JE	Toshiba	KRA553E	RT1N441S	Renesas	KRC104M	UMT2N	Rohm	KTA711U	UN4211	Panasonic	KRC102M
RN2704	Toshiba	KRA554U	RT1P140C	Renesas	KRA111S	UMT222A	Rohm	KTN2222A	UN4212	Panasonic	KRC103M
RN2704JE	Toshiba	KRA554E	RT1P140S	Renesas	KRA111M	UMT2907A	Rohm	KTN2907A	UN4213	Panasonic	KRC104M
RN2705	Toshiba	KRA555U	RT1P141C	Renesas	KRA102S	UMW1N	Rohm	KTC601U	UN4214	Panasonic	KRC107M
RN2705JE	Toshiba	KRA555E	RT1P141S	Renesas	KRA102M	UMX1N	Rohm	KTC801U	UN4215	Panasonic	KRC111M
RN2706	Toshiba	KRA556U	RT1P144C	Renesas	KRA107S	UMX2N	Rohm	KTC811U	UN4216	Panasonic	KRC110M
RN2706JE	Toshiba	KRA556E	RT1P144S	Renesas	KRA107M	UMX3N	Rohm	KTC813U	UN4217	Panasonic	KRC113M
RN2707	Toshiba	KRA557U	RT1P241C	Renesas	KRA103S	UMZ1N	Rohm	KTX101U	UN4221	Panasonic	KRA242M
RN2707JE	Toshiba	KRA557E	RT1P241S	Renesas	KRA103M	UN211E	Panasonic	KRA109S	UN4222	Panasonic	KRA243M
RN2708	Toshiba	KRA558U	RT1P430C	Renesas	KRA110S	UN211F	Panasonic	KRA119S	UN4223	Panasonic	KRA244M
RN2708JE	Toshiba	KRA558E	RT1P430S	Renesas	KRA110M	UN211H	Panasonic	KRA118S	UN4224	Panasonic	KRA246M
RN2709	Toshiba	KRA559U	RT1P441S	Renesas	KRA104M	UN211L	Panasonic	KRA101S	UN5110	Panasonic	KRA314
RN2709JE	Toshiba	KRA559E	S2Z79	Toshiba	KTA1536T	UN211M	Panasonic	KRA105S	UN5111	Panasonic	KRA302
RN2710	Toshiba	KRA560U	S3C92	Toshiba	KTC3532T	UN211N	Panasonic	KRA106S	UN5112	Panasonic	KRA303
RN2710JE	Toshiba	KRA560E	TIP31C	Mospec	TIP31CF	UN221E	Panasonic	KRC109S	UN5113	Panasonic	KRA304

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
UN5114	Panasonic	KRA307									
UN5115	Panasonic	KRA311									
UN5116	Panasonic	KRA310									
UN5117	Panasonic	KRA313									
UN5210	Panasonic	KRC414									
UN5211	Panasonic	KRC402									
UN5212	Panasonic	KRC403									
UN5213	Panasonic	KRC404									
UN5214	Panasonic	KRC407									
UN5215	Panasonic	KRC411									
UN5216	Panasonic	KRC410									
UN5217	Panasonic	KRC413									
XP05501	Panasonic	KTC812U									
XP06111	Panasonic	KRA722U									
XP06112	Panasonic	KRA723U									
XP06113	Panasonic	KRA724U									
XP06114	Panasonic	KRA727U									
XP06115	Panasonic	KRA731U									
XP06116	Panasonic	KRA730U									
XP06210	Panasonic	KRC834U									
XP06211	Panasonic	KRC822U									
XP06212	Panasonic	KRC823U									
XP06213	Panasonic	KRC824U									
XP06214	Panasonic	KRC827U									
XP06215	Panasonic	KRC831U									
XP06216	Panasonic	KRC830U									
XP06401	Panasonic	KTA711U									
XP06501	Panasonic	KTC811U									

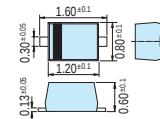
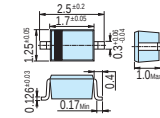
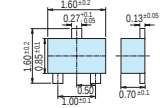
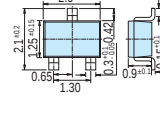
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Small Signal Switching Diode

Type No.		Mark	Max. Ratings							V _{F1} (V)		V _{F2} (V)		V _{F3} (V)		I _R (μA)		C _T (pF)		trr (ns)		Package	Outline (Unit : mm)	
			V _{RM} (V)	V _R (V)	I _{FM} (mA)	I _O (mA)	I _{FSM} (A)	P _D (mW)	Typ.	I _F (mA)	Typ.	I _F (mA)	Typ.	Max.	I _F (mA)	Max.	V _R (V)	Max.	V _R (V)	f (MHz)	Max.			I _F (mA)
KDS160F		4	85	80	300	100	2	100	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	TFSC	
KDS160V		UF	85	80	300	100	2	100	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	VSC	
KDS160E		UF	85	80	300	100	2	150	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	ESC	
KDS135		JA	300	250	300	100	2	200	-	-	-	-	1	1.2	100	0.2	250	3	0	1	100	30	USC	
KDS160		UF	85	80	300	100	2	200	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10		
KDS4148U		UH	100	75	450	150	2	-	0.6	1	0.72	10	0.9	1.2	100	0.5	75	2	0	1	4	10		
KDS120V		A3	85	80	300	100	2	100	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	VSM	
KDS121V		B3	85	80	300	100	2	100	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10		
KDS123V		US	80	80	300	100	2	100	-	-	-	-	-	1.2	100	0.1	80	3.5	6	1	-	-		
KDS221V		DS	20	20	200	100	0.3	100	-	-	-	-	-	1.0	10	0.1	15	-	-	-	-	-		
KDS120E		A3	85	80	300	100	2	100	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	ESM	
KDS121E		B3	85	80	300	100	2	100	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10		
KDS123E		US	80	80	300	100	2	100	-	-	-	-	-	1.2	100	0.1	80	3.5	6	1	-	-		
KDS221E		DS	20	20	200	100	0.3	100	-	-	-	-	-	1.0	10	0.1	15	-	-	-	-	-		
KDS120		A3	85	80	300	100	2	100	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	USM	
KDS121		B3	85	80	300	100	2	100	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10		
KDS122		US	80	80	300	100	2	100	-	-	-	-	-	1.2	100	0.1	80	3.5	6	1	-	-		
KDS123U		DS	20	20	200	100	0.3	100	-	-	-	-	-	1.0	10	0.1	15	-	-	-	-	-		
BAS23W		JE	300	250	200	-	2	200	-	-	-	-	-	1.25	150	0.2	250	3	0	1	100	30	SOT-23	
KDS135S		JA	300	250	300	100	2	150	-	-	-	-	-	1.2	100	0.2	250	3	0	1	100	30		
KDS181		A3	85	80	300	100	2	150	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10		
KDS184		B3	85	80	300	100	2	150	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10		
KDS187		D3	85	80	300	100	2	150	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10		
KDS193		F3	85	80	300	100	2	150	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10		
KDS196		G3	85	80	300	100	2	150	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10		
KDS226		C3	85	80	300	100	2	150	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10		
BAV23C		U4	250	200	625	225	9	250	1.0	100	1.25	200	-	-	-	0.1	200	2	0	1	50	10		
BAV23A		JD	250	200	625	225	9	250	1.0	100	1.25	200	-	-	-	0.1	200	2	0	1	50	10		
BAV23		JK	250	200	625	225	9	250	1.0	100	1.25	200	-	-	-	0.1	200	2	0	1	50	10		
BAV99		H8	85	80	-	250	2	225	0.6	1	0.72	10	-	1.25	150	0.5	80	3	0	1	4	10		
BAV70		H7	85	80	250	-	2	300	0.6	1	0.7	10	-	1.25	150	0.5	80	3	0	1	4	10		
BAW56		H6	85	80	250	-	2	300	0.6	1	0.7	10	-	1.25	150	0.5	80	4	0	1	4	10		
KDS127E		US	80	80	300	100	2	200	-	-	-	-	-	1.2	100	0.1	80	3.5	6	1	-	-	TES6	
KDS127U		S7	80	80	300	100	2	200	-	-	-	-	-	1.2	100	0.1	80	3.5	6	1	-	-	US6	

Note) : Typ.

Small Signal Band Switch Diode

Type No.		Mark	Max. Ratings		V _F (V)		I _R (μA)		V _R (V)		C _T (pF)				r _S (Ω)				Package	Outline (Unit : mm)
			V _R (V)	I _F (mA)	Max	I _F (mA)	Max.	V _R (V)	Min.	I _R (μA)	Typ.	Max.	V _R (V)	f (MHz)	Typ.	Max.	I _F (mA)	f (MHz)		
KDS114E		UD	35	100	0.85	2	0.1	15	35	1	0.7	1.2	6	1	0.5	0.9	2	100	ESC	
KDS114		UD	35	100	0.85	2	0.1	15	35	1	0.7	1.2	6	1	0.5	0.9	2	100	USC	
KDS112E		BF	30	50	0.85	2	0.1	15	30	1	0.8	1.2	6	1	0.6	0.9	2	100	ESM	
KDS112		BF	30	50	0.85	2	0.1	15	30	1	0.8	1.2	6	1	0.6	0.9	2	100	USM	
KDS113		T3	30	50	0.85	2	0.1	15	30	1	0.8	1.2	6	1	0.6	0.9	2	100		
KDS115		R3	30	50	0.85	2	0.1	15	30	1	0.8	1.2	6	1	0.6	0.9	2	100		

Zener Voltage	ELP-2	TFSC	VSC	ESC	USC	SOT-23	USF	SMF	SMA
									
	0.6*0.3mm	0.8*0.6mm	1.0*0.6mm	1.2*0.8mm	1.7*1.25mm	2.93*1.3mm	1.9*1.3mm	2.6*1.6mm	4.5*2.6mm
	P _D =0.1W	P _D =0.1W	P _D =0.1W	P _D =0.1W	P _D =0.15W	P _D =0.2W	P _D =0.5W	P _D =1W	P _D =1W
2.0V				KDZ2.0EV	KDZ2.0V	Z02W2.0V			
2.2V				KDZ2.2EV	KDZ2.2V	Z02W2.2V			
2.4V				KDZ2.4EV	KDZ2.4V	Z02W2.4V			
2.7V				KDZ2.7EV	KDZ2.7V	Z02W2.7V			
3.0V				KDZ3.0EV	KDZ3.0V	Z02W3.0V			
3.3V				KDZ3.3EV	KDZ3.3V	Z02W3.3V			
3.6V				KDZ3.6EV	KDZ3.6V	Z02W3.6V			
3.9V				KDZ3.9EV	KDZ3.9V	Z02W3.9V			
4.3V		KDZ4.3FV	KDZ4.3VV	KDZ4.3EV	KDZ4.3V	Z02W4.3V	USFZ4.3V	SMFZ4.3V	SMAZ4.3V
4.7V		KDZ4.7FV	KDZ4.7VV	KDZ4.7EV	KDZ4.7V	Z02W4.7V	USFZ4.7V	SMFZ4.7V	SMAZ4.7V
5.1V	KDZ5.1EL	KDZ5.1FV	KDZ5.1VV	KDZ5.1EV	KDZ5.1V	Z02W5.1V	USFZ5.1V	SMFZ5.1V	SMAZ5.1V
5.6V	KDZ5.6EL	KDZ5.6FV	KDZ5.6VV	KDZ5.6EV	KDZ5.6V	Z02W5.6V	USFZ5.6V	SMFZ5.6V	SMAZ5.6V
6.2V		KDZ6.2FV	KDZ6.2VV	KDZ6.2EV	KDZ6.2V	Z02W6.2V	USFZ6.2V	SMFZ6.2V	SMAZ6.2V
6.8V		KDZ6.8FV	KDZ6.8VV	KDZ6.8EV	KDZ6.8V	Z02W6.8V	USFZ6.8V	SMFZ6.8V	SMAZ6.8V
7.5V	KDZ7.5EL	KDZ7.5FV	KDZ7.5VV	KDZ7.5EV	KDZ7.5V	Z02W7.5V	USFZ7.5V	SMFZ7.5V	SMAZ7.5V
8.2V		KDZ8.2FV	KDZ8.2VV	KDZ8.2EV	KDZ8.2V	Z02W8.2V	USFZ8.2V	SMFZ8.2V	SMAZ8.2V
9.1V		KDZ9.1FV	KDZ9.1VV	KDZ9.1EV	KDZ9.1V	Z02W9.1V	USFZ9.1V	SMFZ9.1V	SMAZ9.1V
10V		KDZ10FV	KDZ10VV	KDZ10EV	KDZ10V	Z02W10V	USFZ10V	SMFZ10V	SMAZ10V
11V		KDZ11FV	KDZ11VV	KDZ11EV	KDZ11V	Z02W11V	USFZ11V	SMFZ11V	SMAZ11V
12V		KDZ12FV	KDZ12VV	KDZ12EV	KDZ12V	Z02W12V	USFZ12V	SMFZ12V	SMAZ12V
13V		KDZ13FV	KDZ13VV	KDZ13EV	KDZ13V	Z02W13V	USFZ13V	SMFZ13V	SMAZ13V
15V		KDZ15FV	KDZ15VV	KDZ15EV	KDZ15V	Z02W15V	USFZ15V	SMFZ15V	SMAZ15V
16V		KDZ16FV	KDZ16VV	KDZ16EV	KDZ16V	Z02W16V	USFZ16V	SMFZ16V	SMAZ16V
18V		KDZ18FV	KDZ18VV	KDZ18EV	KDZ18V	Z02W18V	USFZ18V	SMFZ18V	SMAZ18V
20V		KDZ20FV	KDZ20VV	KDZ20EV	KDZ20V	Z02W20V	USFZ20V	SMFZ20V	SMAZ20V
22V		KDZ22FV	KDZ22VV	KDZ22EV	KDZ22V	Z02W22V	USFZ22V	SMFZ22V	SMAZ22V
24V		KDZ24FV	KDZ24VV	KDZ24EV	KDZ24V	Z02W24V	USFZ24V	SMFZ24V	SMAZ24V
27V		KDZ27FV	KDZ27VV	KDZ27EV	KDZ27V	Z02W27V	USFZ27V	SMFZ27V	SMAZ27V
30V		KDZ30FV	KDZ30VV	KDZ30EV	KDZ30V	Z02W30V	USFZ30V	SMFZ30V	SMAZ30V
33V		KDZ33FV	KDZ33VV	KDZ33EV	KDZ33V	Z02W33V	USFZ33V	SMFZ33V	SMAZ33V
36V		KDZ36FV	KDZ36VV	KDZ36EV	KDZ36V	Z02W36V	USFZ36V	SMFZ36V	SMAZ36V
100V					KDZ100VW	Z02W100V			
110V					KDZ110VW				

100mW Zener Diode

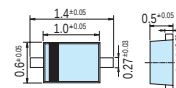
Type No.	Grade	Mark	P _D (mW)	V _Z (V)		I _Z (mA)	Z _Z (Ω)		Z _{ZK} (Ω)		I _R (μA)		Package	Outline (Unit : mm)
				Min.	Max.		Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	V _R (V)		
KDZ5.1EL	-	3	100	4.84	5.37	5.0	70	5	1000	0.5	2	1.5	ELP-2	
KDZ5.6EL	-	4		5.31	5.92		40	5	900		2	1.5		
KDZ7.5EL	-	5		7.06	7.84		23	5	120		0.5	4		
KDZ4.3FV	-	4F	100	4.00	4.50	5.0	130	5	1000	0.5	5	1	TFSC	
	Y	4P		4.17	4.43		130	5	1000		5	1		
KDZ4.7FV	-	5F		4.40	4.90		130	5	1000		5	1		
	Y	5P		4.55	4.75		130	5	1000		5	1		
KDZ5.1FV	-	6F		4.80	5.40		70	5	1000		1	1.5		
	Y	6P		4.98	5.20		70	5	1000		1	1.5		
KDZ5.6FV	-	8		5.30	6.00		40	5	900		1	2.5		
	Y	8P		5.49	5.73		40	5	900		1	2.5		
KDZ6.2FV	-	9F		5.80	6.60		30	5	500		1	3		
	Y	9P		6.06	6.33		30	5	500		1	3		
KDZ6.8FV	-	BF		6.40	7.20		25	5	150		0.5	5		
	Y	BP		6.65	6.93		25	5	150		0.5	5		
KDZ7.5FV	-	PF		7.00	7.90		23	5	120		0.5	6		
	Y	PP		7.28	7.60		23	5	120		0.5	6		
KDZ8.2FV	-	DF		7.70	8.70		20	5	120		0.5	6.5		
	Y	DP		8.02	8.3		20	5	120		0.5	6.5		
KDZ9.1FV	-	EF		8.50	9.60		18	5	120		0.5	7		
	Y	EP		8.85	9.23		18	5	120		0.5	7		
KDZ10FV	-	UF		9.40	10.60		15	5	120		0.5	8		
	Y	UP		9.77	10.21		15	5	120		0.5	8		
KDZ11FV	-	GF		10.40	11.60		15	5	120		0.5	8.5		
	Y	GP		10.76	11.22		15	5	120		0.5	8.5		
KDZ12FV	-	HF		11.40	12.60		15	5	110		0.5	9		
	Y	HP		11.74	12.24		15	5	110		0.5	9		
KDZ13FV	-	JF		12.40	14.10		15	5	110		0.5	10		
	Y	JP		12.91	13.49		15	5	110		0.5	10		
KDZ15FV	-	KF		13.80	15.60		15	5	110		0.5	11		
	Y	KP		14.34	14.98		15	5	110		0.5	11		
KDZ16FV	-	91		15.30	17.10		18	5	150		0.5	12		
	Y	9		15.85	16.51		18	5	150		0.5	12		
KDZ18FV	-	LF		16.80	19.10		20	5	150		0.5	13		
	Y	LP		17.56	18.35		20	5	150		0.5	13		
KDZ20FV	-	MF		18.80	21.20		25	5	200		0.5	15		
	Y	MP		19.52	20.39		25	5	200		0.5	15		
KDZ22FV	-	NF		20.80	23.30		30	5	200		0.5	17		
	Y	NP		21.54	22.47		30	5	200		0.5	17		
KDZ24FV	-	QF		22.80	25.60		40	5	200		0.5	19		
	Y	QP		23.72	24.78		40	5	200		0.5	19		
KDZ27FV	-	RF		25.10	28.90	2.0	150	2.0	150		0.1	21		
	Y	RP		26.19	27.53		150	2.0	150		0.1	21		
KDZ30FV	-	SF		28.00	32.00		200	2.0	200		0.1	23		
	Y	SP		29.19	30.69		200	2.0	200		0.1	23		
KDZ33FV	-	AP		31.00	35.00		250	2.0	250		0.1	25		
	Y	AF		32.15	33.79		250	2.0	250		0.1	25		
KDZ36FV	-	TF		34.00	38.00		300	2.0	300		0.1	27		
	Y	TP		35.07	36.87		300	2.0	300		0.1	27		

Note) : Mounted on a glass epoxy circuit board of 20 × 20mm, pad dimension of 4 × 4mm.

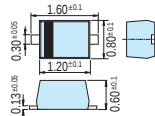
100mW Zener Diode

Type No.	Grade	Mark	P _D (mW)	V _Z (V)		I _Z (mA)	Z _Z (Ω)		Z _{ZK} (Ω)		I _R (μA)		Package	Outline (Unit : mm)
				Min.	Max.		Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	V _R (V)		
KDZ4.3VV	-	ZJ	100	4.00	4.50	5.0	130	5	1000	0.5	5	1	VSC	
	Y	JY		4.17	4.43		130	5	1000		5	1		
KDZ4.7VV	-	ZK		4.40	4.90		130	5	1000		5	1		
	Y	KY		4.55	4.75		130	5	1000		5	1		
KDZ5.1VV	-	ZL		4.80	5.40		70	5	1000		1	1.5		
	Y	LY		4.98	5.20		70	5	1000		1	1.5		
KDZ5.6VV	-	ZM		5.30	6.00		40	5	900		1	2.5		
	Y	MY		5.49	5.73		40	5	900		1	2.5		
KDZ6.2VV	-	ZN		5.80	6.60		30	5	500		1	3		
	Y	NY		6.06	6.33		30	5	500		1	3		
KDZ6.8VV	-	ZP		6.40	7.20		25	5	150		0.5	5		
	Y	PY		6.65	6.93		25	5	150		0.5	5		
KDZ7.5VV	-	ZQ		7.00	7.90		23	5	120		0.5	6		
	Y	QY		7.28	7.60		23	5	120		0.5	6		
KDZ8.2VV	-	ZR		7.70	8.70		20	5	120		0.5	6.5		
	Y	RY		8.02	8.3		20	5	120		0.5	6.5		
KDZ9.1VV	-	ZS		8.50	9.60		18	5	120		0.5	7		
	Y	SY		8.85	9.23		18	5	120		0.5	7		
KDZ10VV	-	10		9.40	10.60		15	5	120		0.5	8		
	Y	0Y		9.77	10.21		15	5	120		0.5	8		
KDZ11VV	-	11		10.40	11.60		15	5	120		0.5	8.5		
	Y	1Y		10.76	11.22		15	5	120		0.5	8.5		
KDZ12VV	-	12		11.40	12.60		15	5	110		0.5	9		
	Y	2Y		11.74	12.24		15	5	110		0.5	9		
KDZ13VV	-	13		12.40	14.10		15	5	110		0.5	10		
	Y	3Y		12.91	13.49		15	5	110		0.5	10		
KDZ15VV	-	15		13.80	15.60		15	5	110		0.5	11		
	Y	5Y		14.34	14.98		15	5	110		0.5	11		
KDZ16VV	-	16		15.30	17.10		18	5	150		0.5	12		
	Y	6Y		15.85	16.51		18	5	150		0.5	12		
KDZ18VV	-	18		16.80	19.10		20	5	150		0.5	13		
	Y	8Y		17.56	18.35		20	5	150		0.5	13		
KDZ20VV	-	20		18.80	21.20		25	5	200		0.5	15		
	Y	4Y		19.52	20.39		25	5	200		0.5	15		
KDZ22VV	-	22		20.80	23.30		30	5	200		0.5	17		
	Y	7Y		21.54	22.47		30	5	200		0.5	17		
KDZ24VV	-	24		22.80	25.60		40	5	200		0.5	19		
	Y	9Y		23.72	24.78		40	5	200		0.5	19		
KDZ27VV	-	27		25.10	28.90	2.0	150	2.0	150		0.1	21		
	Y	TY		26.19	27.53		150	2.0	150		0.1	21		
KDZ30VV	-	30		28.00	32.00		200	2.0	200		0.1	23		
	Y	UY		29.19	30.69		200	2.0	200		0.1	23		
KDZ33VV	-	33		31.00	35.00		250	2.0	250		0.1	25		
	Y	VY		32.15	33.79		250	2.0	250		0.1	25		
KDZ36VV	-	36		34.00	38.00		300	2.0	300		0.1	27		
	Y	WY		35.07	36.87		300	2.0	300		0.1	27		

Note) : Mounted on a glass epoxy circuit board of 20 × 20mm, pad dimension of 4 × 4mm.

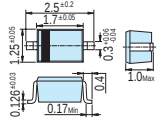


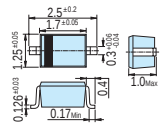
150mW Zener Diode

Type No.	Grade	Mark	Max. Ratings	V _Z (V)			Z _Z (Ω)		Z _{ZK} (Ω)		I _R (μA)		Package	Outline (Unit : mm)
			P _D (mW)	Min.	Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	V _R (V)		
KDZ2.0EV	-	2A	150	1.85	2.15	5	100	5	1000	0.5	120	1.0	ESC	
	Y	2A		1.95	2.15									
KDZ2.2EV	-	2B		2.05	2.38	5	100	5	1000	0.5	120	1.0		
	Y	2B		2.16	2.38									
KDZ2.4EV	-	2C		2.28	2.60	5	100	5	1000	0.5	120	1.0		
	Y	2C		2.40	2.60									
KDZ2.7EV	-	2D		2.50	2.90	5	110	5	1000	0.5	120	1.0		
	Y	2D		2.65	2.90									
KDZ3.0EV	-	30		2.80	3.20	5	120	5	1000	0.5	50	1.0		
	Y	30		2.95	3.20									
KDZ3.3EV	-	33		3.10	3.50	5	130	5	1000	0.5	20	1.0		
	Y	33		3.25	3.50									
KDZ3.6EV	-	36		3.40	3.80	5	130	5	1000	0.5	10	1.0		
	Y	36		3.60	3.845									
KDZ3.9EV	-	39		3.70	4.10	5	130	5	1000	0.5	10	1.0		
	Y	39		3.890	4.160									
KDZ4.3EV	-	43		4.00	4.50	5	130	5	1000	0.5	5	1.0		
	Y	43		4.170	4.430									
KDZ4.7EV	-	47		4.40	4.90	5	120	5	1000	0.5	5	1.0		
	Y	47		4.550	4.750									
KDZ5.1EV	-	51		4.80	5.40	5	70	5	1000	0.5	1	1.5		
	Y	51		4.980	5.200									
KDZ5.6EV	-	56		5.30	6.00	5	40	5	900	0.5	1	2.5		
	Y	56		5.490	5.730									
KDZ6.2EV	-	62		5.80	6.60	5	30	5	500	0.5	1	3.0		
	Y	62		6.060	6.330									
KDZ6.8EV	-	68		6.40	7.20	5	25	5	150	0.5	0.5	5.0		
	Y	68		6.650	6.930									
KDZ7.5EV	-	75		7.00	7.90	5	23	5	120	0.5	0.5	6.0		
	Y	75		7.280	7.600									
KDZ8.2EV	-	82		7.70	8.70	5	20	5	120	0.5	0.5	6.5		
	Y	82		8.020	8.360									
KDZ9.1EV	-	91		8.50	9.60	5	18	5	120	0.5	0.5	7.0		
	Y	91		8.850	9.230									
KDZ10EV	-	10		9.40	10.60	5	15	5	120	0.5	0.5	8.0		
	Y	10		9.770	10.210									
KDZ11EV	-	11		10.40	11.60	5	15	5	120	0.5	0.5	8.5		
	Y	11		10.760	11.220									
KDZ12EV	-	12		11.40	12.60	5	15	5	110	0.5	0.5	9.0		
	Y	12		11.740	12.240									
KDZ13EV	-	13		12.40	14.10	5	15	5	110	0.5	0.5	10		
	Y	13		12.910	13.490									
KDZ15EV	-	15		13.80	15.60	5	15	5	110	0.5	0.5	11		
	Y	15		14.340	14.980									
KDZ16EV	-	16		15.30	17.10	5	18	5	150	0.5	0.5	12		
	Y	16		15.850	16.510									
KDZ18EV	-	18		16.80	19.10	5	20	5	150	0.5	0.5	14		
	Y	18		17.560	18.350									
KDZ20EV	-	20		18.80	21.20	5	25	5	200	0.5	0.5	15		
	Y	20		19.520	20.390									
KDZ22EV	-	22		20.80	23.30	5	30	5	200	0.5	0.5	17		
	Y	22		21.540	22.470									
KDZ24EV	-	24		22.80	25.60	5	40	5	200	0.5	0.5	19		
	Y	24		23.720	24.780									
KDZ27EV	-	27		25.10	28.90	2	150	2	150	0.5	0.1	21		
	Y	27		26.19	27.53									
KDZ30EV	-	A2		28.00	32.00	2	200	2	200	0.5	0.1	23		
	Y	A2		29.19	30.69									
KDZ33EV	-	A3		31.00	35.00	2	250	2	250	0.5	0.1	25		
	Y	A3		32.15	33.79									
KDZ36EV	-	A4		34.00	38.00	2	300	2	300	0.5	0.1	27		
	Y	A4		35.07	36.87									

Note) : Mounted on a glass epoxy circuit board of 20 × 20mm, pad dimension of 4 × 4mm.

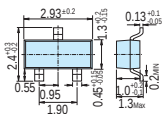
200mW Zener Diode

Type No.	Grade	Mark	Max. Ratings	V _Z (V)			Z _Z (Ω)		Z _{ZK} (Ω)		I _R (μA)		Package	Outline (Unit : mm)
			P _D (mW)	Min.	Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	V _R (V)		
KDZ2.0V	-	2A	200	1.85	2.15	5	100	5	1000	0.5	120	1.0	USC	
	Y	2A		1.95	2.15									
KDZ2.2V	-	2B		2.05	2.38	5	100	5	1000	0.5	120	1.0		
	Y	2B		2.16	2.38									
KDZ2.4V	-	2C		2.28	2.60	5	100	5	1000	0.5	120	1.0		
	Y	2C		2.40	2.60									
KDZ2.7V	-	2D		2.50	2.90	5	110	5	1000	0.5	120	1.0		
	Y	2D		2.65	2.90									
KDZ3.0V	-	30		2.80	3.20	5	120	5	1000	0.5	50	1.0		
	Y	30		2.95	3.20									
KDZ3.3V	-	33		3.10	3.50	5	130	5	1000	0.5	20	1.0		
	Y	33		3.25	3.50									
KDZ3.6V	-	36		3.40	3.80	5	130	5	1000	0.5	10	1.0		
	Y	36		3.60	3.845									
KDZ3.9V	-	39		3.70	4.10	5	130	5	1000	0.5	10	1.0		
	Y	39		3.890	4.160									
KDZ4.3V	-	43		4.00	4.50	5	130	5	1000	0.5	5	1.0		
	Y	43		4.170	4.430									
KDZ4.7V	-	47		4.40	4.90	5	120	5	1000	0.5	5	1.0		
	Y	47		4.550	4.750									
KDZ5.1V	-	51		4.80	5.40	5	70	5	1000	0.5	1	1.5		
	Y	51		4.980	5.200									
KDZ5.6V	-	56		5.30	6.00	5	40	5	900	0.5	1	2.5		
	Y	56		5.490	5.730									
KDZ6.2V	-	62		5.80	6.60	5	30	5	500	0.5	1	3.0		
	Y	62		6.060	6.330									
KDZ6.8V	-	68		6.40	7.20	5	25	5	150	0.5	0.5	5.0		
	Y	68		6.650	6.930									
KDZ7.5V	-	75		7.00	7.90	5	23	5	120	0.5	0.5	6.0		
	Y	75		7.280	7.600									
KDZ8.2V	-	82		7.70	8.70	5	20	5	120	0.5	0.5	6.5		
	Y	82		8.020	8.360									
KDZ9.1V	-	91		8.50	9.60	5	18	5	120	0.5	0.5	7.0		
	Y	91		8.850	9.230									
KDZ10V	-	10		9.40	10.60	5	15	5	120	0.5	0.5	8.0		
	Y	10		9.770	10.210									
KDZ11V	-	11		10.40	11.60	5	15	5	120	0.5	0.5	8.5		
	Y	11		10.760	11.220									
KDZ12V	-	12		11.40	12.60	5	15	5	110	0.5	0.5	9.0		
	Y	12		11.740	12.240									
KDZ13V	-	13		12.40	14.10	5	15	5	110	0.5	0.5	10		
	Y	13		12.910	13.490									
KDZ15V	-	15		13.80	15.60	5	15	5	110	0.5	0.5	11		
	Y	15		14.340	14.980									
KDZ16V	-	16		15.30	17.10	5	18	5	150	0.5	0.5	12		
	Y	16		15.850	16.510									
KDZ18V	-	18		16.80	19.10	5	20	5	150	0.5	0.5	14		
	Y	18		17.560	18.350									
KDZ20V	-	20		18.80	21.20	5	25	5	200	0.5	0.5	15		
	Y	20		19.520	20.390									
KDZ22V	-	22		20.80	23.30	5	30	5	200	0.5	0.5	17		
	Y	22		21.540	22.470									
KDZ24V	-	24		22.80	25.60	5	40	5	200	0.5	0.5	19		
	Y	24		23.720	24.780									
KDZ27V	-	A1		26.19	27.53	2	150	2	150	0.5	0.1	21		
KDZ30V	-	A2		29.19	30.69	2	200	2	200	0.5	0.1	23		
KDZ33V	-	A3		32.15	33.79	2	250	2	250	0.5	0.1	25		
KDZ36V	-	A4		35.07	36.87	2	300	2	300	0.5	0.1	27		
KDZ100V	-	AQ		95	105	1	700	1	-	-	0.2	76		
USCZ5.6V	-	ZM		5.32	5.88	10	-	-	-	-	1.5	4		

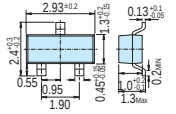


Note) : Mounted on a glass epoxy circuit board of 20 × 20mm, pad dimension of 4 × 4mm.

200mW Zener Diode

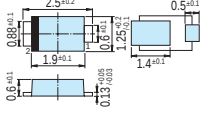
Type No.	Grade	Mark	Max. Ratings	V _Z (V)			Z _Z (Ω)		Z _{ZK} (Ω)		I _R (μA)		Package	Outline (Unit : mm)
			P _D (mW)	Min.	Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	V _R (V)		
Z02W2.0V	-	2A	200	1.85	2.15	5	100	5	1000	0.5	120	1	SOT-23	
	X	2AX		1.85	2.05	5	100	5	1000	0.5	120	1		
	Z	2AZ		1.95	2.15	5	100	5	1000	0.5	120	1		
Z02W2.2V	-	2B		2.05	2.38	5	100	5	1000	0.5	120	1		
	X	2BX		2.05	2.26	5	100	5	1000	0.5	120	1		
	Z	2BZ		2.16	2.38	5	100	5	1000	0.5	120	1		
Z02W2.4V	-	2C		2.28	2.6	5	100	5	1000	0.5	120	1		
	X	2CX		2.28	2.5	5	100	5	1000	0.5	120	1		
	Z	2CZ		2.4	2.6	5	100	5	1000	0.5	120	1		
Z02W2.7V	-	2D		2.5	2.9	5	110	5	1000	0.5	120	1		
	X	2DX		2.5	2.75	5	110	5	1000	0.5	120	1		
	Z	2DZ		2.65	2.9	5	110	5	1000	0.5	120	1		
Z02W3.0V	-	30		2.8	3.2	5	120	5	1000	0.5	50	1		
	X	30X		2.8	3.05	5	120	5	1000	0.5	50	1		
	Z	30Z		2.95	3.2	5	120	5	1000	0.5	50	1		
Z02W3.3V	-	33		3.1	3.5	5	130	5	1000	0.5	20	1		
	X	33X		3.1	3.35	5	130	5	1000	0.5	20	1		
	Z	33Z		3.25	3.5	5	130	5	1000	0.5	20	1		
Z02W3.6V	-	36		3.4	3.8	5	130	5	1000	0.5	10	1		
	X	36X		3.4	3.65	5	130	5	1000	0.5	10	1		
	Z	36Z		3.55	3.8	5	130	5	1000	0.5	10	1		
Z02W3.9V	-	39		3.7	4.1	5	130	5	1000	0.5	10	1		
	X	39X		3.7	3.97	5	130	5	1000	0.5	10	1		
	Z	39Z		3.87	4.1	5	130	5	1000	0.5	10	1		
Z02W4.3V	-	43		4	4.5	5	130	5	1000	0.5	5	1		
	Y	43Y		4.13	4.35	5	130	5	1000	0.5	5	1		
Z02W4.7V	-	47		4.4	4.9	5	120	5	1000	0.5	5	1		
	Y	47Y		4.53	4.76	5	120	5	1000	0.5	5	1		
Z02W5.1V	-	51		4.8	5.4	5	70	5	1000	0.5	1	1.5		
	Y	51Y		4.97	5.24	5	70	5	1000	0.5	1	1.5		
Z02W5.6V	-	56		5.3	6	5	40	5	900	0.5	1	2.5		
	Y	56Y		5.43	5.81	5	40	5	900	0.5	1	2.5		
Z02W6.2V	-	62		5.8	6.6	5	30	5	500	0.5	1	3		
	Y	62Y		6	6.39	5	30	5	500	0.5	1	3		
Z02W6.8V	-	68		6.4	7.2	5	25	5	150	0.5	0.5	5		
	Y	68Y		6.6	7.02	5	25	5	150	0.5	0.5	5		
Z02W7.5V	-	75		7.2	7.9	5	23	5	120	0.5	0.5	6		
	Y	75Y		7.23	7.66	5	23	5	120	0.5	0.5	6		
Z02W8.2V	-	82		7.7	8.7	5	20	5	120	0.5	0.5	6.5		
	Y	82Y		7.96	8.43	5	20	5	120	0.5	0.5	6.5		
Z02W9.1V	-	91		8.5	9.6	5	18	5	120	0.5	0.5	7		
	Y	91Y		8.8	9.3	5	18	5	120	0.5	0.5	7		
Z02W10V	-	10		9.4	10.6	5	15	5	120	0.5	0.5	8		
	Y	10Y		9.73	10.26	5	15	5	120	0.5	0.5	8		
Z02W11V	-	11		10.4	11.6	5	15	5	120	0.5	0.5	8.5		
	Y	11Y		10.73	11.26	5	15	5	120	0.5	0.5	8.5		
Z02W12V	-	12		11.4	12.6	5	15	5	110	0.5	0.5	9		
	Y	12Y		11.73	12.26	5	15	5	110	0.5	0.5	9		
Z02W13V	-	13		12.4	14.1	5	15	5	110	0.5	0.5	10		
	Y	13Y		12.88	13.57	5	15	5	110	0.5	0.5	10		
Z02W15V	-	15		13.8	15.6	5	15	5	110	0.5	0.5	11		
	Y	15Y		14.33	15.11	5	15	5	110	0.5	0.5	11		
Z02W16V	-	16		15.3	17.1	5	18	5	150	0.5	0.5	12		
	Y	16Y		15.8	16.6	5	18	5	150	0.5	0.5	12		
Z02W18V	-	18		16.8	19.1	5	20	5	150	0.5	0.5	14		
	Y	18Y		17.46	18.43	5	20	5	150	0.5	0.5	14		
Z02W20V	-	20		18.8	21.2	5	25	5	200	0.5	0.5	15		
	Y	20Y		19.48	20.46	5	25	5	200	0.5	0.5	15		
Z02W22V	-	22		20.8	23.3	5	30	5	200	0.5	0.5	17		
	Y	22Y		21.48	22.56	5	30	5	200	0.5	0.5	17		
Z02W24V	-	24		22.8	25.6	5	40	5	200	0.5	0.5	19		
	Y	24Y		23.61	24.92	5	40	5	200	0.5	0.5	19		
Z02W27V	-	27A		26.19	27.53	2	150	2	150	0.5	0.1	21		
Z02W30V	-	30A		29.19	30.69	2	200	2	200	0.5	0.1	23		
Z02W33V	-	33A		32.15	33.79	2	250	2	250	0.5	0.1	25		
Z02W36V	-	36A		35.07	36.87	2	300	2	300	0.5	0.1	27		

300mW Zener Diode

Type No.	Mark	P _D (mW)	V _Z			Z _Z (Ω)		Z _{ZK} (Ω)		I _R (μA)		Package	Outline (Unit : mm)
			Min.	Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	V _R (V)		
BZX84C2V0	2AH	300	1.85	2.15	5	100	5	1000	0.5	120	1.0	SOT-23	
BZX84C2V2	2BH		2.05	2.38	5	100	5	1000	0.5	120	1.0		
BZX84C2V4	2CH		2.28	2.60	5	100	5	1000	0.5	120	1.0		
BZX84C2V7	2DH		2.50	2.90	5	100	5	1000	0.5	120	1.0		
BZX84C3V0	30H		2.80	3.20	5	120	5	1000	0.5	50	1.0		
BZX84C3V3	33H		3.10	3.50	5	130	5	1000	0.5	20	1.0		
BZX84C3V6	36H		3.40	3.80	5	130	5	1000	0.5	10	1.0		
BZX84C3V9	39H		3.70	4.10	5	130	5	1000	0.5	10	1.0		
BZX84C4V3	4.3H		4.13	4.35	5	130	5	1000	0.5	5	1.0		
BZX84C4V7	4.7H		4.53	4.76	5	120	5	1000	0.5	5	1.0		
BZX84C5V1	5.1H		4.97	5.24	5	70	5	1000	0.5	1	1.5		
BZX84C5V6	5.6H		5.43	5.81	5	40	5	900	0.5	1	2.5		
BZX84C6V2	6.2H		6.00	6.39	5	30	5	500	0.5	1	3.0		
BZX84C6V8	6.8H		6.60	7.02	5	25	5	150	0.5	0.5	5.0		
BZX84C7V5	7.5H		7.23	7.66	5	23	5	120	0.5	0.5	6.0		
BZX84C8V2	8.2H		7.96	8.43	5	20	5	120	0.5	0.5	6.5		
BZX84C9V1	9.1H		8.80	9.30	5	18	5	120	0.5	0.5	7.0		
BZX84C10	10H		9.73	10.26	5	15	5	120	0.5	0.5	8.0		
BZX84C11	11H		10.73	11.26	5	15	5	120	0.5	0.5	8.5		
BZX84C12	12H		11.73	12.26	5	15	5	110	0.5	0.5	9.0		
BZX84C13	13H		12.88	13.57	5	15	5	110	0.5	0.5	10		
BZX84C15	15H		14.33	15.11	5	15	5	110	0.5	0.5	11		
BZX84C16	16H		15.80	16.60	5	18	5	150	0.5	0.5	12		
BZX84C18	18H		17.46	18.43	5	20	5	150	0.5	0.5	14		
BZX84C20	20H		19.48	20.46	5	25	5	200	0.5	0.5	15		
BZX84C22	22H		21.48	22.56	5	30	5	200	0.5	0.5	17		
BZX84C24	24H		23.61	24.92	5	40	5	200	0.5	0.5	19		
BZX84C27	27B		26.19	27.53	2	150	2	150	0.5	0.1	21		
BZX84C30	30B		29.19	30.69	2	200	2	200	0.5	0.1	23		
BZX84C33	33B		32.15	33.79	2	250	2	250	0.5	0.1	25		
BZX84C36	36B		35.01	36.87	2	300	2	300	0.5	0.1	27		

Note) : Package Mounted on 99.5% alumina 10 × 8 × 0.6mm.

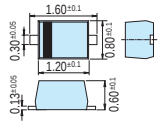
500mW Zener Diode

Type No.	Mark	P _D (mW)	V _Z			I _R (μ A)		Package	Outline (Unit : mm)
			Min.	Max.	I _Z (mA)	Max.	V _R (V)		
USFZ4.3V	43	500	3.9	4.8	10	10	1.0	USF	
USFZ4.7V	47	500	4.3	5.2	10	10	1.0		
USFZ5.1V	51	500	4.6	5.6	10	10	1.5		
USFZ5.6V	56	500	5.1	6.1	10	10	2.5		
USFZ6.2V	62	500	5.6	6.8	10	10	3.0		
USFZ6.8V	68	500	6.2	7.4	10	10	3.5		
USFZ7.5V	75	500	6.8	8.3	10	10	4.5		
USFZ8.2V	82	500	7.4	9.0	10	10	4.9		
USFZ9.1V	91	500	8.2	10.0	10	10	5.5		
USFZ10V	10	500	9.0	11.0	10	10	6.0		
USFZ11V	11	500	9.9	12.1	10	10	7.0		
USFZ12V	12	500	10.8	13.2	10	10	8.0		
USFZ13V	13	500	11.7	14.3	10	10	9.0		
USFZ15V	15	500	13.5	16.5	10	10	10.0		
USFZ16V	16	500	14.4	17.6	10	10	11.0		
USFZ18V	18	500	16.2	19.8	10	10	12.0		
USFZ20V	20	500	18.0	22.0	10	10	14.0		
USFZ22V	22	500	19.8	24.2	10	10	15.0		
USFZ24V	24	500	21.6	26.4	10	10	16.0		
USFZ27V	27	500	24.3	29.7	10	10	19.0		
USFZ30V	30	500	27.0	33.0	10	10	21.0		
USFZ33V	33	500	29.7	36.3	10	10	23.0		
USFZ36V	36	500	32.4	39.6	10	10	25.0		

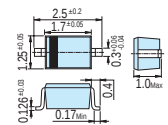
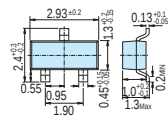
1W Zener Diode

Type No.	Mark	P _D (W)	V _Z		I _R (μA)			Package	Outline (Unit : mm)
			Min.	Max.	I _Z (mA)	Max.	V _R (V)		
SMFZ4.3V	ZZJ	1	4.3	4.8	40	20	1.0	SMF	
SMFZ4.7V	ZZK	1	4.7	5.2	40	20	1.0		
SMFZ5.1V	ZZL	1	5.1	5.7	40	20	1.0		
SMFZ5.6V	ZZM	1	5.6	6.3	40	20	1.5		
SMFZ6.2V	ZZN	1	6.2	7.0	40	20	3.0		
SMFZ6.8V	ZZP	1	6.8	7.7	40	20	3.5		
SMFZ7.5V	ZZQ	1	7.5	8.4	40	20	4.0		
SMFZ8.2V	ZZR	1	8.2	9.3	40	20	5.0		
SMFZ9.1V	ZZS	1	9.1	10.2	40	20	6.0		
SMFZ10V	Z10	1	10.0	11.2	40	10	7.0		
SMFZ11V	Z11	1	11.0	12.3	20	10	8.0		
SMFZ12V	Z12	1	12.0	13.5	20	10	9.0		
SMFZ13V	Z13	1	13.3	15.0	20	10	10.0		
SMFZ15V	Z15	1	14.7	16.5	20	10	11.0		
SMFZ16V	Z16	1	16.2	18.3	20	10	12.0		
SMFZ18V	Z18	1	18.0	20.3	20	10	13.0		
SMFZ20V	Z20	1	20.0	22.4	20	10	15.0		
SMFZ22V	Z22	1	22.0	24.5	10	10	17.0		
SMFZ24V	Z24	1	24.0	27.6	10	10	19.0		
SMFZ27V	Z27	1	27.0	30.8	10	10	21.0		
SMFZ30V	Z30	1	30.0	34.0	10	10	23.0		
SMFZ33V	Z33	1	33.0	37.0	10	10	25.0		
SMFZ36V	Z36	1	36.0	40.0	10	10	27.0		
SMAZ4.3V	ZZJ	1	4.3	4.8	40	20	1.0	SMA	
SMAZ4.7V	ZZK	1	4.7	5.2	40	20	1.0		
SMAZ5.1V	ZZL	1	5.1	5.7	40	20	1.0		
SMAZ5.6V	ZZM	1	5.6	6.3	40	20	1.5		
SMAZ6.2V	ZZN	1	6.2	7.0	40	20	3.0		
SMAZ6.8V	ZZP	1	6.8	7.7	40	20	3.5		
SMAZ7.5V	ZZQ	1	7.5	8.4	40	20	4.0		
SMAZ8.2V	ZZR	1	8.2	9.3	40	20	5.0		
SMAZ9.1V	ZZS	1	9.1	10.2	40	20	6.0		
SMAZ10V	Z10	1	10.0	11.2	40	10	7.0		
SMAZ11V	Z11	1	11.0	12.3	20	10	8.0		
SMAZ12V	Z12	1	12.0	13.5	20	10	9.0		
SMAZ13V	Z13	1	13.3	15.0	20	10	10.0		
SMAZ15V	Z15	1	14.7	16.5	20	10	11.0		
SMAZ16V	Z16	1	16.2	18.3	20	10	12.0		
SMAZ18V	Z18	1	18.0	20.3	20	10	13.0		
SMAZ20V	Z20	1	20.0	22.4	20	10	15.0		
SMAZ22V	Z22	1	22.0	24.5	10	10	17.0		
SMAZ24V	Z24	1	24.0	27.6	10	10	19.0		
SMAZ27V	Z27	1	27.0	30.8	10	10	21.0		
SMAZ30V	Z30	1	30.0	34.0	10	10	23.0		
SMAZ33V	Z33	1	33.0	37.0	10	10	25.0		
SMAZ36V	Z36	1	36.0	40.0	10	10	27.0		

Low Capacitance Zener Diode

Type No.	Mark	P _D (mW)	V _Z (V)			Z _Z (Ω)		Z _{ZK} (Ω)		I _R (μA)		C _T (pF)			Package	Outline (Unit : mm)
			Min.	Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	V _R (V)	Max.	V _R (V)	f (MHz)		
KDZ6.8CE	ZN	150	6.65	6.93	5.0	40	5.0	60	0.5	0.5	3.5	17	0.5	1	ESC	

High Voltage Zener Diode

Type No.	Mark	P _D (mW)	V _Z (V)			Z _Z (Ω)		Z _{ZK} (Ω)		I _R (μA)		Package	Outline (Unit : mm)
			Min.	Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	V _R (V)		
KDZ100VW	AW	200	95.0	105.0	1	700	1	-	-	0.2	76	USC	
KDZ110VW	BW	200	104.5	115.0	1	700	1	-	-	0.2	84		
Z02W100V	10A	200	95.0	105.0	1	700	1	-	-	0.2	76	SOT-23	

Note) : Mounted on a glass epoxy circuit board of 20 × 20mm, pad dimension of 4 × 4mm.

Note) : Bi-directional Zener Diode.

Small Signal Schottky Barrier Diode

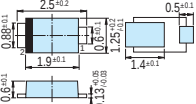
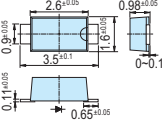
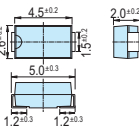
Type No.	Mark		Max. Ratings						V_F (V)		I_R (μ A)		C_T (pF)			Package	Outline (Unit : mm)
			V_{RM} (V)	V_R (V)	I_{FM} (mA)	I_O (mA)	I_{FSM} (A)	P_D (mW)	Max.	I_F (mA)	Max.	V_R (V)	Max.	V_R (V)	f (MHz)		
KDR720EL		R	-	30	-	100	0.5	-	0.37	10	7	10	-	-	-	ELP-2	
KDR730EL		SB	-	30	-	100	0.5	-	0.46	10	0.3	10	-	-	-		
KDR530UL		UL	-	30	-	100	0.5	-	0.5	500	0.5	30	30	1	1	ULP-2	
KDR720UL		SB	-	30	-	100	1	-	0.35	10	10	10	-	-	-		
KDR740UL		SD	40	40	-	200	3	-	0.36	10	10	40	-	-	-		
KDR552F		7	-	25	-	50	0.2	-	0.38	5	0.45	20	2.8	1	1	TFSC	
KDR582F		M	-	5	-	10	0.13	100	0.6	10	0.25	3	0.75	0	1		
KDR720F		R	-	30	-	100	1	-	0.35	10	10	10	-	-	-		
KDR730F		Q	-	30	-	100	0.5	-	0.45	10	0.5	10	-	-	-		
KDR720V		SB	-	30	-	100	1	-	0.35	10	10	10	-	-	-	VSC	
KDR730V		SA	-	30	-	100	0.5	-	0.45	10	0.5	10	-	-	-		
KDR367E		US	15	10	200	100	1	150	0.5	100	20	10	40	0	1	ESC	
KDR368E		U4	20	20	200	100	1	150	0.5	100	20	10	40	10	1		
KDR377E		UV	40	40	150	30	0.2	150	0.55	30	20	40	6 (Typ)	1	1		
KDR720E		UB	-	30	-	200	1	150	0.50	200	30	10	-	-	-		
KDR728E		UT	30	30	150	30	0.2	150	0.55	30	300	30	6.5 (Typ)	1	1		
KDR730E		EB	-	30	-	200	1	150	0.6	200	1	10	-	-	-		
KDR760E		DA	60	60	-	200	1	150	0.60	200	10	10	-	-	-		
KDR357		UL	45	40	200	100	1	200	0.55	100	5	40	30	0	1	USC	
KDR367		US	15	10	200	100	1	200	0.5	100	20	10	40	0	1		
KDR368		U4	20	20	200	100	1	150	0.5	100	20	10	40	10	1		
KDR377		UV	40	40	150	30	0.2	200	0.55	30	20	40	6 (Typ)	1	1		
KDR412		U3	40	20	-	500	3	-	0.5	500	30	10	20	10	1		
KDR729		UM	30	30	300	200	1	200	0.55	200	50	30	50 (Typ)	0	1		
KDR784		UU	30	30	300	100	1	200	0.55	100	15	30	40 (Typ)	1	1		
KDR331V		UW	15	10	100	50	1	100	0.5	50	20	10	40	0	1	VSM	
KDR732E		UZ	30	-	-	70	2	-	0.55	70	5	15	3 (Typ)	10	1	ESM	
KDR411		U3	40	20	-	500	3	-	0.5	500	30	10	20 (Typ)	10	1	USM	
KDR731		UX	-	30	-	70	2	-	0.55	70	5	15	5 (Typ)	10	1		

Note) : Mounted on a glass epoxy circuit board of 20 × 20mm.

Small Signal Schottky Barrier Diode

Type No.		Mark	Max. Ratings						V _F (V)		I _R (μA)		C _T (pF)			Package	Outline (Unit : mm)
			V _{RM} (V)	V _R (V)	I _{FM} (mA)	I _O (mA)	I _{FSM} (A)	P _D (mW)	Max.	I _F (mA)	Max.	V _R (V)	Max.	V _R (V)	f (MHz)		
BAT54		L4	-	30	-	200	0.6	200	0.8	100	2	25	10	1	1	SOT-23	
KDR105S		DL	-	50	-	100	2	-	0.55	100	10	25	7.7 (Typ)	10	1		
KDR411S		U3	40	20	-	500	3	-	0.5	500	30	10	20 (Typ)	10	1		
BAT54C		L43	-	30	-	200	0.6	200	0.8	100	2	25	10	1	1		
KDR393S		R9	40	40	-	100	1	-	0.6	100	5	40	25	0	1		
BAT54S		L44	-	30	-	200	0.6	200	0.8	100	2	25	10	1	1		
KDR731S		UX	-	30	-	70	2	-	0.55	70	5	15	5 (Typ)	10	1		
KDR400S		DJ	40	40	-	500	3	-	0.55	500	50	25	25 (Typ)	10	1		
KDR505S		DM	50	50	-	500	5	-	0.55	500	20	25	22 (Typ)	10	1		
KDR701S		DK	30	30	-	700	5	-	0.55	700	80	30	190	0	1		
BAT54A		L42	-	30	-	200	0.6	200	0.8	100	2	25	10	1	1		
KDR720S		MG	30	30	-	200	1	-	0.55	200	50	30	30 (Typ)	0	1		
KDR721S		MK	30	30	-	200	1	-	0.55	200	50	30	13 (Typ)	10	1		
KDR521T		T2	-	20	-	1A	3	-	0.45	1000	200	20	-	-	-	TSM	
KDR531T		T3	-	30	-	1A	10	-	0.47	1000	500	15	35 (Typ)	10	1		

Power Schottky Barrier Diode

Type No.		Mark	Max. Ratings			V _{FM} (V)		I _{RRM} (mA)		Package	Outline (Unit : mm)
			V _{RRM} (V)	I _O (A)	I _{FSM} (A) (60Hz)	Max.	I _{FM} (A)	Max.	V _R (A)		
USFB13		A3	30	1	5	0.47	1	0.2	30	USF	
USFB13A		BA	30	1	22	0.52	1	0.05	30		
USFB13L		BB	30	1	22	0.39 (Typ)	1	1.0	30		
USFB14		SA	40	1	5	0.55	0.7	0.05	40		
USFB053		53	30	0.5	5	0.39	0.5	0.2	30		
SMFB13		B13	30	1	22	0.42	1	1.0	30	SMF	
SMFB16		S16	60	1	30	0.55	1	0.05	60		
SMFB23L		23L	30	1.5	33	0.36	1.5	1.0	30		
SMFB23		B23	30	2	33	0.42	2	1.0	30		
SMFB14		B14	40	1	22	0.50	1	1.0	40		
SMFB13L		13L	30	1	2	0.36	1	0.7	20		
SMAB13		B13	30	1	40	0.42	1	1.0	30	SMA	
SMAB33		B33	30	3	70	0.45	3	2.0	30		
SMAB33L		B33L	30	3	70	0.36	3	2.0	30		
SMAB14		B14	40	1	40	0.5	1	1.0	40		
SMAB34		B34	40	3	70	0.52	3	2.0	40		
SMAB16		B16	60	1	30	0.58	1	1.0	60		
SMAB36		B36	60	3	70	0.6	1	2.0	60		
SMAB110		B110	100	1	30	0.8	1	1.0	100		
SMAB210		B210	100	2	50	0.8	2	1.0	100		

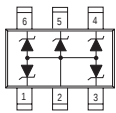
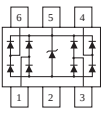
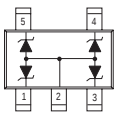
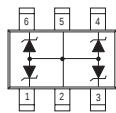
Power Schottky Barrier Diode

Type No.		Max. Ratings			V _{FM} (V)		I _{RRM} (mA) (V _{RRM} =Rated)	trr (ns)			R _{th} (j-c) (°C/W)	Package	Outline (Unit : mm)
		V _{RM} (V)	I _O (A)	I _{FSM} (A)	Max (IC=25 °C)	I _{FM} (A)	Max.	Max.	I _{FM} (A)	di/dt (A/μs)	Max.		
MBRD5U100D		100	5	90	0.8	5	0.05	-	-	-	5	DPAK(1)	
MBRD5U200D		200	5	90	0.95	5	0.05	-	-	-	5		
MBRD6U60CT		60	6	45	0.65	3	0.05	35	1	-30	6		
MBRD10U60CT		60	10	45	0.75	5	0.05	35	1	-30	6		
MBRD10U100CT		100	10	45	0.85	5	0.05	35	1	-30	6		
MBRD10U200CT		200	10	45	0.95	5	0.05	35	1	-30	6		
MBRD5U150		150	5	125	0.9	5	0.1	35	1	-30	5		
MBRD10U150		150	10	150	0.9	10	0.1	35	1	-30	5		
MBRF10U45CTA		45	10	100	0.7	5	0.1	35	1	-30	4.5	TO-220IS(1)	
MBRF10U60CTA		60	10	100	0.75	5	0.05	35	1	-30	4.5		
MBRF10U100CTA		100	10	100	0.85	5	0.05	35	1	-30	4.5		
MBRF10U150CTA		150	10	130	0.9	5	0.05	35	1	-30	4.5		
MBRF10U200CTA		200	10	100	0.95	5	0.05	35	1	-30	4.5		
MBRF15U45CTA		45	15	150	0.7	7.5	0.1	35	1	-30	4.0		
MBRF20U45CTA		45	20	250	0.7	10	0.1	35	1	-30	4.0		
MBRF20U60CTA		60	20	250	0.75	10	0.05	35	1	-30	3.5		
MBRF20U100CTA		100	20	100	0.85	10	0.05	-	-	-	3.5		
MBRF20U150CTA		150	20	180	0.9	10	0.05	35	1	-30	3.5		
MBRF20U200CTA		200	20	120	0.95	10	0.05	35	1	-30	3.5		
MBRF30U45CTA		45	30	350	0.7	15	0.1	35	1	-30	3.5		
MBRF30U60CTA		60	30	350	0.75	15	0.05	35	1	-30	3.0		
MBRF30U100CTA		100	30	350	0.85	15	0.05	35	1	-30	3.0		
MBRF10U200		200	10	100	0.95	10	0.1	35	1	50	4.5	TO-220IS (2pin)	
MBRF20U200		200	20	120	0.95	20	0.1	35	1	50	3.5		
MBRJ15U50		50	15	200	0.56	15	3	35	1	-30	4.0	TO-277	

Electrical Characteristics		Single or Dual Type												
		ELP-2		ELP-2A	TFSC		ULP-2		VSC		ESC		ESM	
														
V_{RWM} [V]	P_{PK} [W]	0.6*0.3mm		0.6*0.3mm		0.8*0.6mm		1.0*0.6mm		1.0*0.6mm		1.2*0.8mm		1.6*0.85mm
2.8	400													
3	50	PG03ESEL2				PG03DBTFC		PG03BBUL2		PG03DBVSC	PG03FSESC	PG03FBESC		
	80				PG03FSTFC				PG03FSVSC					
5	30		PG05DBEL2	PG05DBEL2A							PG05BSESC ^{LOW}			
	50	PG05ESEL2				PG05DBTFC				PG05DBVSC		PG05FBESC		
	60													PG05EAESM
	80				PG05FSTFC				PG05FSVSC					
	100						PG05ESUL2	PG05IBUL2A ^{LOW} PG05TRUL2A ^{LOW}			PG05FSESC			
	200						PG05GSUL2							
	300													
	350													
7	400													
12	300	PG12ESEL2												
	350													
	400													
15	350													
22	1500													
24	350													
36	700													
48	700													

Note) □ ^{LOW} : Low Capacitance Device (5pF), ** = tp = 10/1000μs

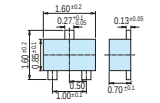
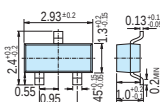
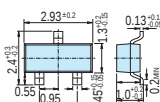
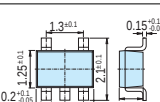
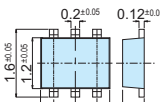
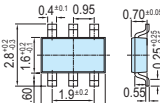
Single or Dual Type									
USC		USCF	USM	SOT-23					SMA
1.7*1.25mm		1.7*1.25mm	2.0*1.25mm	2.93*1.3mm					4.5*2.6mm
							PG2.8CUS23		
			PG05BAUSM LOW						
				PG05EAS23					
								PG05BUS23 LOW	
PG05HSUSC	PG05GBUSC	PG05HSUSCF		PG05HAS23					
					PG712FBS23				
								PG12BUS23 LOW	
PG12GSUSC	PG12FBUSC			PG12GAS23		PG12GCS23			
					PG712FBS23				
PG15GSUSC	PG15FBUSC								
									PG22KSSMA
PG24FSUSC PG24GSUSC	PG24EBUSC			PG24FAS23					
PG36FSUSC									
PG48FSUSC									

Electrical Characteristics		Array Type			
		TES6	US6	USV	TS6
					
$V_{RWM}[V]$	$P_{PK}[W]$	1.6*1.2mm	2.0*2.1mm	2.0*2.1mm	2.9*1.6mm
3	150	PG03GXTE6			
5	45		PG05AVUS6		
	150	PG05GXTE6			
	200			PG05GBUSV	
	350				PG05HBTS6
12	150	PG12FXTE6			
24	350				PG24FBTS6

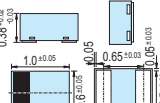
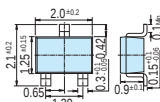
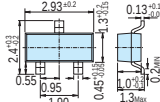
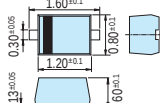
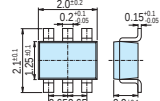
General Purpose TVS

Type No.	Mark	Max. Ratings		V_{RWM}	V_{BR} (V)			V_C (V)			C_j (pF)			Package	Outline (Unit : mm)
		P_{PK} (W)	I_{PP} (A)		Max.	Min.	I_t (mA)	Max.	I_{PP} (A)	t_p (μ s)	Max.	V_R (V)	f (MHz)		
PG03ESEL2		J	50	5	3.3	4.2	1	10	5	8/20	50	0	1	ELP-2	
PG05ESEL2		K	50	5	5	6	1	10	5	8/20	50	0	1		
PG12ESEL2		A	80	3	12	13.3	1	27	3	8/20	50	0	1		
PG05DBEL2		6	30	2	5	5.8	1	15	2	8/20	9	0	1		
PG05DBEL2A		B	30	2	5	5.8	1	15	2	8/20	9	0	1	ELP-2A	
PG05FSUL2		5P	100	10	5	6	1	10	10	8/20	80	0	1	ULP-2	
PG05GSUL2		TA	200	16	5	6	1	12.5	16	8/20	160	0	1		
PG03FSTFC		D1	80	5	3.3	4.2	1	16	5	8/20	80	0	1	TFSC	
PG05FSTFC		E1	80	5	5	6	1	16	5	8/20	70	0	1		
PG03DBTFC		T	50	5	3.3	4.2	1	17	5	8/20	25	0	1		
PG05DBTFC		6	50	5	5	5.8	1	17	5	8/20	25	0	1		
PG03FSVSC		5B	80	5	3.3	4.2	1	16	5	8/20	80	0	1	VSC	
PG05FSVSC		5S	80	5	5	6	1	16	5	8/20	70	0	1		
PG03DBVSC		3B	50	5	3.3	4.2	1	17	5	8/20	25	0	1		
PG05DBVSC		5B	50	5	5	5.8	1	17	5	8/20	25	0	1		
PG03FSESC		3S	50	5	3.3	4	1	10.9	5	8/20	100	0	1	ESC	
PG05FSESC		5S	100	10	5	6	1	9.8	5	8/20	80	0	1		
PG03FBESC		3B	50	5	3.3	4.2	1	10.9	5	8/20	80	0	1		
PG05FBESC		5B	50	5	5	5.8	1	9.8	5	8/20	60	0	1		
PG05HSUSC		5H	350	24	5	6	1	14.5	24	8/20	350	0	1	USC	
PG12GSUSC		L	350	15	12	13.8	1	25	15	8/20	150	0	1		
PG15GSUSC		SD	350	12	15	16.7	1	29	12	8/20	150	0	1		
PG24FSUSC		4F	350	8	24	26.7	1	45	8	8/20	88	0	1		
PG24GSUSC		T	350	8	24	27.2	1	45	8	8/20	200	0	1		
PG36FSUSC		6F	700	8	36	42	1	87.5	8	8/20	100	0	1		
PG48FSUSC		8F	700	7	48	55	1	100	7	8/20	100	0	1		
PG05GBUSC		5G	350	24	5	6	1	14.5	24	8/20	200	0	1	USCF	
PG12FBUSC		2	350	15	12	13.8	1	25	15	8/20	100	0	1		
PG15FBUSC		BD	350	12	15	16.7	1	29	12	8/20	75	0	1		
PG24EBUSC		4E	350	8	24	27.2	1	45	8	8/20	50	0	1		
PG05HSUSCF		DF	350	24	5	6	1	14.5	24	8/20	350	0	1	USCF	
PG10HSUSF		HS	1000	43	10	12	1	24	43	8/20	500	0	1	USF	
PG22KSSMA		22S	1500	42.3	22	24.4	1	35.5	42.3	8/20	1000	0	1	SMA	

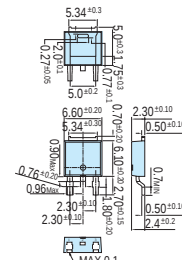
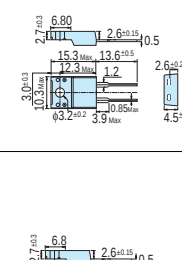
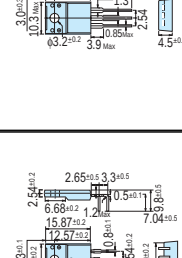
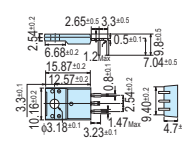
General Purpose TVS

Type No.		Mark	Max. Ratings		V_{RWM}	V_{BR} (V)		V_C (V)			C_j (pF)			Package	Outline (Unit : mm)
			P_{PK} (W)	I_{PP} (A)		Max.	Min.	I_t (mA)	Max.	I_{PP} (A)	t_p (μ s)	Max.	V_R (V)	f (MHz)	
PG05EAESM		EA	60	6.7	5	6.46	5	17	5	8/20	40	0	1	ESM	
PG05HAS23		5HA	350	24	5	6	1	14.5	24	8/20	400	0	1	SOT-23	
PG05EAS23		AS	85	5	5	6.46	5	17	5	8/20	40	0	1		
PG12GAS23		12G	350	15	12	13.3	1	25	15	8/20	150	0	1		
PG24FAS23		24F	350	8	24	26.7	1	43.5	8	8/20	60	0	1		
PG12GCS23		12	350	15	12	13.3	1	25	15	8/20	120	0	1	SOT-23	
PG712FBS23		712	400	17	7, 12	7.5, 13.3	1	12, 26	17	8/20	75	0	1		
PG28CUS23		2P8	400	24	2.8	40	1	15	24	8/20	100	0	1		
PG05GBUSV		5B	200	24	5	6	1	12.5	24	8/20	175	0	1	USV	
PG03GXTE6		3X	150	15	3.3	4.2	1	10.9	15	8/20	120	0	1	TES6	
PG05GXTE6		5X	150	10	5	6.3	1	14.5	10	8/20	100	0	1		
PG12FXTE6		2X	150	6	12	13.3	1	25	6	8/20	60	0	1		
PG05HBTS6		5H	350	24	5	6.3	1	15	24	8/20	350	0	1	TS6	
PG24FBTS6		4F	350	8	24	27	1	44	8	8/20	75	0	1		

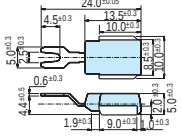
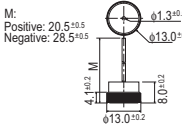
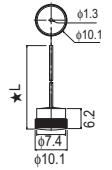
Low Cap TVS

Type No.		Mark	Max. Ratings		V_{RWM}	V_{BR} (V)		V_C (V)			C_j (pF)			Package	Outline (Unit : mm)
			P_{PK} (W)	I_{PP} (A)		Max.	Min.	I_t (mA)	Max.	I_{PP} (A)	t_p (μ s)	Max.	V_R (V)	f (MHz)	
PG05TBUL2		TK	100	4	5	7	1	25	4	8/20	0.5	0	1	ULP-2	
PG05TBUL2A		TS	100	4	5	7	1	25	4	8/20	0.6	0	1		
PG03BBUL2		-	40	5	3.3	-	-	8	5	8/20	5	0	1		
PG05BAUSM		BA	30	1.6	5	6.65	5	18	1.6	8/20	5	0	1	USM	
PG05BUS23		5BU	300	24	5	6	1	14.5	24	8/20	5	0	1	SOT-23	
PG12BUS23		12B	300	15	12	13.3	1	25	15	8/20	5	0	1		
PG05BSESC		D2	30	1.6	5	6.65	5	12	1	8/20	5	0	1	ESC	
PG05AVUS6		LC	150	6	5	6	1	25	6	8/20	2.5	0	1	US6	

Ultra Fast Recovery Rectifier Diode

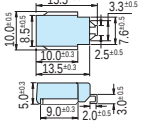
ype No.		Mark	Max. Ratings				V _{FM} (V)		I _{RM} (μA)		trr (ns)			Package	Outline (Unit : mm)
			V _{RM} (V)	I _O (A)	I _{FSM} (A) (50Hz)	I _{FSM} (A) (60Hz)	Max.	I _{FM} (A)	Max.	V _R (V)	Max.	I _F (mA)	I _R (mA)		
U10A6CDC		U10A6CDC	600	10	-	100	1.7	5	30	600	35	1000	1000	DPAK(1)	
U5A6CD		U5A6CD	600	5	-	100	1.7	5	30	600	35	1000	1000		
U8A6CD		U8A6CD	600	8	-	100	1.8	8	30	600	35	1000	1000		
U5A6CI		U5A6CI	600	5	-	100	1.7	5	30	600	35	1000	1000	TO-220IS(2P)	
U8A6CI		U8A6CI	600	8	-	100	1.8	8	30	600	35	1000	1000		
U10A6CI		U10A6CI	600	10	-	100	2	10	30	600	35	1000	1000		
U10A2CIC		U10A2CIC	200	10	50	60	0.98	5	10	200	50	100	100	TO-220IS	
U10A3CIC		U10A3CIC	300	10	50	60	1.3	5	10	300	60	100	100		
U10A6CIC		U10A6CIC	600	10	-	100	1.7	5	30	600	35	1000	1000		
U20A3CFC		U20A3CFC	300	20	-	100	1.3	10	10	300	25	500	1000		
U20A3CIC		U20A3CIC	300	20	50	60	1.3	10	10	300	25	500	1000		
U20A4CIC		U20A4CIC	400	20	50	60	1.6	10	10	400	50	100	100		
U20A6CIC		U20A6CIC	600	20	-	100	2	10	30	600	35	1000	1000		
U20A3CFC		U20A3CFC	300	20	-	100	1.3	10	10	300	25	500	1000	TO-220IS(1)	

Alternator Diode

Type No.	Polarity	Max. Ratings					Package	Outline (Unit: mm)
		V _R (V)	I _O (A)	I _{FM} (A)	R _{th} (/W)	V _{FM} (V)		
E25A2CS	+	200	25	250	1	1.2	MR	
E25A2CR	-	200	25	250	1	1.2		
E30A2CS	+	200	30	350	1	1.2		
E30A2CR	-	200	30	350	1	1.2		
E30A23VS	+	23 ± 3	30	350	1	1.2		
E30A23VR	-	23 ± 3	30	350	1	1.2		
E35A2CS	+	200	35	450	1	1.05		
E35A2CR	-	200	35	450	1	1.05		
E50A2CS	+	200	50	600	1	1.05		
E50A2CR	-	200	50	600	1	1.05		
E35A23VS	+	23 ± 3	35	450	1	1.05		
E35A23VR	-	23 ± 3	35	450	1	1.05		
E50A23VS	+	23 ± 3	35	600	1	1.05		
E50A23VR	-	23 ± 3	35	600	1	1.05		
E35A2CBS	+	200	35	300	0.8	1.1	B-PF	 M: Positive: 20.5^{+0.5} Negative: 26.5^{+0.5}
E35A2CBR	-	200	35	300	0.8	1.1		
E35A21VBS	+	21 ± 2	35	300	0.8	1.1		
E35A21VBR	-	21 ± 2	35	300	0.8	1.1		
E35A23VBS	+	23 ± 3	35	300	0.8	1.1		
E35A23VBR	-	23 ± 3	35	300	0.8	1.1		
E35A27VBS	+	27 ± 3	35	300	0.8	1.1		
E35A27VBR	-	27 ± 3	35	300	0.8	1.1		
E35A37VBS	+	37 ± 3	35	300	0.8	1.15		
E35A37VBR	-	37 ± 3	35	300	0.8	1.15		
E50A2CBS	+	200	50	380	0.6	1.05		
E50A2CBR	-	200	50	380	0.6	1.05		
E50A23VBS	+	23 ± 3	50	380	0.6	1.05		
E50A23VBR	-	23 ± 3	50	380	0.6	1.05		
E50A37VBS	+	37 ± 3	50	380	0.6	1.1		
E50A37VBR	-	37 ± 3	50	380	0.6	1.1		
E35A27VBCS	+	27 ± 3	35	300	0.8	1.1	C-PF	 ★ L
E35A27VBCR	-	27 ± 3	35	300	0.8	1.1		

Note) L : Flexible length

Power Zener Diode (Surge Absorber)

Type No.	Max. Ratings	V_Z (V)			Z_Z (Ω)		I_R (μ A)		V_C (V)		Package	Outline (Unit : mm)
	P_D (W)	Min.	Max.	I_Z (mA)	Max.	I_Z (mA)	Max.	V_R (V)	Max.	I_{RSM} (A)		
Z4W27V	4	24	30	10	30	10	10	22	40	40	DO-218	
Z4W37V	4	34	40	10	30	10	10	32	53	40		
Z5W27V	5	24	30	10	30	10	10	22	40	55		
Z5W37V	5	34	40	10	30	10	10	32	53	55		
Z5W48V	5	43.2	52.8	10	30	10	10	38.4	66	55		
Z6W27V	6	24	30	10	30	10	10	22	40	60		
Z8W27V	8	24	30	10	30	10	10	22	40	70		

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
02CZ2.0	Toshiba	Z02W2.0V	02DZ7.5	Toshiba	KDZ7.5V	DZD6.8	Sanyo	Z02W6.8V	MA3043	Panasonic	Z02W4.3V
02CZ2.2	Toshiba	Z02W2.2V	02DZ8.2	Toshiba	KDZ8.2V	DZD7.5	Sanyo	Z02W7.5V	MA3047	Panasonic	Z02W4.7V
02CZ2.4	Toshiba	Z02W2.4V	02DZ9.1	Toshiba	KDZ9.1V	DZD8.2	Sanyo	Z02W8.2V	MA3051	Panasonic	Z02W5.1V
02CZ2.7	Toshiba	Z02W2.7V	1S2836	NEC	KDS181	DZD9.1	Sanyo	Z02W9.1V	MA3056	Panasonic	Z02W5.6V
02CZ3.0	Toshiba	Z02W3.0V	1S2838	NEC	KDS184	DZD10	Sanyo	Z02W10V	MA3062	Panasonic	Z02W6.2V
02CZ3.3	Toshiba	Z02W3.3V	1SS123	NEC	KDS226	DZD11	Sanyo	Z02W11V	MA3068	Panasonic	Z02W6.8V
02CZ3.6	Toshiba	Z02W3.6V	1SS181	Toshiba	KDS181	DZD12	Sanyo	Z02W12V	MA3075	Panasonic	Z02W7.5V
02CZ3.9	Toshiba	Z02W3.9V	1SS184	Toshiba	KDS184	DZD13	Sanyo	Z02W13V	MA3082	Panasonic	Z02W8.2V
02CZ4.3	Toshiba	Z02W4.3V	1SS187	Toshiba	KDS187	DZD15	Sanyo	Z02W15V	MA3091	Panasonic	Z02W9.1V
02CZ4.7	Toshiba	Z02W4.7V	1SS193	Toshiba	KDS193	DZD16	Sanyo	Z02W16V	MA3100	Panasonic	Z02W10V
02CZ5.1	Toshiba	Z02W5.1V	1SS196	Toshiba	KDS196	DZD18	Sanyo	Z02W18V	MA3110	Panasonic	Z02W11V
02CZ5.6	Toshiba	Z02W5.6V	1SS220	NEC	KDS193	DZD20	Sanyo	Z02W20V	MA3120	Panasonic	Z02W12V
02CZ6.2	Toshiba	Z02W6.2V	1SS222	NEC	KDS187	DZD22	Sanyo	Z02W22V	MA3130	Panasonic	Z02W13V
02CZ6.8	Toshiba	Z02W6.8V	1SS226	Toshiba	KDS226	DZD24	Sanyo	Z02W24V	MA3150	Panasonic	Z02W15V
02CZ7.5	Toshiba	Z02W7.5V	1SS300	Toshiba	KDS120	HSM123	Renesas	KDS226	MA3160	Panasonic	Z02W16V
02CZ8.2	Toshiba	Z02W8.2V	1SS301	Toshiba	KDS121	HSM221	Renesas	KDS193	MA3180	Panasonic	Z02W18V
02CZ9.1	Toshiba	Z02W9.1V	1SS312	Toshiba	KDS112	HSM223	Renesas	KDS187	MA3200	Panasonic	Z02W20V
02CZ10	Toshiba	Z02W10V	1SS314	Toshiba	KDS114	HSM2836	Renesas	KDS181	MA3220	Panasonic	Z02W22V
02CZ11	Toshiba	Z02W11V	1SS318	Rohm	KDS114	HSM2838	Renesas	KDS184	MA3240	Panasonic	Z02W24V
02CZ12	Toshiba	Z02W12V	1SV149	Toshiba	KDV149	HZM5A	Renesas	Z02W4.3V	MMBZ5229B	Onsemi	Z02W4.3V
02CZ13	Toshiba	Z02W13V	1SV153	Toshiba	KDV153	HZM5B	Renesas	Z02W4.7V	MMBZ5230B	Onsemi	Z02W4.7V
02CZ15	Toshiba	Z02W15V	1SV172	Rohm	KDV173	HZM5C	Renesas	Z02W5.1V	MMBZ5231B	Onsemi	Z02W5.1V
02CZ16	Toshiba	Z02W16V	DA116	Rohm	KDS187	HZM6A	Renesas	Z02W5.6V	MMBZ5232B	Onsemi	Z02W5.6V
02CZ18	Toshiba	Z02W18V	DA119	Rohm	KDS196	HZM6C	Renesas	Z02W6.2V	MMBZ5234B	Onsemi	Z02W6.2V
02CZ20	Toshiba	Z02W20V	DA204K	Rohm	KDS226	HZM7A	Renesas	Z02W6.8V	MMBZ5235B	Onsemi	Z02W6.8V
02CZ22	Toshiba	Z02W22V	DAN202K	Rohm	KDS184	HZM7C	Renesas	Z02W7.5V	MMBZ5236B	Onsemi	Z02W7.5V
02CZ24	Toshiba	Z02W24V	DAN202U	Rohm	KDS121	HZM9A	Renesas	Z02W8.2V	MMBZ5237B	Onsemi	Z02W8.2V
02DZ2.0	Toshiba	KDZ2.0V	DAN209S	Rohm	KDS201	HZM9B	Renesas	Z02W9.1V	MMBZ5239B	Onsemi	Z02W9.1V
02DZ2.2	Toshiba	KDZ2.2V	DAP202K	Rohm	KDS181	HZM11A	Renesas	Z02W10V	MMBZ5240B	Onsemi	Z02W10V
02DZ2.4	Toshiba	KDZ2.4V	DAP202U	Rohm	KDS120	HZM11B	Renesas	Z02W11V	MMBZ5241B	Onsemi	Z02W11V
02DZ2.7	Toshiba	KDZ2.7V	DCA010	Sanyo	KDS181	HZM12A	Renesas	Z02W12V	MMBZ5242B	Onsemi	Z02W12V
02DZ3.0	Toshiba	KDZ3.0V	DCB010	Sanyo	KDS184	HZM12B	Renesas	Z02W13V	MMBZ5243B	Onsemi	Z02W13V
02DZ3.3	Toshiba	KDZ3.3V	DCC010	Sanyo	KDS226	HZM15	Renesas	Z02W15V	MMBZ5245B	Onsemi	Z02W15V
02DZ3.6	Toshiba	KDZ3.6V	DSA010	Sanyo	KDS187	HZM16	Renesas	Z02W16V	MMBZ5246B	Onsemi	Z02W16V
02DZ3.9	Toshiba	KDZ3.9V	DSB010	Sanyo	KDS193	HZM18	Renesas	Z02W18V	MMBZ5248B	Onsemi	Z02W18V
02DZ4.3	Toshiba	KDZ4.3V	DSD010	Sanyo	KDS196	HZM20	Renesas	Z02W20V	MMBZ5250B	Onsemi	Z02W20V
02DZ4.7	Toshiba	KDZ4.7V	DZD4.3	Sanyo	Z02W4.3V	HZM22	Renesas	Z02W22V	MMBZ5251B	Onsemi	Z02W22V
02DZ5.1	Toshiba	KDZ5.1V	DZD4.7	Sanyo	Z02W4.7V	HZM24	Renesas	Z02W24V	MMBZ5252B	Onsemi	Z02W24V
02DZ5.6	Toshiba	KDZ5.6V	DZD5.1	Sanyo	Z02W5.1V	MA151K	Panasonic	KDS193	SVC321SPA	Sanyo	KDV149
02DZ6.2	Toshiba	KDZ6.2V	DZD5.6	Sanyo	Z02W5.6V	MA151WA	Panasonic	KDS181			
02DZ6.8	Toshiba	KDZ6.8V	DZD6.2	Sanyo	Z02W6.2V	MA151WK	Panasonic	KDS184			

SBD

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
1SS357	Toshiba	KDR357	D1FH3	Shindengen	SMAB33	SB01-05CP	Sanyo	KDR105S	SS14	GS	SMAB14
1SS378	Toshiba	KDR378	MA729	Panasonic	KDR729	SFPA-53	Sanken	SMAB13	SS16	Fairchild	SMAB16
B130	Liteon	SMAB13	MBRA130LT3	Onsemi	SMAB13	SFPA-73	Sanken	SMAB33	SS16	GS	SMAB16
B130B	Liteon	SMAB13	MBRA140LT3	Onsemi	SMAB14	SFPB-54	Sanken	SMAB14	U1FWJ44L	Toshiba	SMAB13
B140	Liteon	SMAB14	RB053L-30	Rohm	SMAB33	SFPJ-53	Sanken	SMAB13	U1FWJ44M	Toshiba	SMAB13
B140B	Liteon	SMAB14	RB060L-40	Rohm	SMAB34	SFPJ-73	Sanken	SMAB33	U1FWJ44N	Toshiba	SMAB13
B160	Liteon	SMAB16	RB160L-40	Rohm	SMAB14	SPB-G34S	Sanken	SMAB34	U1GWJ44	Toshiba	SMAB14
B160B	Liteon	SMAB16	RB160L-60	Rohm	SMAB16	SS13	Fairchild	SMAB13			
B330A	Liteon	SMAB33	RB751S-40	Rohm	KDR377E	SS13	GS	SMAB13			
B340A	Liteon	SMAB34	SB007T03Q	Sanyo	KDR731	SS14	Fairchild	SMAB14			

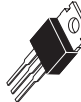
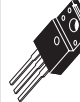
FRD

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
10DL2CZ47A	Toshiba	U10A2CIC	ESAC25M-02N	Fuji	F1B2CAI	FMU-22S	Sanken	F1B2CCI	US1G	Liteon	SMAU1G
1SR56-400	Rohm	SMAU1G	FMG-22S	Sanken	U10A2CIC	FMX-22S	Sanken	U10A2CIC	US1G	GS	SMAU1G
D1FL40	Shindengen	SMAU1G	FML-22S	Sanken	U10A2CIC	SE10LC20U	Shindengen	U10A2CIC	US1J	Liteon	SMAU1J
ESAC25M-02C	Fuji	F1B2CCI	FMU-22R	Sanken	F1B2CAI	U1GU44	Toshiba	SMAU1G	US1J	GS	SMAU1J

TVS

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
PSD03	Semtech	PG03JSUSC	SMS05	Semtech	PG05HBTS6	SD12C	Semtech	PG12FBUSC	SMS24	Semtech	PG24FBTS6
SD05	Semtech	PG05HSUSC	PSMS05	Protek		PSD12C	Protek		PSMS24	Protek	
PSD05	Protek		MSQA6V1W5T2	Onsemi	PG05GBUSV	SM12	Semtech		SL24	Semtech	PG24BUS23
SL05	Semtech	PG05BUS23	RSA6.1EN	Rohm		MMBZ15VALT1	Onsemi	PG12GAS23	PSOT24LC	Protek	
PSOT05LC	Protek		SM05	Semtech		MMBZ15VDA	GS		SD024C	Semtech	PG24EBUSC
SD05C	Semtech	PG05GBUSC	PSOT05C	Protek	PG05HAS23	SDC15	Semtech		SM24	Semtech	
PSD05C	Protek		MMBZ6V8ALT1	Onsemi		MMBZ15VDT1	Onsemi	PG12GCS23	PSOT24C	Protek	PG24FAS23
SMF05	Semtech		SM05	Micro Semi		MMBZ15VDC	GS		SM24	Micro Semi	
PSMF05	Protek	PG05GBUSV	SL12	Semtech	PG12BUS23	SD12	Semtech	PG12GSUSC	MMBZ27VDA	GS	
GMF05	Vishay		PSOT12LC	Protek		PSD12	Protek				

$V_{DS} : 20V \sim 100V$

V_{DS} [V]	I_D [A]	ULP-3	VSM	ESM	TES6	USM	US6	SOT-23	PDFN56	SOT-223	DDPAK(1)	TO-220AB	TO-220F
		 (1.0 X0.6)	 (1.2 X0.8)	 (1.60X0.85)	 (1.6 X1.2)	 (2.0X1.25)	 (2.0X1.25)	 (2.93X1.3)	 (5.75X5.1)	 (6.5X3.5)	 (6.6X8.1)		
20	0.4	*KML0D4N20UL3	KML0D4N20V	KML0D4N20E									
	0.6												
	1	*KML1D0N20UL3											
	3							KMA3D0N20SA					
	3.6							KMA3D6N20SA					
	6.5												
	7												
-20	-0.3		KML0D3P20V										
	-0.4	*KML0D4P20UL3		KML0D4P20E									
	-2.4							KMA2D4P20SA					
	-3.7							KMA3D7P20SA					
30	0.05			KTK5131E									
			KTK5132V	KTK5132E		KTK5132U		KTK5132S					
	0.1				KTK7132E								
	0.15							KTK5133S					
	0.2							KTK5134S					
	4							KMB4D0N30SA					
	4.2							*KMD4D2N30S					
	6							*KMD6D0N30C					
-30	-0.05		KTJ6131V	KTJ6131E									
	-3							KMB3D0P30SA					
	-7.1												
	-8												
	-10												
	-14												
40	3.5							KMB3D5N40SA					
60	0.1							KTK5162S					
	0.2							KTK5164S					
	0.3			*2N7002KE		*2N7002KU	*2N7002KDU	2N7002KA					
	2							KMB2D0N60SA					
	4.5												
	8.2												
75	160												
100	130												
	1.7									KU3600N10W			
	2								*KU3000N10CZ				
	5										KU3600N10D		
	23												KU310N10F
	27										KU310N10D		
	34											KU310N10P	
	50												KU086N10F
	95											KU086N10P	

Note) * : Under development

V_{DSS} : 200V ~ 800V

V _{DSS} [V]	I _D [A]	ESM	USM	US6	SOT-23	SOT-223	DPAK(1)	TO-92L	IPAK(1)	TO-220AB	TO-220IS(1)
		 (1.60X0.85)	 (2.0X1.25)	 (2.0X1.25)	 (2.93X1.3)	 (6.5X3.5)	 (6.6X6.1)				
200	1					KF4N20LW					
	3.6						KF4N20LD		KF4N20LI		
	15						*KF19N20D				
	19										*KF19N20F
250	7.5						KF9N25D				
	9										KF9N25F
	13						*KF16N25D				
	16										*KF16N25F
400	2					KF3N40W					
	2.2						KF3N40D		KF3N40I		
	4.3						*KF5N40D				
	6.5						KF9N40D				
500 (525)	2.5						KF3N50DZ		KF3N50IZ		
	3										KF3N50FZ/FS
	4.3						KF5N50DZ		KF5N50IZ		
							KF5N50DS				
							KF5N53DS(525V)				
	5									KF5N50PZ	KF5N50FZA
											KF5N50FSA
	5.5						KF7N50D		KF7N50I		KF5N53FS(525V)
	7									KF7N50P	KF7N50F
	9									KF9N50P	KF9N50F
	11									KF11N50P	KF11N50F
	13									KF13N50P	KF13N50F
600	0.5							KF1N60L			
	0.7							KF2N60L			
	1						KF1N60D		KF1N60I		
	2						KF2N60D		KF2N60I		KF2N60F
	2.3						KF3N60D		KF3N60I		
	3										KF3N60F
	3.2						KF4N60D		KF4N60I		
	3.5						KF5N60D		KF5N60I		
	4.0										KF4N60F
	4.5									KF5N60P	KF5N60F
	5.0						KF6N60D		KF6N60I		
	6										KF6N60F
	7									KF7N60P	KF7N60F
	8									KF8N60P	KF8N60F
650	3.6									KF4N65P	KF4N65F/FM
	4.4						KF5N65D		KF5N65I		
	5										KF5N65F
	7									KF7N65P	KF7N65F/FM
680	10										KF10N65F
	12										KF12N65F
	15										KF15N65F
700	1						*KF1N70D		*KF1N70I		
	2						*KF2N70D		*KF2N70I		
	5.2								KF6N70I		
	6										KF6N70F
	10										*KF10N70F
800	2.7						KF3N80D		KF3N80I		
	3										KF3N80F
	4										KF4N80F
	7										KF7N80F

(Note) * : Under development

S - MOSFET

Type No.	Mark	Internal circuit (Top view)	Max. Ratings				I _{DSS} (μA)		V _{th} (V)				R _{DS(ON)} (Ω)				Package	Outline (Unit: mm)
			V _{DS} (V)	V _{GSS} (V)	I _D (mA)	P _D (mW)	Max.	V _{DS} (V)	V _{GS} (V)	Min.	Max.	V _{DS} (V)	I _D (mA)	Max.	V _{GS} (V)	I _D (mA)		
KTK5131E	KA		30	± 20	100	100	1	30	0	0.5	1.5	3	0.1	7	2.5	10	ESM	
KTK5132V	KB		30	± 20	100	100	1	30	0	0.5	1.5	3	0.1	7	2.5	10	VSM	
KTK5132E	KB		30	± 20	100	100	1	30	0	0.5	1.5	3	0.1	7	2.5	10	ESM	
KTK7132E	AL		30	± 20	100	200	1	30	0	0.5	1.5	3	0.1	7	2.5	10	TES6	
KTK5132U	KB		30	± 20	100	200	1	30	0	0.5	1.5	3	0.1	7	2.5	10	USM	
KTK5132S	KB		30	± 20	100	200	1	30	0	0.5	1.5	3	0.1	7	2.5	10	SOT-23	
KTK5133S	KC		30	± 20	150	200	1	30	0	0.5	1.5	3	0.1	5.2	2.5	40	SOT-23	
KTK5134S	KD		30	± 20	200	200	1	30	0	0.5	1.5	3	0.1	2	2.5	50	SOT-23	
KTK5162S	KF		60	± 20	100	200	1	60	0	1	2.4	10	0.1	7.5	10	50	SOT-23	
KTK5164S	KM		60	± 20	200	200	1	60	0	0.5	1.5	10	1	2.0	2.5	50	SOT-23	
KTJ6131V	M1		-30	± 20	-50	100	-1	-30	0	-0.5	-1.5	-3	-0.1	40	-2.5	-10	VSM	
KTJ6131E	EB		-30	± 20	-50	100	-1	-30	0	-0.5	-1.5	-3	-0.1	40	-2.5	-10	ESM	
2N7002KA (ESD Protected 2000V)	2P		60	± 20	300	350	1	60	0	1.1	2.35	V _{GS}	0.25	2.7	5	50	SOT-23	
			2.3	10	500													
*2N7002KE	KE		60	± 20	300	300	1	60	0	1.0	2.0	V _{GS}	0.25	1.5	10	300	ESM	
*2N7002KU	KU		60	± 20	300	270	1	60	0	1.0	2.0	V _{GS}	0.25	1.5	10	300	USM	
*2N7002KDU	DU		60	± 20	300	270	1	60	0	1.0	2.0	V _{GS}	0.25	1.5	10	300	US6	

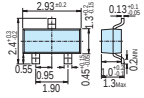
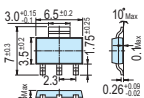
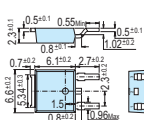
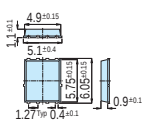
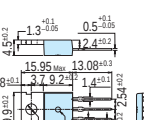
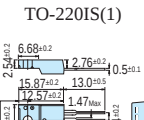
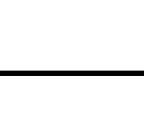
Note) *: Under development

Low Voltage MOSFET

Type No.	Internal circuit (Top view)	Max. Ratings			V_{th} (V)				$R_{DS(ON)}$ (m Ω)				Q_g (nC)		Package	Outline (Unit: mm)
		BV_{DSS} (V)	I_D (A)	P_D (W)	Min.	Max.	V_{DS} (V)	I_D (A)	Typ.	Max.	V_{GS} (V)	I_D (A)	Typ.	V_{GS} (V)		
KML0D4N20V		20	0.4	0.15	0.45	1.0	V_{GS}	250 μ A	410	700	4.5	0.4	0.75	4.5	VSM	
KML0D4N20E		20	0.4	0.21	0.45	1.0	V_{GS}	250 μ A	410	700	4.5	0.4	0.55	4.5	ESM	
*KML0D4N20UL3		20	0.4	0.21	0.45	1.0	V_{GS}	250 μ A	410	700	4.5	0.4	0.55	4.5	ULP-3	
*KML1D0N20UL3		20	1.0	-	0.45	1.0	V_{GS}	250 μ A	-	35	4.5	-	-	-	ULP-3	
KMA3D0N20SA		20	3	1.25	0.5	1.5	V_{GS}	250 μ A	38	55	4.5	2.5	4.0	4.5	SOT-23	
KMA3D6N20SA		20	3.6	1.25	0.6	1.5	V_{GS}	250 μ A	32	45	4.5	2.5	6.6	4.5	SOT-23	
KML0D3P20V		-20	-0.3	0.15	-0.45	-1.0	V_{GS}	-250 μ A	800	1200	-4.5	-0.3	1.5	-4.5	VSM	
*KML0D4P20UL3		-20	-0.35	0.32	-	-1.0	V_{GS}	-250 μ A	800	1200	-4.5	-0.35	1.5	-4.5	ULP-3	
KML0D4P20E		-20	-0.35	0.21	-	-1.0	V_{GS}	-250 μ A	800	1200	-4.5	-0.35	1.5	-4.5	ESM	
KMA2D4P20SA		-20	-2.4	1.25	-0.6	-1.5	V_{GS}	-250 μ A	83	100	-4.5	-2.4	4	-4.5	SOT-23	
KMA3D7P20SA		-20	-3.7	1.25	-0.55	-1.5	V_{GS}	-250 μ A	65	76	-4.5	-2.8	4.37	-4.5	SOT-23	
KMB4D0N30SA		30	4	1.25	1.0	3.0	V_{GS}	250 μ A	38	47	10	3.5	6	10	SOT-23	
*KMD4D2N30S		30	4.2	1.25	1.0	1.8	V_{GS}	250 μ A	32	42	10	4.2	6.1	10	SOT-23	
*KMD6D0DN30C		30	6	2.5	1.0	3.0	V_{GS}	250 μ A	25	32	10	6	6.1	10	PDFN56	
KMB3D0P30SA		-30	-3	1.25	-1.0	-3.0	V_{GS}	-250 μ A	64	80	-10	-3.0	6.3	-10	SOT-23	

(Note) *: Under development

Low Voltage MOSFET

Type No.	Internal circuit (Top view)	Max. Ratings			V _{th} (V)				R _{DS(ON)} (mΩ)				Q _g (nC)		Package	Outline (Unit: mm)
		BV _{DSS} (V)	I _D (A)	P _D (W)	Min.	Max.	V _{DS} (V)	I _D (A)	Typ.	Max.	V _{GS} (V)	I _D (A)	Typ.	V _{GS} (V)		
KMB3D5N40SA		40	3.5	1.25	1.0	3.0	V _{GS}	250μA	36	45	10	3.5	6.4	10	SOT-23	SOT-23 
KU3600N10W		100	1.7	2.0	2.0	4.0	V _{GS}	250μA	300	360	10	0.8	4.2	10	SOT-223	SOT-223 
*KU3000DN10CZ		100	2	2.5	2.0	4.0	V _{GS}	250μA	300	360	10	2	-	10	PDFN56	PDFN56 
KU3600N10D		100	5	17.4	2.0	4.0	V _{GS}	250μA	300	360	10	2.5	4.2	10	DPAK(1)	DPAK(1) 
KU310N10D		100	27	52	2.0	4.0	V _{GS}	250μA	25	31	10	13.5	49	10	DPAK(1)	DPAK(1) 
KU310N10F		100	23	38	2.0	4.0	V _{GS}	250μA	25	31	10	17	49	10	TO-220IS(1)	TO-220IS(1) 
KU310N10P		100	34	83.3	2.0	4.0	V _{GS}	250μA	25	31	10	17	49	10	TO-220AB	TO-220AB 
KU086N10F		100	50	50	2.0	4.0	V _{GS}	250μA	7.3	8.6	10	47.5	200	10	TO-220IS(1)	TO-220IS(1)
KU086N10P		100	95	167	2.0	4.0	V _{GS}	250μA	7.3	8.6	10	47.5	200	10	TO-220AB	TO-220AB

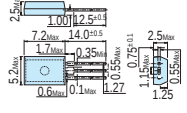
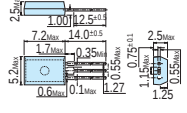
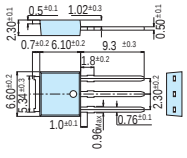
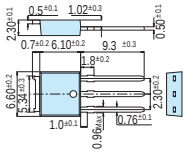
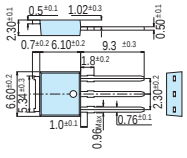
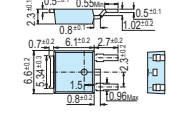
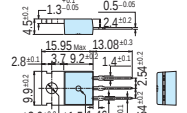
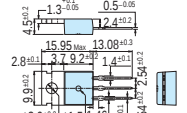
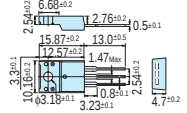
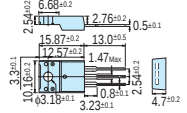
Note) * : Under development

High Voltage MOSFET (Planar)

[illegible]

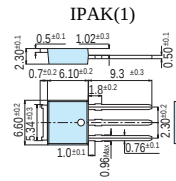
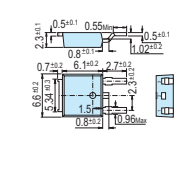
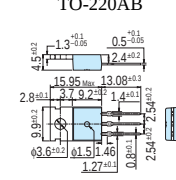
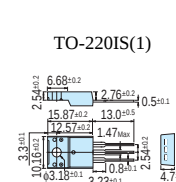
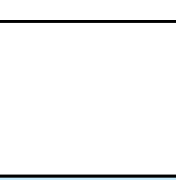
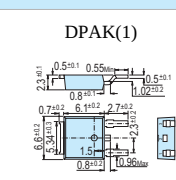
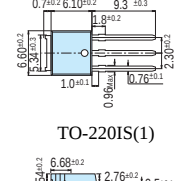
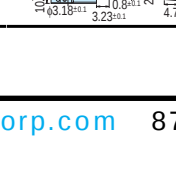
Note) Additional Function Code : Z → Built in ESD Zener diode
S → Built in ESD Zener diode & Fast Recovery Diode

High Voltage MOSFET (Planar)

Type No.	Max. Ratings			V _{th} (V)		R _{DS(ON)} (Ω)				Q _g (nC)		Package	Outline (Unit: mm)
	BV _{DSS} (V)	I _D (A)	P _D (W)	Min.	Max.	Typ.	Max.	V _{GS} (V)	I _D (A)	Typ.	V _{GS} (V)		
KF1N60L	600	0.5	5.4	2.5	4.5	8	10	10	0.24	4.0	10	TO-92L	
KF1N60D	600	1	28	2.5	4.5	8	10	10	0.5	4.0	10	DPAK(1)	
KF1N60I	600	1	28	2.5	4.5	8	10	10	0.5	4.0	10	IPAK(1)	
KF2N60L	600	0.7	5.4	2.5	4.5	3.7	4.4	10	0.35	6.0	10	TO-92L	
KF2N60D	600	2	40.3	2.5	4.5	3.7	4.4	10	1	6.0	10	DPAK(1)	
KF2N60I	600	2	40.3	2.5	4.5	3.7	4.4	10	1	6.0	10	IPAK(1)	
KF2N60F	600	2	28.4	2.5	4.5	3.7	4.4	10	1	6.0	10	TO-220IS(1)	
KF3N60D	600	2.3	44.6	2.5	4.5	2.8	3.3	10	1.15	8.5	10	DPAK(1)	
KF3N60I	600	2.3	44.6	2.5	4.5	2.8	3.3	10	1.15	8.5	10	IPAK(1)	
KF3N60F	600	3	31	2.5	4.5	2.8	3.3	10	1.5	8.5	10	TO-220IS(1)	
KF4N60D	600	3.2	59.5	2.5	4.5	1.9	2.5	10	1.6	10	10	DPAK(1)	
KF4N60I	600	3.2	59.5	2.5	4.5	1.9	2.5	10	1.6	10	10	IPAK(1)	
KF4N60F	600	4	37.9	2.5	4.5	1.9	2.5	10	2	10	10	TO-220IS(1)	
KF5N60D	600	3.5	59.5	2.5	4.5	1.7	2	10	1.75	11	10	DPAK(1)	
KF5N60I	600	3.5	59.5	2.5	4.5	1.7	2	10	1.75	11	10	IPAK(1)	
KF5N60P	600	4.5	83	2.5	4.5	1.7	2	10	2.25	11	10	TO-220AB	
KF5N60F	600	4.5	38	2.5	4.5	1.7	2	10	2.25	11	10	TO-220IS(1)	
KF6N60D	600	5.0	69.4	2.5	4.5	1.2	1.4	10	2.5	16	10	DPAK(1)	
KF6N60I	600	5.0	69.4	2.5	4.5	1.2	1.4	10	2.5	16	10	IPAK(1)	
KF6N60F	600	6	41.7	2.5	4.5	1.2	1.4	10	3	16	10	TO-220IS(1)	
KF7N60P	600	7	108	2.5	4.5	0.95	1.2	10	3.5	19	10	TO-220AB	
KF7N60F	600	7	41	2.5	4.5	0.95	1.2	10	3.5	19	10	TO-220IS(1)	
KF8N60P	600	8	160	2.5	4.5	0.85	1.05	10	4	22	10	TO-220AB	
KF8N60F	600	8	44.6	2.5	4.5	0.85	1.05	10	4	22	10	TO-220IS(1)	
KF10N60P	600	10	178	2.5	4.5	0.59	0.73	10	5	26	10	TO-220AB	
KF10N60F	600	10	46	2.5	4.5	0.59	0.73	10	5	26	10	TO-220IS(1)	
KF12N60P	600	12	215	2.5	4.5	0.51	0.6	10	6	36	10	TO-220AB	
KF12N60F	600	12	49.8	2.5	4.5	0.51	0.6	10	6	36	10	TO-220IS(1)	

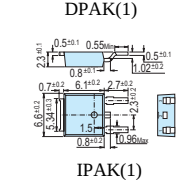
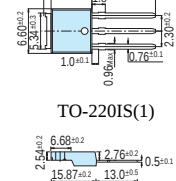
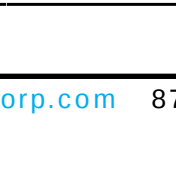
(Note) *: Under development

High Voltage MOSFET (Planar)

Type No.	Max. Ratings			V _{th} (V)		R _{DS(ON)} (Ω)				Q _g (nC)		Package	Outline (Unit: mm)
	BV _{DSS} (V)	I _D (A)	P _D (W)	Min.	Max.	Typ.	Max.	V _{GS} (V)	I _D (A)	Typ.	V _{GS} (V)		
KF4N65P	650	3.6	83.3	2.5	4.5	2.1	2.5	10	1.8	12	10	TO-220AB	
KF4N65F	650	3.6	37.9	2.5	4.5	2.1	2.5	10	1.8	12	10	TO-220IS(1)	
KF4N65FM	650	3.6	37.9	2.5	4.5	2.1	2.5	10	1.8	15	10	TO-220IS(1)	
KF5N65D	650	4.4	69.4	2.5	4.5	1.5	1.75	10	2.2	14.5	10	DPAK(1)	
KF5N65I	650	4.4	69.4	2.5	4.5	1.5	1.75	10	2.2	14.5	10	IPAK(1)	
KF5N65F	650	5	41.7	2.5	4.5	1.5	1.75	10	2.5	14.5	10	TO-220IS(1)	
KF7N65P	650	7	160	2.5	4.5	1.0	1.2	10	3.5	24	10	TO-220AB	
KF7N65F	650	7	44.6	2.5	4.5	1.0	1.2	10	3.5	24	10	TO-220IS(1)	
KF7N65FM	650	7	44.6	2.5	4.5	1.0	1.2	10	3.5	24	10	TO-220IS(1)	
KF10N65F	650	10	46	2.5	4.5	0.76	0.95	10	5	24	10	TO-220IS(1)	
KF7N68F	680	7	44.6	2.5	4.5	1.0	1.25	10	3.5	24	10	TO-220IS(1)	
KF10N68F	680	10	46	2.5	4.5	0.76	0.95	10	5	24	10	TO-220IS(1)	
KF12N68F	680	12	50	2.5	4.5	0.58	0.71	10	6	30	10	TO-220IS(1)	
*KF1N70D	700	1	-	2.5	4.5	-	13	10	-	-	10	DPAK(1)	
*KF1N70I	700	1	-	2.5	4.5	-	13	10	-	-	10	IPAK(1)	
*KF2N70D	700	2	-	2.5	4.5	-	6.2	10	-	-	10	DPAK(1)	
*KF2N70I	700	2	-	2.5	4.5	-	6.2	10	-	-	10	IPAK(1)	
KF6N70I	700	5.2	119	2.5	4.5	1.42	1.65	10	3	19	10	IPAK(1)	
KF6N70F	700	6	41	2.5	4.5	1.42	1.65	10	3	19	10	TO-220IS(1)	
*KF10N70F	700	10	-	2.5	4.5	-	0.98	10	-	-	10	TO-220IS(1)	
KF3N80D	800	2.7	69.4	2.5	4.5	3.4	4.2	10	1.35	12	10	DPAK(1)	
KF3N80I	800	2.7	69.4	2.5	4.5	3.4	4.2	10	1.35	12	10	IPAK(1)	
KF3N80F	800	3	32	2.5	4.5	3.4	4.2	10	1.5	12	10	TO-220IS(1)	
KF4N80F	800	4	43	2.5	4.5	2.2	2.6	10	2	17	10	TO-220IS(1)	
KF7N80F	800	7	44.6	2.5	4.5	1.2	1.45	10	3.5	45	10	TO-220IS(1)	

Note) *: Under development
Note) M : Reduced EMI Level

High Voltage MOSFET (Super Junction)

Type No.	Max. Ratings			V _{th} (V)		R _{DS(ON)} (Ω)				Q _g (nC)		Package	Outline (Unit: mm)
	BV _{DSS} (V)	I _D (A)	P _D (W)	Min.	Max.	Typ.	Max.	V _{GS} (V)	I _D (A)	Typ.	V _{GS} (V)		
KP8N60D	600	8	73.5	2.0	4.0	0.52	0.58	10	4	16	10	DPAK(1)	
*KP8N60I	600	8	73.5	2.0	4.0	0.52	0.58	10	4	16	10	IPAK(1)	
KP8N60F	600	8	37.9	2.0	4.0	0.50	0.58	10	4	16	10	TO-220IS(1)	
KP11N60D	600	11	69.4	2.0	4.0	0.33	0.38	10	5.5	20	10	DPAK(1)	
KP11N60F	600	11	34.7	2.0	4.0	0.33	0.38	10	5.5	20	10	TO-220IS(1)	
*KP15N60F	600	15	-	2.0	4.0	-	0.28	10	-	-	10	TO-220IS(1)	
KP8N65D	650	8	78	2.0	4.0	0.52	0.62	10	4	21	10	DPAK(1)	
*KP8N65I	650	8	78	2.0	4.0	0.52	0.62	10	4	21	10	IPAK(1)	
*KP8N65F	650	8	-	2.0	4.0	-	0.62	10	-	-	10	TO-220IS(1)	
*KP11N65D	650	11	-	2.0	4.0	-	0.38	10	-	-	10	DPAK(1)	
*KP11N65F	650	11	-	2.0	4.0	-	0.38	10	-	-	10	TO-220IS(1)	
*KP15N65F	650	15	-	2.0	4.0	-	0.28	10	-	-	10	TO-220IS(1)	

Note) *: Under development

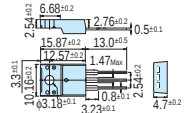
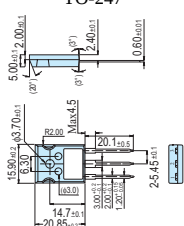
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2N7002	FAIRCHILD	2N7002KA	2SK2843	RENESAS	KTK5132U	2SK3767	TOSHIBA	KF12N60F	CPH3355	SANYO	KMB3D0P30SA
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2N7002	PHILIPS	2N7002KA	2SK2876	TOSHIBA	KF10N60P	2SK3868	TOSHIBA	KF11N50F	DG7N60	INCHARGE	KF7N60P
2N7002	STMicroelectronics	2N7002KA	2SK2889	TOSHIBA	KF9N25F	2SK3869	TOSHIBA	KF11N50F	DMN3033LS	DIODES	KF7N60P
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2N7002A	ONSEMI	2N7002KA	2SK2972	TOSHIBA	KF5N50PZ	2SK4012	TOSHIBA	KF7N80F	DMP2130L	DIODES	KMA3D7P20SA
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2N7002E	VISHAY	2N7002KA	2SK2998	ROHM	KTK5132U	2SK4026	TOSHIBA	KF9N50F	FCPF11N60	FAIRCHILD	KP11N60F
2N7002E	DIODES	2N7002KA	2SK3018	ROHM	KTK5132E	2SK4042	RENESAS	KF1N60D	FDB8447L	FAIRCHILD	KP15N60F
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2N7002K	ONSEMI	2N7002KA	2SK3067	TOSHIBA	KF1N50F	2SK4081	RENESAS	KF4N60F	FDD5N50	FAIRCHILD	KF5N50DZ
2N7002K	PANIT	2N7002KA	2SK3068	TOSHIBA	KU310N10P	2SK4082	SANYO	KF12N60F	FDD6N50	FAIRCHILD	KF7N50D
2N7002K	VISHAY	2N7002KA	2SK3084	TOSHIBA	KF5N60P	2SK4087LS	SANYO	KF9N50F	FDD8447L	FAIRCHILD	KF9N25D
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2N7002P	NXP	2N7002KA	2SK3114	RENESAS	KF4N60F	2SK4105	TOSHIBA	KF11N50F	FDN308P	FAIRCHILD	KMA2D4P20SA
2N7002PT	CHENMKO	2N7002KA	2SK3114B	NEC	KF6N60F	2SK4106	TOSHIBA	KF6N60F	FDN335N	FAIRCHILD	KMA3D0N20SA
2N7002T	FAIRCHILD	2N7002KA	2SK3115	RENESAS	KF7N60F	2SK4110	TOSHIBA	KF10N60F	FDN336P	FAIRCHILD	KMA3D0P30SA
2SJ347	TOSHIBA	KTJ6131E	2SK3115B	RENESAS	KF7N60P	2SK4111	TOSHIBA	KF8N60F	FDN337N	FAIRCHILD	KMB4D0N30SA
2SJ557A	RENESAS	KMB3D0P30SA	2SK3116B	TOSHIBA	KF11N50F	2SK4178	SANYO	KF3N60F	FDN342P	FAIRCHILD	KMA2D4P20SA
2SJ625	NEC	KMA2D4P20SA	2SK3126	TOSHIBA	KF7N60F	2SK4197FS	RENESAS	KU086N10P	FDN352AP	FAIRCHILD	KMB3D0P30SA
2SJ648	NEC	KML0D3P20V	2SK3217	TOSHIBA	KF10N68F	2SK4201	Analog Power	KMA3D7P20SA	FDN360P	FAIRCHILD	KMB3D0P30SA
2SK1010	Fuji Electric	KF5N50PZ	2SK3265	RENESAS	KF10N60F	AM2327P	AOS	KMB3D0P30SA	FDP047N08	FAIRCHILD	KMB2D0N30SA
2SK1062	TOSHIBA	2N7002KA	2SK3298B	RENESAS	KF10N60P	A03409L	AOS	KMA3D7P20SA	FDP085N10A	FAIRCHILD	KU086N10P
2SK1133	RENESAS	2N7002KA	2SK3299B	NEC	KF5N50PZ	A03415AL	AOS	KMB4D0N30SA	FDP3632	FAIRCHILD	KU086N10P
2SK1155	Hitachi	KF5N50PZ	2SK3305	RENESAS	KF5N50PZ	A03434	AOS	KMA3D7P20SA	FDPF12N50T	FAIRCHILD	KF11N50F
2SK1159	Hitachi	KF9N50P	2SK3305B	RENESAS	KF5N50FZA	A03435	AOS	KMA3D0N20SA	FDPF12N60NZ	FAIRCHILD	KF12N60F
2SK1284	KEXIN	KU3600N10D	2SK3306B	TOSHIBA	KF11N50P	A03438	AOS	2N7002KA	FDPF5N50FT	FAIRCHILD	KF5N50FZA
2SK1351	TOSHIBA	KF5N50FZA	2SK3309	TOSHIBA	KF11N50F	A0D1N60	AOS	KF1N60D	FDPF5N50NZ	FAIRCHILD	KF5N50FZA
2SK1399	NEC	2N7002KA	2SK3310	TOSHIBA	KF7N60F	A0D3N40	AOS	KF3N40D	FDPF7N50U	FAIRCHILD	KF9N50F
2SK1445LS	SANYO	KF5N50FZA	2SK3312	TOSHIBA	KF11N50F	A0D4186	AOS	KF3N50DZ	FDS9435A	FAIRCHILD	KTK5134S
2SK1459LS	SANYO	KF3N80F	2SK3313	TOSHIBA	KF5N50FZA	A0D482	AOS	KU310N10D	FDV301N	PANASONIC	KTK5132V
2SK1580	NEC	KTK5132U	2SK3316	RENESAS	KF9N50P	A0D4N60	AOS	KF5N60D	FK330301	PANASONIC	KTK5132V
2SK1581	NEC	2N7002KA	2SK3325B	NEC	KF9N50F	A0TF10N60	AOS	KF10N60F	FK3303010L	PANASONIC	KTK5132V
2SK1581	RENESAS	2N7002KA	2SK3326	RENESAS	KF9N50F	A0TF10N60L	AOS	KF10N60F	FMA08N60GX	Fuji Electric	KF8N60P
2SK1582	RENESAS	2N7002KA	2SK3367	TOSHIBA	KF3N50DZ	A0TF12N50	AOS	KF11N50F	FMA19N60E	Fuji Electric	KP11N60F
2SK1590	NEC	2N7002KA	2SK3373	TOSHIBA	KF10N60P	A0TF12N60	AOS	KF12N60F	FMP12N50E	Fuji Electric	KF11N50P
2SK1626	RENESAS	KF5N50FSA	2SK3399	TOSHIBA	KF13N50P	A0TF4N60	AOS	KF5N60F	FMV05N50E	Fuji Electric	KF5N50FZA
2SK1657	NEC	KTK5132S	2SK3403	TOSHIBA	KF11N50F	A0TF4N60	AOS	KF5N60F	FMV07N50E	Fuji Electric	KF9N50F
2SK1819	Fuji Electric	KF5N50FZA	2SK3407	TOSHIBA	KF5N50PZ	A0TF5N50	AOS	KF5N50FZA	FMV08N50ESC	Fuji Electric	KF7N50F
2SK1821	Fuji Electric	KF2N60F	2SK3417	TOSHIBA	KF10N60P	A0TF7N60	AOS	KF7N60F	FMV11N60E	Fuji Electric	KF10N60F
2SK1824	NEC	KTK5132E	2SK3437	Fuji Electric	KF12N60F	A0TF7N65L	AOS	KF7N65F	FMV12N50E	Fuji Electric	KF11N50F
2SK1830	TOSHIBA	KTK5131E	2SK3451	NEC	KF11N50F	A0TF8N50	AOS	KF9N50F	FMV12N50E	Fuji Electric	KF13N50P
2SK1920	SANYO	KF9N25D	2SK3455	RENESAS	KF11N50F	A0TF8N65	AOS	KF7N65F	FMV12N50E	Fuji Electric	KF12N60F
2SK2009	TOSHIBA	2N7002KA	2SK3455B	NEC	KU310N10D	A0U2N60	ADVANCED	KF2N60I	FMV16N60E	FAIRCHILD	KP11N60F
2SK2040	NEC	KF2N60D	2SK3483	NEC	KU310N10D	AP04N70BI	APEC	KF4N65F	FQD2N80TM	FAIRCHILD	KF3N80D
2SK2044LS	SANYO	KF5N60F	2SK3484	TOSHIBA	KF3N40D	AP09N50I	APEC	KF9N50F	FQD3N50C	FAIRCHILD	KF3N50DZ
2SK2045LS	SANYO	KF6N60F	2SK3498	NEC	KTK5132E	AP13N50I	APEC	KF11N50F	FQD6N40C	FAIRCHILD	KF5N40D
2SK2071	Fuji Electric	KF2N60D	2SK3503	Fuji Electric	KF13N50F	AP2301GN	APEC	KMA2D4P20SA	FQN1N60C	FAIRCHILD	KF1N60L
2SK2099	Fuji Electric	KF9N25D	2SK3505	Fuji Electric	KF5N50PZ	AP2309AGN	APEC	KMB3D0P30SA	FQP10N60C	FAIRCHILD	KF10N60P
2SK2101	Fuji Electric	KF7N80F	2SK3517	Fuji Electric	KF9N50F	AP2317GN	APEC	KMA3D7P20SA	FQP13N50C	FAIRCHILD	KF13N50P
2SK2158	NEC	2N7002KA	2SK3520	Fuji Electric	KF7N60F	AP2319GN	APEC	KMB3D0P30SA	FQP3N80C	FAIRCHILD	KF3N80F
2SK2350	TOSHIBA	KF9N25F	2SK3525	Fuji Electric	KF7N80F	AP9962AGM	APEC	KF7N80F	FQP4N60C	FAIRCHILD	KF5N60P
2SK2364	NEC	KF9N50F	2SK3530	ROHM	KTK5132V	APM2303A	ANPEC	KMB3D0P30SA	FQP5N60	FAIRCHILD	KF5N60P
2SK2417	TOSHIBA	KF9N25F	2SK3541	TOSHIBA	KF3N50FZ	APM2305	ANPEC	KMA3D7P20SA	FQP5N80	FAIRCHILD	KF4N80F
2SK2466	TOSHIBA	KU310N10P	2SK3543	TOSHIBA	KF9N50F	APM4550JC	NXP	KMB3D0P30SA	FQP7N80C	FAIRCHILD	KF7N80F
2SK2542	TOSHIBA	KF9N50P	2SK3561	TOSHIBA	KF6N60F	BSH105	NXP	KMA3D0N20SA	FQP8N60	FAIRCHILD	KF7N60P
2SK2543	TOSHIBA	KF9N50F	2SK3562	TOSHIBA	KF7N60F	BSH108	INFINEON	KMB4D0N30SA	FQP8N60C	FAIRCHILD	KF7N60P
2SK2544	TOSHIBA	KF7N60P	2SK3562	TOSHIBA	KF5N50FZA	BSP149	INFINEON	KF4N20LW	FQP8N80	FAIRCHILD	KF7N80F
2SK2545	TOSHIBA	KF7N60F	2SK3563	TOSHIBA	KF5N60F	BSP296L6327	DIODES	KU3600N10W	FQPF10N50CF	FAIRCHILD	KF11N50F
2SK2545	TOSHIBA	KF7N60P	2SK3567	TOSHIBA	KF11N50F	BSS138	FAIRCHILD	2N7002KA	FQPF10N60C	FAIRCHILD	KF10N60P
2SK2599	TOSHIBA	KF3N50FZ	2SK3568	TOSHIBA	KF10N60F	BSS138	ZETEX	2N7002KA	FQPF12N60	FAIRCHILD	KF12N60F
2SK2640	Fuji Electric	KF9N50F	2SK3569	RENESAS	KMB4D0N30SA	BSS138	ONSEMI	2N7002KA	FQPF13N50	FAIRCHILD	KF13N50F
2SK2661	TOSHIBA	KF5N50PZ	2SK3577	Fuji Electric	KU310N10P	BSS138	INFINEON	2N7002KA	FQPF13N50C	FAIRCHILD	KF13N50F
2SK2662	TOSHIBA	KF5N50FZA	2SK3599	NEC	KML0D4N20V	BSS138N	DIODES	2N7002KA	FQPF3N80C	FAIRCHILD	KF3N80F
2SK2662	ROHM	KTK5134S	2SK3663	TOSHIBA	KF8N60F	BSS138TA	INFINEON	2N7002KA	FQPF4N60	FAIRCHILD	KF5N60F
2SK2731	TOSHIBA	KF5N60F	2SK3667	Fuji Electric	KF10N60F	BSS159N	INFINEON	2N7002KA	FQPF5N50C	FAIRCHILD	KF5N50FZA
2SK2750	Fuji Electric	KF9N50P	2SK3677	Fuji Electric	KF5N60F	BSS315P	CET	KMB3D0P30SA	FQPF5N50CF	FAIRCHILD	KF5N50FSA
2SK2757	TOSHIBA	KF9N50P	2SK3691	NEC	KF9N25D	CEF07N7	CET	KF6N70F	FQPF5N50CF	FAIRCHILD	KF5N50FSA
2SK2776	TOSHIBA	KF7N60F	2SK3712	RENESAS	KF9N25F	CES2307	JESTEK	KMB3D0P30SA	FQPF5N50T	FAIRCHILD	KF3N50FZ
2SK2777	TOSHIBA	KTK5132E	2SK3712	TOSHIBA	KF3N50FZ	CJ2301	JCST	KMA2D4P20SA	FQPF5N60C	FAIRCHILD	KF5N60F
2SK2825	TOSHIBA	KF11N50F	2SK3757	TOSHIBA	KF3N50FZ	CJ2303	SANYO	KMB3D0P30SA	FQPF6N60	FAIRCHILD	KF6N60F

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
FQPF6N80C	FAIRCHILD	KF7N80F	MDF7N65BH	MagnaChip	KF7N65F	RTR040N03	ROHM	KMB4D0N30SA	STF5N52U	SIMMicroelectronics	KF5N53FS
FQPF7N60	FAIRCHILD	KF7N60F	MDF8N60	MagnaChip	KF8N60F	RUC002N05	ROHM	2N7002KA	STF9N60N	SIMMicroelectronics	KF10N60F
FQPF7N65	FAIRCHILD	KF7N65F	MDF9N50	MagnaChip	KF9N50F	RUE003N02	ROHM	KML0D4N20V	STJ004SF	AUK	KMB3D0P30SA
FQPF7N65C	FAIRCHILD	KF7N65F	MDHT3N40URH	MagnaChip	KF3N40W	RUM002N02	ROHM	KML0D4N20V	STK0035F	AUK	KMB4D0N30SA
FQPF8N60	FAIRCHILD	KF7N60F	MDHT4N20Y	MagnaChip	KF4N20LW	RUM003N02	ROHM	KML0D4N20V	STK0160	AUK	KF1N60L
FQPF8N60C	FAIRCHILD	KF7N60F	MDIB6N70C	MagnaChip	KF6N70I	RUR020N02TL	ROHM	KMA3D0N20SA	STK0380D	AUK	KF3N80D
FQPF8N80C	FAIRCHILD	KF7N80F	MDP11N60	MagnaChip	KF12N60P	RZM001P02	ROHM	KML0D3P20V	STK0460F	AUK	KF4N60F
FQPF9N25C	FAIRCHILD	KF9N25F	MDP7N60	MagnaChip	KF7N60P	RZM002P02	ROHM	KML0D3P20V	STK7002	AUK	2N7002KA
FQPF9N50	FAIRCHILD	KF9N50F	MDP8N60	MagnaChip	KF8N60P	RZR020P01	ROHM	KMA2D4P20SA	STK7002B	AUK	2N7002KA
FQPF9N50C	FAIRCHILD	KF9N50F	MDP9N60	MagnaChip	KF10N60P	SI2301	VISHAY	KMA2D4P20SA	STN1N20	SIMMicroelectronics	KF4N20LW
FQT7N10	FAIRCHILD	KU3600N10W	MDP9N60TH	MagnaChip	KF10N60P	SI2301BDS	VISHAY	KMA2D4P20SA	STN4NF20L	SIMMicroelectronics	KF4N20LW
FQUSN60C	MITSUBISHI	KF5N60I	ME2N7002E	MATSUKI	2N7002KA	SI2301CDS	VISHAY	KMA3D7P20SA	STN4NF20L	SIMMicroelectronics	KF4N20LW
FS5AS	MITSUBISHI	KF2N60F	NDD02N60Z	ONSEMI	KF2N60D	SI2301DS	VISHAY	KMA2D4P20SA	STP10NK60Z	SIMMicroelectronics	KF10N60F
FS5KM	MITSUBISHI	KF9N50FZA	NDD03N80ZT4G	ONSEMI	KF3N80I	SI2302ADS	VISHAY	KMA3D0N20SA	STP10NK60ZFP	SIMMicroelectronics	KF10N60F
FS7KM	RENESAS	KF7N60F	NDF04N60ZG	ONSEMI	KF5N60F	SI2302CDS	VISHAY	KMA3D0N20SA	SIP11NK50ZFP	SIMMicroelectronics	KF11N50F
FS7KM	UTC	KF7N60F	NDF05N50ZG	ONSEMI	KF5N50FZA	SI2303BDS	VISHAY	KMB3D0P30SA	SIP11NK50ZFP	SIMMicroelectronics	KF12N60F
GF4435	TOSHIBA	KF5N60F	NDF08N50ZG	ONSEMI	KF7N50F	SI2303CDS	VISHAY	KMB3D0P30SA	STP12NM50	SIMMicroelectronics	KF13N50F
H2SK2543	TOSHIBA	KF9N50F	NDF11N50ZH	ONSEMI	KF11N50F	SI2306BDS	VISHAY	KMB4D0N30SA	STP12NM50FP	SIMMicroelectronics	KF13N50F
H2SK3455	RENESAS	KF5N50FZA	NDS7002AD87Z	FAIRCHILD	2N7002KA	SI2307CDS	VISHAY	KMB3D0P30SA	STP12NM50FP	SIMMicroelectronics	KF13N50F
H2SK3505	SANYO	KF11N50F	NID644ANT4G	ONSEMI	KU310N10D	SI2308BDS	VISHAY	KMB2D0N60SA	SIP14NK50ZFP	SIMMicroelectronics	KF13N50F
H2SK3561	TOSHIBA	KF13N50F	NTR1P02LT1G	ONSEMI	KMA2D4P20SA	SI2308DS	VISHAY	KMB2D0N60SA	STP24NF10	SIMMicroelectronics	KU310N10P
H2SK3932	Fuji Electric	KF9N50F	NTR2101PT1G	ONSEMI	KMA3D7P20SA	SI2318DS	VISHAY	KMA3D5N40SA	STP24NF10	SIMMicroelectronics	KU310N10P
HFDPF7N50F	FAIRCHILD	KF9N50F	NTR4101PT1G	ONSEMI	KMA3D7P20SA	SMK0460D	AUK	KF5N60D	STP3NK60ZFP	SIMMicroelectronics	KF3N60F
HFS7N80	SEMIHOW	KF7N50F	NTR4501	ONSEMI	KMA3D0N20SA	SMK0460F	AUK	KF4N60F	STP4NK60ZFP	SIMMicroelectronics	KF4N60F
HSP19K50ZFP	SIMMicroelectronics	KF7N80F	NTR4501N	ONSEMI	KMA3D0N20SA	SMK0765F	AUK	KF7N65F	STP4NK60ZFP	SIMMicroelectronics	KF5N60F
HTK8A50D	TOSHIBA	KF9N50F	NTR4502PT1G	ONSEMI	KMB3D0P30SA	SMK0825FZ	AUK	KF9N25F	STP4NK60ZFP	SIMMicroelectronics	KF3N80F
INJ0203BC1	ISAHAYA	KF9N50F	NTR4503NT1G	ONSEMI	KMB4D0N30SA	SMK830FC	KODENSHI	KF5N50FZA	STP6NK60ZFP	SIMMicroelectronics	KF6N60F
INK0001AC1	ISAHAYA	KMA2D4P20SA	P0260AI	Niko-Semi	KF2N60I	SMN01L20Q	AUK	KF4N20LW	STP6NK60ZFP	SIMMicroelectronics	KF7N60F
INK0010AC1	ISAHAYA	2N7002KA	P0260ATF	Niko-Semi	KF2N60F	SMN04L20D	AUK	KF4N20LD	STP7NK40ZFP	SIMMicroelectronics	KF5N50FZA
IPAG0R280E6	INFINEON	2N7002KA	P0460ATF	Niko-Semi	KF5N60F	SPA04N60C3	INFINEON	KF8N60F	STP7NK40ZFP	SIMMicroelectronics	KF7N80F
IPA60R380E6	INFINEON	KP15N60F	P0660ATF	Niko-Semi	KF7N60F	SPA07N60C3	INFINEON	KF12N60F	STP8NK80ZFP	SIMMicroelectronics	KF7N80F
IPD60R3K3C6	INFINEON	KP11N60F	P0850ATF	Niko-Semi	KF9N50F	SPA11N60C3	INFINEON	KP11N60F	STP9NK50Z	SIMMicroelectronics	KF9N50F
IPP040N60N3G	INFINEON	KF3N60D	P1060ATF	Niko-Semi	KF10N60F	SPA11N65C3	INFINEON	KP11N65F	STP9NK50ZFP	SIMMicroelectronics	KF9N50F
IRF8010	IR	KF9N25F	P5002CMG	Niko-Semi	KMA3D0N20SA	SPA15N60C3	INFINEON	KP15N60F	SUP85N10	VISHAY	KU086N10P
IRF830PBF	VISHAY	KU086N10P	PFF10N65	POWERDEVICES	KF10N65F	SPD03N60C3	INFINEON	KF6N60D	SVF12N60F	SILAN	KF10N60F
IRF840	IR	KF5N50PZ	PHI4N90LT	NXP	KU3600N10W	SPP11N60C3	INFINEON	KP11N60F	SVF2N60F	SILAN	KF2N60F
IRF840	SIMMicroelectronics	KF9N50P	PMBF170	NXP	2N7002KA	SQ2301ES	VISHAY	KMA3D7P20SA	SVF7N65	SILAN	KF7N65F
IRFB3206GPBF	IR	KF11N50F	PMV48XP	NXP	KMA3D7P20SA	SSM3J01T	TOSHIBA	KMB3D0P30SA	SVF7N80F	SILAN	KF7N80F
IRFB4610PBF	IR	KU086N10P	PMV65XP	NXP	KMA3D7P20SA	SSM3J14T	TOSHIBA	KMB3D0P30SA	TK10A50D	TOSHIBA	KF11N50F
IRFB4710PBF	IR	KU086N10P	PZ2N7002M	UNIKC	2N7002KA	SSM3J15FS	TOSHIBA	KTK5132S	TK10A50D	TOSHIBA	KF9N50F
IRFBC40PBF	VISHAY	KU086N10P	QW7002	RENESAS	2N7002KA	SSM3J15FV	TOSHIBA	KTJ6131V	TK10A60D	TOSHIBA	KF10N60F
IRFL210TRPBF	VISHAY	KF7N60P	R010NXXUC16	ROHM	KF7N50F	SSM3J305T	TOSHIBA	KMB3D0P30SA	TK11A45D	TOSHIBA	KF11N50F
IRFM210BTF	FAIRCHILD	KF4N20LW	R5013ANX	ROHM	KF13N50F	SSM3J325F	TOSHIBA	KMA2D4P20SA	TK11A50D	TOSHIBA	KF11N50F
IRFR3410	IR	KF4N20LW	R6006AND	ROHM	KF6N60F	SSM3J35MFV	TOSHIBA	KML0D3P20V	TK11A60D	TOSHIBA	KF12N60F
IRFR420	IR	KU310N10D	R6012ANXUC7	ROHM	KF12N60F	SSM3J36MFV	TOSHIBA	KML0D3P20V	TK12A45D	TOSHIBA	KF11N50F
IRFU210PBF	VISHAY	KF3N50DZ	RC0075N19	ROHM	KF9N25D	SSM3K01T	TOSHIBA	KMB4D0N30SA	TK12A50D	TOSHIBA	KF11N50F
IRFUC20PBF	IR	KF4N20LI	RDX045N60	ROHM	KF5N60F	SSM3K03FE	TOSHIBA	KTK5132U	TK12A55D	TOSHIBA	KF12N60F
IRLML2402	IR	KF2N60I	RHK003N06	ROHM	2N7002KA	SSM3K03FU	TOSHIBA	KTK5132V	TK12A60D	TOSHIBA	KF11N50F
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IRLML6402PBF	IR	KMA3D7P20SA	RJK60S1DPP	RENESAS	KF8N60F	SSM3K15AMFV	TOSHIBA	KTK5132V	TK13A45D	TOSHIBA	KF13N50F
JCS13N50FT	JILIN SINO	KF13N50F	RJK60S2DPP	RENESAS	KF10N60F	SSM3K15FS	TOSHIBA	KTK5132E	TK13A50D	TOSHIBA	KF13N50F
JCS4N60F	JILIN SINO	KF5N60F	RJK60S3DPP	RENESAS	KF12N60F	SSM3K15FU	TOSHIBA	KTK5132U	TK13A60D	TOSHIBA	KF12N60F
JCS4N60F	JILIN SINO	KF5N60F	RJU002N06	ROHM	2N7002KU	SSM3K15FV	TOSHIBA	KTK5132V	TK15A20D	TOSHIBA	KP15N60F
JCS5N50FT	JILIN SINO	KF5N50FZA	RK7002	ROHM	2N7002KA	SSM3K16FS	TOSHIBA	KTK5132U	TK15A60D	TOSHIBA	KP15N60F
JCS730C	JILIN SINO	KF5N50PZ	RK7002A	ROHM	2N7002KA	SSM3K16FU	TOSHIBA	KTK5132U	TK16A55D	TOSHIBA	KP15N60F
JCS740C	JILIN SINO	KF5N50PZ	RK7002B	ROHM	2N7002KA	SSM3K16FV	TOSHIBA	KTK5132V	TK2A65D	TOSHIBA	KF4N65F
JCS7N60F	JILIN SINO	KF7N60F	RK7002BT116	ROHM	2N7002KA	SSM3K301T	TOSHIBA	KMA3D6N20SA	TK2P60D	TOSHIBA	KF2N60D
JCS9N50F	JILIN SINO	KF9N50F	RK7002T116	ROHM	2N7002KA	SSM3K303T	TOSHIBA	KMB4D0N30SA	TK2Q60D	TOSHIBA	KF2N60I
L2N7002LT1G	LRC	2N7002KA	RQJ003PGDQA	RENESAS	KMB3D0P30SA	SSM3K316T	TOSHIBA	KMB4D0N30SA	TK3A65D	TOSHIBA	KF4N60I
L2N7002LT1G	ONSEMI	2N7002KA	RQJ004GDDQA	RENESAS	KMB2D0N60SA	SSM3K320T	TOSHIBA	KMB4D0N30SA	TK3A65DA	TOSHIBA	KF4N65F
LN2302LT1G	LRC	KMA3D0N20SA	RRR015P03	ROHM	KMB3D0P30SA	SSM3K329R	TOSHIBA	KMB4D0N30SA	TK4A50D	TOSHIBA	KF5N50FZA
LSK354IF81ZL	ROHM	KTK5132V	RRR030P03	ROHM	KMB3D0P30SA	SSM3K37MFV	TOSHIBA	KML0D4N20V	TK4A60D	TOSHIBA	KF6N60F
MDD3N50G	MagnaChip	KF3N50DZ	RRR030P03GZ	ROHM	KMB3D0P30SA	SSM3K7002BF	TOSHIBA	2N7002KA	TK4A60DA	TOSHIBA	KF6N60F
MDD4N20YRH	MagnaChip	KF4N20LD	RRR030P03TL	ROHM	KMB3D0P30SA	SSM3K7002F	TOSHIBA	2N7002KA	TK4A60DB	TOSHIBA	KF5N60F
MDD5N40RH	MagnaChip	KF5N40D	RSF015N06	ROHM	KMB2D0N60SA	STD10NM60N	SIMMicroelectronics	KP8N60D	TK4A65DA	TOSHIBA	KF4N65F
MDD5N50Z	MagnaChip	KF5N50DZ	RSR015P03	ROHM	KMB3D0P30SA	STD13NM60N	SIMMicroelectronics	KP11N60D	TK4P60DB	TOSHIBA	KF5N60D
MDD6N60G	MagnaChip	KF6N60D	RSR020N06	ROHM	KMB2D0N60SA	STD3NK80Z	SIMMicroelectronics	KF3N80D	TK55D10J1	TOSHIBA	KU086N10P
MDD7N25	MagnaChip	KF9N25D	RSR030P03TL	ROHM	KMB2D0N60SA	STD5N52U	SIMMicroelectronics	KF5N53DS	TK5A50D	TOSHIBA	KF5N50FZA
MDF10N60G	MagnaChip	KF10N60F	RSR025N03	ROHM	KMB4D0N30SA	STF10NK50Z	SIMMicroelectronics	KF9N50P	TK5A53D	TOSHIBA	KF5N53FS
MDF10N65B	MagnaChip	KF10N65F	RSR025P03	ROHM	KMB3D0P30SA	STF10NM60	SIMMicroelectronics	KF10N60F	TK5A60D	TOSHIBA	KF6N60F
MDF10N65B	MagnaChip	KF10N68F	RTM002P02	ROHM	KML0D3P20V	STF10NM60N	SIMMicroelectronics	KF10N60F	TK5A65D	TOSHIBA	KF7N65F
MDF11N60	MagnaChip	KF12N60F	RTR020N05	ROHM	KMB3D5N40SA	STF10NM60N	SIMMicroelectronics	KP8N60F	TK5A65DA	TOSHIBA	KF5N65F
MDF11N65B	MagnaChip	KF12N68F	RTR020P02	ROHM	KMA2D4P20SA	STF11N65K3	SIMMicroelectronics	KF12N68F	TK5P50D	TOSHIBA	KF5N50DZ
MDF4N60B	MagnaChip	KF5N60F	RTR025N03	ROHM	KMB4D0N30SA	STF11NM60ND	SIMMicroelectronics	KF12N60F	TK5P53D	TOSHIBA	KF5N53DS
MDF4N65BH	MagnaChip	KF4N65F	RTR025N05	ROHM	KMB3D5N40SA	STF13NK50Z	SIMMicroelectronics	KF11N50F	TK6A55DA	TOSHIBA	KF6N60F
MDF5N50BTH	MagnaChip	KF5N50FZA	RTR025P02TL	ROHM	KMA2D4P20SA	STF13NM60	SIMMicroelectronics	KP11N60F	TK6A60D	TOSHIBA	KF7N60F
MDF6N60	MagnaChip	KF6N60F	RTR030N05	ROHM	KMB3D5N40SA	STF13NM60N	SIMMicroelectronics	KP11N60F	TK6A65D	TOSHIBA	KF7N60F
MDF7N50TH	MagnaChip	KF7N50F	RTR030P02	ROHM	KMA3D7P20SA	STF2HNK60Z	SIMMicroelectronics	KF2N60F	TK6A65D	TOSHIBA	KF7N65F

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
TK7A50D	TOSHIBA	KF7N50F									
TK7A60W	TOSHIBA	KP8N60F									
TK8A25DA	TOSHIBA	KF9N25F									
TK8A50D	TOSHIBA	KF9N50F									
TK8A60DA	TOSHIBA	KF8N60F									
TK8A60V	TOSHIBA	KP8N60F									
TK8A65D	TOSHIBA	KF10N65F									
TK8P25DA	TOSHIBA	KF9N25D									
TK9A45D	TOSHIBA	KF9N50F									
TMD2N60AZ	TRINNO	KF2N60D									
TMD5N60AZ	TRINNO	KF5N60D									
TMPF10N60A	TRINNO	KF10N60F									
TMPF4N65AZ	TRINNO	KF4N65F									
TMPF7N65Z	TRINNO	KF7N65F									
TMU6N65G	TRINNO	KF5N65I									
TSM2311	TAIWAN	KMA3D7P20SA									
U2N7002	DIODES	2N7002KA									
UPA572T	NEC	KTK5132U									
UT2301G	UTC	KMA2D4P20SA									
VNP35N07	SIMON	KU310N10P									
WFF13N50N	WINSEMI	KF13N50F									
WPM2026	WILLSEMI	KMA3D7P20SA									
WPM2341	WILLSEMI	KMA3D7P20SA									
YTA830	TOSHIBA	KF5N50PZ									
YTA840	TOSHIBA	KF9N50P									
ZXMN2A01F	DIODES	KMA3D0N20SA									
ZXMP30HTA	DIODES	KMB3D0P30SA									

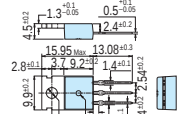
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IGBT with Anti-Parallel Diode (Hard Switching)

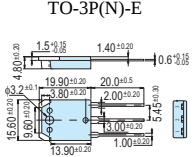
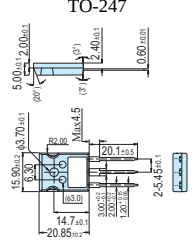
Type No.	BV _{CES} (V)	I _C (A)		V _{CE(SAT)} (V)	Package	Outline (Unit: mm)
		@25	@100	Typ.		
*KGF12N60FDA	600	12	6	1.70	TO-220IS(1)	TO-220IS(1)  TO-247 
KGT15N60FDA	600	15	7.5	1.70	TO-220IS(1)	
KGF15N60FDA	600	15	7.5	1.65	TO-220IS(1)	
*KGF20N60FDA	600	20	10	1.70	TO-220IS(1)	
KGF20N60KDA	600	40	20	1.70	TO-247	
KGF30N60KDA	600	60	30	1.65	TO-247	
KGF40N60KDA	600	80	40	1.65	TO-247	
KGF50N60KDA	600	100	50	1.65	TO-247	
*KGF75N60KDA	600	150	75	1.65	TO-247	
KGF15N120KDA	1200	30	15	2.00	TO-247	
KGF25N120KDA	1200	50	25	2.00	TO-247	
KGF40N120KDA	1200	80	40	1.90	TO-247	

(Note) *: Under development

IGBT without Anti-Parallel Diode (Hard Switching)

Type No.	BV _{CES} (V)	I _C (A)		V _{CE(SAT)} (V)	Package	Outline (Unit: mm)
		@25	@100	Typ.		
KGF20N60PA	600	40	20	1.70	TO-220AB	TO-220AB 
KGF30N60PA	600	60	30	1.65	TO-220AB	
KGF40N60PA	600	80	40	1.65	TO-220AB	

IGBT with Anti-Parallel Diode (Soft Switching)

Type No.	BV _{CES} (V)	I _C (A)		V _{CE(SAT)} (V)	Package	Outline (Unit: mm)
		@25	@100	Typ.		
KGT15N120NDS	1200	30	15	1.98	TO-3P(N)-E	 TO-3P(N)-E
KGT15N120NDH	1200	30	15	1.90	TO-3P(N)-E	
KGT25N120NDH	1200	50	25	1.90	TO-3P(N)-E	
KGT15N135NDH	1350	30	15	1.90	TO-3P(N)-E	
KGT25N135NDH	1350	50	25	1.90	TO-3P(N)-E	
KGT30N135NDH	1350	60	30	1.95	TO-3P(N)-E	
KGT15N135KDH	1350	30	15	1.90	TO-247	 TO-247
KGT25N135KDH	1350	50	25	1.90	TO-247	
KGT30N135KDH	1350	60	30	1.95	TO-247	

Note) * : Under development

1 in 1 IGBT Module

Type No.	Internal Circuit	BV _{CES} (V)	I _C (A)		V _{CE(ON)} (V)	V _{FM} (V)	IGBT Type	Package	Outline (Unit: mm)
			@T _c =25	@T _c =80					
GM400S17AL		1700	-	400	2.3	1.7	SPT	GMS 01	

2 in 1 IGBT Module

Type No.	Internal Circuit	BV _{CES} (V)	I _C (A)		V _{CE(SAT)} (V)	V _F (V)	IGBT Type	Package	Outline (Unit: mm)
			@25	@80					
GM75HB06BLA		600	100	75	2.1	1.35	NPT	GMB01	
GM100HB06BLA		600	130	100	2.1	1.35		GMB01	
GM150HB06CLA		600	200	150	2.1	1.35		GMB02	
GM200HB06CLA		600	260	200	2.1	1.35		GMB02	
GM200HB06BL		600	265	200	1.6	1.9	Trench Field stop	GMB01	
GM75HB12BLA		1200	100	75	1.9	2		GMB01	
GM100HB12BLA		1200	130	100	1.9	2		GMB01	
GM150HB12CLA		1200	260	150	1.9	2		GMB02	
GM200HB12CLA		1200	340	200	1.9	2		GMB02	
GM300HB12CL		1200	400	300	2.1	2.3		GMB02	

6 in 1, 7 in 1 IGBT Module

Type No.	Internal Circuit	Rectifier		Inverter			Brake Chopper		Package	Outline (Unit: mm)
		BV _{CES} (V)	I _F (A)	BV _{CES} (V)	V _{CE(SAT)} Typ(V)	I _C (A)	BV _{CES} (V)	V _{CE(sat)} (V)		
*GM15TB12ETN		-	-	1200	1.9	15	-	-	GME 01	
*GM25TB12ETN		-	-	1200	1.9	25	-	-		
*GM50TB12FTN		-	-	1200	1.9	50	-	-	GME 02	
*GM75TB12FTN		-	-	1200	1.9	75	-	-		
*GM25RTBC12ETN		1600	25	1220	1.85	25	1220	1.85	GME 01	

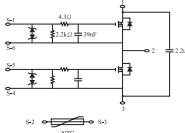
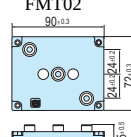
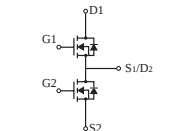
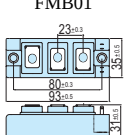
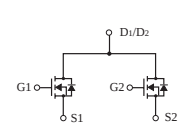
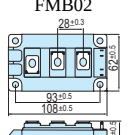
(Note) *: Under Development.

Buck / Boost Module

Type No.	Internal Circuit	V _{CES} (V)	I _D (A)		V _{CE(sat)} (V)	V _F (A)	Package	Outline (Unit: mm)
			@T _c =25	@T _c =80		@T _c =25		
*GM100SH12BL		1200	150	100	1.9	2.0	GMB01	
*GM200SH12CL		1200	300	200	1.9	2.0	GMB02	
*GM100SL12BL		1200	150	100	1.9	2.0	GMB01	
*GM200SL12CL		1200	300	200	1.9	2.0	GMB02	

(Note) *: Under Development.

2 in 1 MOSFET Module

Type No.	Internal Circuit	V _{DSS} (V)	I _D (A)		R _{DS(on)} (mΩ)	Package	Outline (Unit: mm)
			@Tc=25	@Tc=100			
FMMT300		75	836	480	0.9	FMT02	
FMMT311		100	876	540	0.9		
FMMT312		150	450	300	2.0		
FM200HBD75B		75	340	240	2.2	FMB01	
FM200HB1D5B		150	340	240	3.3	FMB02	
FM400HB1D5C		150	650	450	2.0		
FM200CDD75B		75	340	240	2.2	FMB01	
FM200CD1D5B		150	340	240	3.3		
FM400CD1D5C		150	650	450	2.3	FMB02	

6 in 1 MOSFET Module

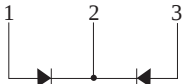
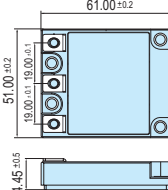
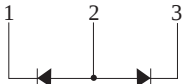
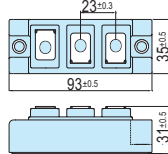
Type No.	Internal Circuit	V _{DSS} (V)	I _D (A)		R _{DS(on)} (mΩ)	Package	Outline (Unit: mm)
			@Tc=25	@Tc=125			
*FM100TB1D5F		150	100	70	16	FMT01	

Note) * : Under Development.

1 in 1 DIODE Module

Type No.	Internal Circuit	V _R (V)	I _{RM} (mA)	I _{F(AV)} (A)	V _F		Package	Outline (Unit: mm)
			@Tc=25	@Tc=100	Typ (V)	@I _F (A)		
DM300S06AF		600	3.2	300	1.2	300	DMS01	

2 in 1 DIODE Module

Type No.	Internal Circuit	V _R (V)	I _{RM} (mA)	I _F (AV) (A)	V _F		Package	Outline (Unit: mm)
			@Tc=25	@Tc=100	Typ (V)	@I _F (A)		
DM200CK02AS	 Common Cathode	200	0.5	200 ▲	1	200	DMB01	
*DM100CK06BF		600	1.6	100	1.5	100	DMB03	
*DM150CK06BF		600	1.6	150	1.5	150		
DM200CK06BF		600	1.6	200	1.5	200	DMB02	
*DM100CA06BF	 Common Anode	600	1.6	100	1.5	100	DMB03	
*DM150CA06BF		600	1.6	150	1.5	150		
DM200CA06BF		600	1.6	200	1.5	200	DMB02	

Note) ▲ : Tc=25

Industrial & General Purpose IC

OP Amp.

Type No.	Function	Operating Voltage(V)	Package	Outline (Unit : mm)
KIA358F	Dual OP Amp.	± 18 or 36	FLP-8	
KIA4558F	Dual Low Noise OP Amp.	± 18 or 36		
KIA324F	Quad OP Amp.	± 18 or 36	FLP-14	
KIA358P	Dual OP Amp.	± 18 or 36	DIP-8	
KIA4558P	Dual Low Noise OP Amp.	± 18 or 36		
KIA324P	Quad OP Amp.	± 18 or 36	DIP-14	
KIA75S358F	Single OP Amp.	± 18 or 36	TSV	
KIA75S558F	Single Low Noise OP Amp.			

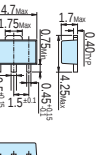
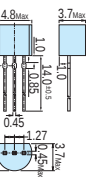
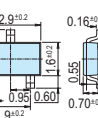
Comparator

Type No.	Function	Operating Voltage (V)	Package	Outline (Unit : mm)
KIA339F	Quad Voltage Comparator	± 18 or 36	FLP-14	
KIA339P	Quad Voltage Comparator	± 18 or 36	DIP-14	
KIA393F	Dual Voltage Comparator	± 18 or 36	FLP-8	
KIA393P	Dual Voltage Comparator	± 18 or 36	DIP-8	
KIA75S393F	Single Voltage Comparator	± 18 or 36	TSV	

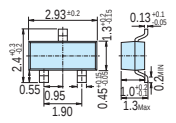
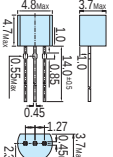
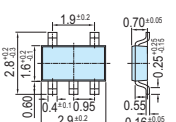
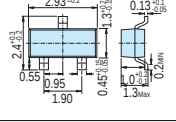
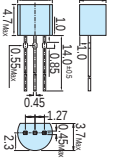
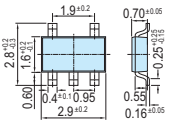
Voltage Stabilizer

Type No.	Mark	Function	Voltage Reference Tolerance (%)	Operating Voltage (V)	Package	Outline (Unit : mm)
KIA431B	-	Shunt Regulator	0.5	2.5 36	TO-92	
KIA431A	-	Shunt Regulator	1	2.5 36		
KIA2431AP	-	Shunt Regulator	1	1.24 16		
KIA431	-	Shunt Regulator	2.2	2.5 36		
KIA431BF	3C	Shunt Regulator	0.5	2.5 36	SOT-89	
KIA431AF	3B	Shunt Regulator	1	2.5 36		
KIA431F	3A	Shunt Regulator	2.2	2.5 36		
KIA431BM	43B	Shunt Regulator	0.5	2.5~36	SOT-23	
KIA431AM	43A	Shunt Regulator	1	2.5~36		
KIA2431BM	24C	Shunt Regulator	0.5	1.24~16		
KIA2431AM	24B	Shunt Regulator	1	1.24~16		

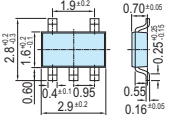
Bipolar Voltage Detector (Active Low)

Type No.		Max. Ratings		Detecting Volts. V _S (V)			Low-Level Output Volts. Vol (V)	Hysteresis Volts. ΔVs (mV)			Circuit Current at on. I _{CCL} (μA)		Circuit Current at off. I _{CCH} (μA)		Package	Outline (Unit : mm)	
		V _{CC} (V)	P _D (mW)	(R _L =200Ω, V _{OL} ≤ 0.4V)			R _L =200Ω	R _L =200Ω			V _{CC} = V _S MIN - 0.05V		V _{CC} = 5.25V				
	Mark				Min.	Typ.	Max.	Max.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.		
KIA7019AF	6A	-0.3 +15.0	500	1.75	1.9	2.05	0.4	30	50	100	300	500	30	50	SOT-89		
KIA7021AF	6B	-0.3 +15.0	500	1.95	2.1	2.25	0.4	30	50	100	300	500	30	50			
KIA7023AF	6C	-0.3 +15.0	500	2.15	2.3	2.45	0.4	30	50	100	300	500	30	50			
KIA7025AF	6D	-0.3 +15.0	500	2.35	2.5	2.65	0.4	30	50	100	300	500	30	50			
KIA7027AF	6E	-0.3 +15.0	500	2.55	2.7	2.85	0.4	30	50	100	300	500	30	50			
KIA7029AF	6F	-0.3 +15.0	500	2.75	2.9	3.05	0.4	30	50	100	300	500	30	50			
KIA7031AF	6G	-0.3 +15.0	500	2.95	3.1	3.25	0.4	30	50	100	300	500	30	50			
KIA7032AF	6H	-0.3 +15.0	500	3.05	3.2	3.35	0.4	30	50	100	300	500	30	50			
KIA7033AF	6J	-0.3 +15.0	500	3.15	3.3	3.45	0.4	30	50	100	300	500	30	50			
KIA7034AF	6K	-0.3 +15.0	500	3.25	3.4	3.55	0.4	30	50	100	300	500	30	50			
KIA7035AF	6L	-0.3 +15.0	500	3.35	3.5	3.65	0.4	30	50	100	300	500	30	50			
KIA7036AF	6M	-0.3 +15.0	500	3.45	3.6	3.75	0.4	30	50	100	300	500	30	50			
KIA7039AF	6N	-0.3 +15.0	500	3.75	3.9	4.05	0.4	30	50	100	300	500	30	50			
KIA7042AF	6P	-0.3 +15.0	500	4.05	4.2	4.35	0.4	30	50	100	300	500	30	50			
KIA7045AF	6R	-0.3 +15.0	500	4.35	4.5	4.65	0.4	30	50	100	300	500	30	50			
KIA7019AP	-	-0.3 +15.0	400	1.75	1.9	2.05	0.4	30	50	100	300	500	30	50	TO-92		
KIA7021AP	-	-0.3 +15.0	400	1.95	2.1	2.25	0.4	30	50	100	300	500	30	50			
KIA7023AP	-	-0.3 +15.0	400	2.15	2.3	2.45	0.4	30	50	100	300	500	30	50			
KIA7025AP	-	-0.3 +15.0	400	2.35	2.5	2.65	0.4	30	50	100	300	500	30	50			
KIA7027AP	-	-0.3 +15.0	400	2.55	2.7	2.85	0.4	30	50	100	300	500	30	50			
KIA7029AP	-	-0.3 +15.0	400	2.75	2.9	3.05	0.4	30	50	100	300	500	30	50			
KIA7031AP	-	-0.3 +15.0	400	2.95	3.1	3.25	0.4	30	50	100	300	500	30	50			
KIA7032AP	-	-0.3 +15.0	400	3.05	3.2	3.35	0.4	30	50	100	300	500	30	50			
KIA7033AP	-	-0.3 +15.0	400	3.15	3.3	3.45	0.4	30	50	100	300	500	30	50			
KIA7034AP	-	-0.3 +15.0	400	3.25	3.4	3.55	0.4	30	50	100	300	500	30	50			
KIA7035AP	-	-0.3 +15.0	400	3.35	3.5	3.65	0.4	30	50	100	300	500	30	50			
KIA7036AP	-	-0.3 +15.0	400	3.45	3.6	3.75	0.4	30	50	100	300	500	30	50			
KIA7039AP	-	-0.3 +15.0	400	3.75	3.9	4.05	0.4	30	50	100	300	500	30	50			
KIA7042AP	-	-0.3 +15.0	400	4.05	4.2	4.35	0.4	30	50	100	300	500	30	50			
KIA7045AP	-	-0.3 +15.0	400	4.35	4.5	4.65	0.4	30	50	100	300	500	30	50			
KIA7019AT	6A	-0.3 +15.0	350	1.75	1.9	2.05	0.4	30	50	100	300	500	30	50	TSM		
KIA7021AT	6B	-0.3 +15.0	350	1.95	2.1	2.25	0.4	30	50	100	300	500	30	50			
KIA7023AT	6C	-0.3 +15.0	350	2.15	2.3	2.45	0.4	30	50	100	300	500	30	50			
KIA7025AT	6D	-0.3 +15.0	350	2.35	2.5	2.65	0.4	30	50	100	300	500	30	50			
KIA7027AT	6E	-0.3 +15.0	350	2.55	2.7	2.85	0.4	30	50	100	300	500	30	50			
KIA7029AT	6F	-0.3 +15.0	350	2.75	2.9	3.05	0.4	30	50	100	300	500	30	50			
KIA7031AT	6G	-0.3 +15.0	350	2.95	3.1	3.25	0.4	30	50	100	300	500	30	50			
KIA7032AT	6H	-0.3 +15.0	350	3.05	3.2	3.35	0.4	30	50	100	300	500	30	50			
KIA7033AT	6J	-0.3 +15.0	350	3.15	3.3	3.45	0.4	30	50	100	300	500	30	50			
KIA7034AT	6K	-0.3 +15.0	350	3.25	3.4	3.55	0.4	30	50	100	300	500	30	50			
KIA7035AT	6L	-0.3 +15.0	350	3.35	3.5	3.65	0.4	30	50	100	300	500	30	50			
KIA7036AT	6M	-0.3 +15.0	350	3.45	3.6	3.75	0.4	30	50	100	300	500	30	50			
KIA7039AT	6N	-0.3 +15.0	350	3.75	3.9	4.05	0.4	30	50	100	300	500	30	50			
KIA7042AT	6P	-0.3 +15.0	350	4.05	4.2	4.35	0.4	30	50	100	300	500	30	50			
KIA7045AT	6R	-0.3 +15.0	350	4.35	4.5	4.65	0.4	30	50	100	300	500	30	50			

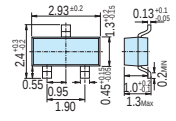
CMOS Detector (Active Low, CMOS, Open-Drain Output Type)

Type No.	Output Type	Max. Ratings		Detecting Volts. Vs (V)			Accuracy (%)	I _{DD} (μ A)		Package	Outline (Unit : mm)
		V _{DD(Max)} (V)	I _{OUT} (mA)	Min.	Max.	Step.		Typ.	Max.		
KIC7108~60M	CMOS Type	12	20	0.8	6.0	0.1	± 1	0.25	1.0	SOT-23	
KIC7108~60P		12	20	0.8	6.0	0.1	± 1	0.25	1.0	TO-92	
KIC7108~60T5		12	20	0.8	6.0	0.1	± 1	0.25	1.0	TSV	
KIC7508~60M	Open-Drain Type	12	20	0.8	6.0	0.1	± 1	0.25	1.0	SOT-23	
KIC 7508~60P		12	20	0.8	6.0	0.1	± 1	0.25	1.0	TO-92	
KIC7508~60T5		12	20	0.8	6.0	0.1	± 1	0.25	1.0	TSV	

CMOS External Delay Reset IC (Active Low, CMOS, Open-Drain Output Type)

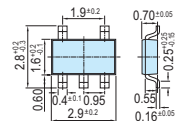
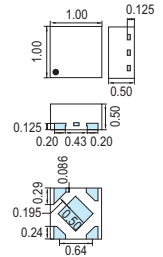
Type No.	Output Type	Max. Ratings		Detecting Volts. Vs (V)			Accuracy (%)	I _{DD} (μ A)		Package	Outline (Unit : mm)
		V _{DD(Max)} (V)	I _{OUT} (mA)	Min.	Max.	Step.		Typ.	Max.		
KIC7208~60M	CMOS Type	12	20	0.8	6.0	0.1	± 1	0.25	1.0	TSV	
KIC7608~60M	Open-Drain Type										

CMOS Internal Delay Reset IC (Active Low, CMOS, Open-Drain Output Type)

Type No.	Output Type	Max. Ratings		V _{th} (V)			Accuracy (%)	Delay Time (ms)	I _{DD} (μ A)		Package	Outline (Unit : mm)
		V _{DD(Max)} (V)	I _{OUT} (mA)	Min.	Max.	Step.			Typ.	Max.		
KIC73A~E16~50M/M2	CMOS Type	7	20	1.6	5.0	0.1	± 1	A: 240 B: 50 C: 100 D: 200	0.5	2.0	SOT-23	
KIC77A~E16~50M/M2	Open-Drain Type											

150mA Small Package CMOS LDO Voltage Regulator (On/Off Controllable)

Type No.	Max. Ratings			V _{OUT} (V)			Reg. Line (%/V)			Reg. Load (mV)			V _{DROP} (V)		Package	Outline (Unit : mm)		
	V _{IN} (V)	I _O (A)	P _D (W) (Ta=25)	(Tj=25)			Ta=25 Max.	V _{IN} (V)		Ta=25 Typ.	I _{OUT} (mA)		(Tj=25) Typ.	I _{OUT} (mA)				
				Min.	Typ.	Max		Min.	Max.		Min.	Max.						
KIC3213MF12	5.5	0.15	0.4	-20(mV)	1.2	+20(mV)	2.5	0.1(%)	V _O +1	5.5	10	1	150	0.5	150	UDFN1010-4		
KIC3213MF13	5.5	0.15	0.4	-20(mV)	1.3	+20(mV)	2.5	0.1(%)	V _O +1	5.5	10	1	150	0.5	150			
KIC3213MF14	5.5	0.15	0.4	-20(mV)	1.4	+20(mV)	2.5	0.1(%)	V _O +1	5.5	10	1	150	0.5	150			
KIC3213MF15	5.5	0.15	0.4	-20(mV)	1.5	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.38	150			
KIC3213MF16	5.5	0.15	0.4	-20(mV)	1.6	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.38	150			
KIC3213MF17	5.5	0.15	0.4	-20(mV)	1.7	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.34	150			
KIC3213MF18	5.5	0.15	0.4	-20(mV)	1.8	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.34	150			
KIC3213MF19	5.5	0.15	0.4	-20(mV)	1.9	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.34	150			
KIC3213MF20	5.5	0.15	0.4	-20(mV)	2.0	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.28	150			
KIC3213MF21	5.5	0.15	0.4	-20(mV)	2.1	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.28	150			
KIC3213MF22	5.5	0.15	0.4	-20(mV)	2.2	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.28	150			
KIC3213MF23	5.5	0.15	0.4	-20(mV)	2.3	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.28	150			
KIC3213MF24	5.5	0.15	0.4	-20(mV)	2.4	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.28	150			
KIC3213MF25	5.5	0.15	0.4	-20(mV)	2.5	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.22	150			
KIC3213MF26	5.5	0.15	0.4	-20(mV)	2.6	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.22	150			
KIC3213MF27	5.5	0.15	0.4	-20(mV)	2.7	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.22	150			
KIC3213MF28	5.5	0.15	0.4	-20(mV)	2.8	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.21	150			
KIC3213MF29	5.5	0.15	0.4	-20(mV)	2.9	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.21	150			
KIC3213MF30	5.5	0.15	0.4	-20(mV)	3.0	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.21	150			
KIC3213MF31	5.5	0.15	0.4	-20(mV)	3.1	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.21	150			
KIC3213MF32	5.5	0.15	0.4	-20(mV)	3.2	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.21	150			
KIC3213MF33	5.5	0.15	0.4	-20(mV)	3.3	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.21	150			
KIC3213T12	5.5	0.15	0.4	-20(mV)	1.2	+20(mV)	2.5	0.1(%)	V _O +1	5.5	10	1	150	0.5	150	TSV		
KIC3213T13	5.5	0.15	0.4	-20(mV)	1.3	+20(mV)	2.5	0.1(%)	V _O +1	5.5	10	1	150	0.5	150			
KIC3213T14	5.5	0.15	0.4	-20(mV)	1.4	+20(mV)	2.5	0.1(%)	V _O +1	5.5	10	1	150	0.5	150			
KIC3213T15	5.5	0.15	0.4	-20(mV)	1.5	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.38	150			
KIC3213T16	5.5	0.15	0.4	-20(mV)	1.6	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.38	150			
KIC3213T17	5.5	0.15	0.4	-20(mV)	1.7	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.34	150			
KIC3213T18	5.5	0.15	0.4	-20(mV)	1.8	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.34	150			
KIC3213T19	5.5	0.15	0.4	-20(mV)	1.9	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.34	150			
KIC3213T20	5.5	0.15	0.4	-20(mV)	2.0	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.28	150			
KIC3213T21	5.5	0.15	0.4	-20(mV)	2.1	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.28	150			
KIC3213T22	5.5	0.15	0.4	-20(mV)	2.2	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.28	150			
KIC3213T23	5.5	0.15	0.4	-20(mV)	2.3	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.28	150			
KIC3213T24	5.5	0.15	0.4	-20(mV)	2.4	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.28	150			
KIC3213T25	5.5	0.15	0.4	-20(mV)	2.5	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.22	150			
KIC3213T26	5.5	0.15	0.4	-20(mV)	2.6	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.22	150			
KIC3213T27	5.5	0.15	0.4	-20(mV)	2.7	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.22	150			
KIC3213T28	5.5	0.15	0.4	-20(mV)	2.8	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.21	150			
KIC3213T29	5.5	0.15	0.4	-20(mV)	2.9	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.21	150			
KIC3213T30	5.5	0.15	0.4	-20(mV)	3.0	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.21	150			
KIC3213T31	5.5	0.15	0.4	-20(mV)	3.1	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.21	150			
KIC3213T32	5.5	0.15	0.4	-20(mV)	3.2	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.21	150			
KIC3213T33	5.5	0.15	0.4	-20(mV)	3.3	+20(mV)	V _O +1	0.1(%)	V _O +1	5.5	10	1	150	0.21	150			



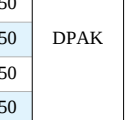
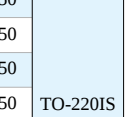
1A High Performance CMOS LDO Voltage Regulator (On/Off Controllable) (Positive)

Type No.	Max. Ratings			V _{OUT} (V)				Reg. Line (%/V)			Reg. Load (mV)			V _{DROP} (V)		Package	Outline (Unit : mm)
	V _{IN} (V)	I _O (A)	P _D (W) (T _a =25)	(T _j =25)			V _{IN} (V)	T _a =25	V _{IN} (V)		T _a =25	I _{OUT} (mA)		(T _j =25)	I _{OUT} (A)		
				Min.	Typ.	Max		Max.	Min.	Max.	Typ.	Min.	Max.	Typ.			
KIC3241S10	5.5	1.0	1.0	-15(mV)	1.0	+15(mV)	2.1	0.2	V _O +0.5	5.5	15	1	300	1.2	1.0	SOT89-5	

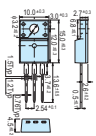
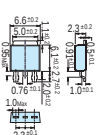
0.15A 3-Terminal Voltage Regulator (Positive)

Type No.		Max. Ratings			V _{OUT} (V)				Reg. Line (mV)			Reg. Load (mV)			V _{DROP} (V)		Package	Outline (Unit : mm)
		V _{IN} (V)	I _O (A)	P _D (mW) (T _a =25)	(T _j =25)			V _{IN} (V)	(T _a =25)		(T _a =25)		I _{OUT} (mA)	(T _a =25)	I _{OUT} (mA)			
	Mark				Min.	Typ.	Max.		Max.	Min.	Max.	Max.	Min.	Max.	Typ.			
KIA78L05F	8A	35	0.15	500	4.75	5	5.25	10	150	7	20	60	1	100	1.7	40	SOT-89	

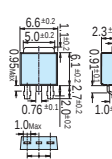
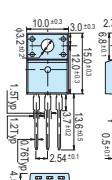
0.25A 3-Terminal Low Dropout Voltage Regulator (Positive)

Type No.	Max. Ratings			V _{OUT} (V)					Reg. Line (mV)			Reg. Load (mV)			V _{DROP} (V)		Package	Outline (Unit : mm)	
	V _{IN} (V)	I _O (A)	P _D (W) (Ta=25 °C)	(Ta=-40 ~ 85 °C)			V _{IN} (V)		(Ta=25 °C)		V _{IN} (V)		(Ta=25 °C)		I _{OUT} (mA)	(Ta=25 °C)			I _{OUT} (mA)
				Min.	Typ.	Max.	Min.	Max.	Max.	Min.	Max.	Max.	Min.	Max.					
KIA78DL05F	29	0.25	12	4.5	5	5.5	5.35	26	30	6	26	50	10	200	0.15	50	DPAK		
KIA78DL06F	29	0.25	12	5.4	6	6.6	6.35	26	36	7	26	60	10	200	0.15	50			
KIA78DL08F	29	0.25	12	7.2	8	8.8	8.35	26	45	9	26	80	10	200	0.15	50			
KIA78DL09F	29	0.25	12	8.1	9	9.9	9.35	26	50	10	26	90	10	200	0.15	50			
KIA78DL10F	29	0.25	12	9	10	11	10.35	26	60	11	26	100	10	200	0.15	50			
KIA78DL12F	29	0.25	12	10.8	12	13.2	12.35	26	70	13	26	120	10	200	0.15	50			
KIA78DL15F	29	0.25	12	13.5	15	16.5	15.35	26	80	16	26	150	10	200	0.15	50	TO-220IS		
KIA78DL05PI	29	0.25	20	4.5	5	5.5	5.35	26	30	6	26	50	10	200	0.15	50			
KIA78DL06PI	29	0.25	20	5.4	6	6.6	6.35	26	36	7	26	60	10	200	0.15	50			
KIA78DL08PI	29	0.25	20	7.2	8	8.8	8.35	26	45	9	26	80	10	200	0.15	50			
KIA78DL09PI	29	0.25	20	8.1	9	9.9	9.35	26	50	10	26	90	10	200	0.15	50			
KIA78DL10PI	29	0.25	20	9	10	11	10.35	26	60	11	26	100	10	200	0.15	50			
KIA78DL12PI	29	0.25	20	10.8	12	13.2	12.35	26	70	13	26	120	10	200	0.15	50			
KIA78DL15PI	29	0.25	20	13.5	15	16.5	15.35	26	80	16	26	150	10	200	0.15	50			

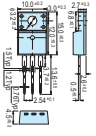
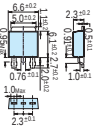
0.5A 3-Terminal Voltage Regulator (Positive)

Type No.	Max. Ratings			V _{OUT} (V)				Reg. Line (mV)			Reg. Load (mV)			V _{DROP} (V)		Package	Outline (Unit : mm)
	V _{IN} (V)	I _O (A)	P _D (W) (Ta=25)	(Tj=25)			V _{IN} (V)	(Ta=25)	I _{OUT} (mA)	(Ta=25)	I _{OUT} (mA)						
				Min.	Typ.	Max.						Max.	Min.	Max.	Max.		
KIA78M05PI	35	0.5	20.8	4.8	5	5.2	10	100	7.2	25	100	5	500	2	500	TO-220IS	
KIA78M08PI	35	0.5	20.8	7.7	8	8.3	14	100	10.5	25	100	5	500	2	500		
KIA78M12PI	35	0.5	20.8	11.5	12	12.5	19	100	14.5	30	240	5	500	2	500		
KIA78M15PI	35	0.5	20.8	14.4	15	15.6	23	100	17.5	30	300	5	500	2	500		
KIA78M05F	35	0.5	12	4.8	5	5.2	10	100	7.2	25	100	5	500	2	500	DPAK	
KIA78M08F	35	0.5	12	7.7	8	8.3	14	100	10.5	25	100	5	500	2	500		
KIA78M12F	35	0.5	12	11.5	12	12.5	19	100	14.5	30	240	5	500	2	500		
KIA78M15F	35	0.5	12	14.4	15	15.6	23	100	17.5	30	300	5	500	2	500		

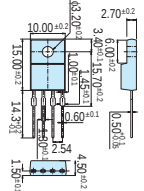
1A 3-Terminal Voltage Regulator (Positive)

Type No.	Max. Ratings			V _{OUT} (V)				Reg. Line (mV)			Reg. Load (mV)			V _{DROP} (V)		Package	Outline (Unit : mm)
	V _{IN} (V)	I _O (A)	P _D (W) (Ta=25)	(Tj=25)			V _{IN} (V)	(Ta=25)	Max.	Min.	Max.	(Ta=25)	I _{OUT}	(Ta=25)	I _{OUT} (A)		
				Min.	Typ.	Max.											
KIA7805AF	35	1	12	4.8	5	5.2	10	100	7	25	100	5	1.4	2	1	DPAK	
KIA7806AF	35	1	12	5.75	6	6.25	11	120	8	25	120	5	1.4	2	1		
KIA7807AF	35	1	12	6.72	7	7.28	12	140	9	25	140	5	1.4	2	1		
KIA7808AF	35	1	12	7.7	8	8.3	14	160	10.5	25	160	5	1.4	2	1		
KIA7809AF	35	1	12	8.64	9	9.36	15	180	11.5	26	180	5	1.4	2	1		
KIA7810AF	35	1	12	9.6	10	10.4	16	200	12.5	27	200	5	1.4	2	1		
KIA7812AF	35	1	12	11.5	12	12.5	19	240	14.5	30	240	5	1.4	2	1		
KIA7815AF	35	1	12	14.4	15	15.6	23	300	17.5	30	300	5	1.4	2	1		
KIA7818AF	40	1	12	17.3	18	18.7	27	360	21	33	360	5	1.4	2	1		
KIA7820AF	40	1	12	19.2	20	20.8	29	400	23	35	400	5	1.4	2	1		
KIA7824AF	40	1	12	23	24	25	33	480	27	38	480	5	1.4	2	1		
KIA7805API	35	1	20.8	4.8	5	5.2	10	100	7	25	100	5	1.4	2	1	TO-220IS	
KIA7806API	35	1	20.8	5.75	6	6.25	11	120	8	25	120	5	1.4	2	1		
KIA7807API	35	1	20.8	6.72	7	7.28	12	140	9	25	140	5	1.4	2	1		
KIA7808API	35	1	20.8	7.7	8	8.3	14	160	10.5	25	160	5	1.4	2	1		
KIA7809API	35	1	20.8	8.64	9	9.36	15	180	11.5	26	180	5	1.4	2	1		
KIA7810API	35	1	20.8	9.6	10	10.4	16	200	12.5	27	200	5	1.4	2	1		
KIA7812API	35	1	20.8	11.5	12	12.5	19	240	14.5	30	240	5	1.4	2	1		
KIA7815API	35	1	20.8	14.4	15	15.6	23	300	17.5	30	300	5	1.4	2	1		
KIA7818API	40	1	20.8	17.3	18	18.7	27	360	21	33	360	5	1.4	2	1		
KIA7820API	40	1	20.8	19.2	20	20.8	29	400	23	35	400	5	1.4	2	1		
KIA7824API	40	1	20.8	23	24	25	33	480	27	38	480	5	1.4	2	1		

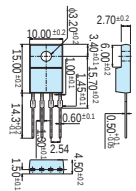
1A 3-Terminal Adjustable Voltage Regulator (Positive)

Type No.	Max. Ratings			Reg. Line (%/V)			Reg. Load (%)			Adjustable Pin Current I_{adj} (μA)			Current Limit I_O (MAX) (A) ($V_{IN} - V_{OUT} \leq 15V$, $P \leq P_{MAX}$)			Package	Outline (Unit : mm)		
	$V_{IN} - V_{OUT}$ (V)	I_O (A)	P_D (W)	$I_O=10(mA)$ $V_{IN} - V_{OUT}$ (V)			$(T_a=25^\circ C)$ I_{OUT} (mA)			Min.	Typ.	Max.	Min.	Typ.	Max.				
				Max.	Min.	Max.	Max.	Min.	Max.										
KIA317PI	40	1.5	2.0	0.04	3	40	0.5	10	I_{MAX}	-	50	100	1.5	2.2	3.4	TO-220IS			
KIA317F	40	1.5	1.3	0.04	3	40	0.5	10	I_{MAX}	-	50	100	1.5	2.2	3.4	DPAK			

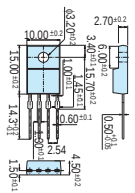
1A 4-Terminal Low Dropout Voltage Regulator (On/Off Controllable) (Positive)

Type No.	Max. Ratings			V_{OUT} (V)			V_{IN} (V)	Reg. Line (%)			Reg. Load (%)			V_{DROP} (V)		Package	Outline (Unit: mm)			
	V_{IN} (V)	I_O (A)	P_D (W) ($T_a=25^\circ C$)	$(T_a=25^\circ C)$				$(T_a=25^\circ C)$ V_{IN} (V)			$(T_a=25^\circ C)$ I_{OUT}			$(T_a=25^\circ C)$ V_{IN} (V)						
				Min.	Typ.	Max.		Max.	Min.	Max.	Max.	Min.(mA)	Max.(A)	Max.	V_{IN} (V)					
KIA78R00PI	35	1	15	1.26	1.29	1.32	15	2.5	11	28	2	5	1	0.5	$0.95V_o$	TO-220IS-4				
KIA78R25PI	35	1	15	2.438	2.5	2.562	4.2	2.5	3.2	10	2	5	1	0.5	$0.95V_o$					
KIA78R33PI	35	1	15	3.22	3.3	3.38	5	2.5	4	10	2	5	1	0.5	$0.95V_o$					
KIA78R05PI	35	1	15	4.88	5	5.12	7	2.5	6	12	2	5	1	0.5	$0.95V_o$					
KIA78R06PI	35	1	15	5.85	6	6.15	8	2.5	7	15	2	5	1	0.5	$0.95V_o$					
KIA78R08PI	35	1	15	7.8	8	8.2	10	2.5	9	25	2	5	1	0.5	$0.95V_o$					
KIA78R09PI	35	1	15	8.78	9	9.22	15	2.5	10	25	2	5	1	0.5	$0.95V_o$					
KIA78R10PI	35	1	15	9.75	10	10.25	16	2.5	11	26	2	5	1	0.5	$0.95V_o$					
KIA78R12PI	35	1	15	11.7	12	12.3	18	2.5	13	29	2	5	1	0.5	$0.95V_o$					
KIA78R15PI	35	1	15	14.7	15	15.3	21	2.5	16	32	2	5	1	0.5	$0.95V_o$					

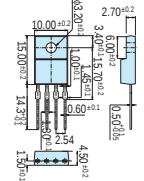
2A 4-Terminal Low Dropout Voltage Regulator (On/Off Controllable) (Positive)

Type No.	Max. Ratings			V _{OUT} (V)			V _{IN} (V)	Reg. Line (%)			Reg. Load (%)			V _{DROP} (V)		Package	Outline (Unit : mm)			
	V _{IN} (V)	I _O (A)	P _D (W) (Ta=25 °C)	(Ta=25 °C)				(Ta=25 °C)			(Ta=25 °C)			(Ta=25 °C)						
				Min.	Typ.	Max.		Max.	Min.	Max.	Max.	Min.(mA)	Max.(A)	Max.	V _{IN} (V)					
KIA278R00PI	35	2	15	1.26	1.29	1.32	15	2.5	11	28	2	5	2	0.5	0.95V _O	TO-220IS-4				
KIA278R25PI	35	2	15	2.438	2.5	2.562	4.2	2.5	3.2	10	2	5	2	0.5	0.95V _O					
KIA278R33PI	35	2	15	3.22	3.3	3.38	5	2.5	4	10	2	5	2	0.5	0.95V _O					
KIA278R05PI	35	2	15	4.88	5	5.12	7	2.5	6	12	2	5	2	0.5	0.95V _O					
KIA278R06PI	35	2	15	5.85	6	6.15	8	2.5	7	15	2	5	2	0.5	0.95V _O					
KIA278R08PI	35	2	15	7.8	8	8.2	10	2.5	9	25	2	5	2	0.5	0.95V _O					
KIA278R09PI	35	2	15	8.78	9	9.22	15	2.5	10	25	2	5	2	0.5	0.95V _O					
KIA278R10PI	35	2	15	9.75	10	10.25	16	2.5	11	26	2	5	2	0.5	0.95V _O					
KIA278R12PI	35	2	15	11.7	12	12.3	18	2.5	13	29	2	5	2	0.5	0.95V _O					
KIA278R15PI	35	2	15	14.7	15	15.3	21	2.5	16	32	2	5	2	0.5	0.95V _O					

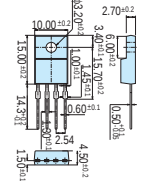
3A Terminal Low Dropout Voltage Regulator (On/Off Controllable) (Positive)

Type No.	Max. Ratings			V _{OUT} (V)			Reg. Line (%)			Reg. Load (%)			V _{DROP} (V)		Package	Outline (Unit : mm)	
	V _{IN} (V)	I _O (A)	P _D (W) (Ta=25 °C)	(Ta=25 °C)			V _{IN} (V)	(Ta=25 °C)		(Ta=25 °C)		(Ta=25 °C)					
				Min.	Typ.	Max.		Max.	Min.	Max.	Max.	Min.(mA)	Max.(A)	Max.			V _{IN} (V)
K1A378R00PI	35	3	15	1.26	1.29	1.32	15	2.5	11	28	2	5	3	0.5	0.95V _O	TO-220IS-4	
K1A378R25PI	35	3	15	2.438	2.5	2.562	4.2	2.5	3.2	10	2	5	3	0.5	0.95V _O		
K1A378R33PI	35	3	15	3.22	3.3	3.38	5	2.5	4	10	2	5	3	0.5	0.95V _O		
K1A378R05PI	35	3	15	4.88	5	5.12	7	2.5	6	12	2	5	3	0.5	0.95V _O		
K1A378R06PI	35	3	15	5.85	6	6.15	8	2.5	7	15	2	5	3	0.5	0.95V _O		
K1A378R08PI	35	3	15	7.8	8	8.2	10	2.5	9	25	2	5	3	0.5	0.95V _O		
K1A378R09PI	35	3	15	8.78	9	9.22	15	2.5	10	25	2	5	3	0.5	0.95V _O		
K1A378R10PI	35	3	15	9.75	10	10.25	16	2.5	11	26	2	5	3	0.5	0.95V _O		
K1A378R12PI	35	3	15	11.7	12	12.3	18	2.5	13	29	2	5	3	0.5	0.95V _O		
K1A378R15PI	35	3	15	14.7	15	15.3	21	2.5	16	32	2	5	3	0.5	0.95V _O		

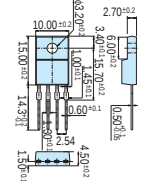
2A 4/5- Terminal Low Dropout Voltage Regulator (Low Supply Current & On/Off Controllable) (Positive)

Type No.	Max. Ratings			V _{OUT} (V)			Reg. Line (%)			Reg. Load (%)			I _{Q(OFF)} (μA)		Package	Outline (Unit : mm)		
	V _{IN} (V)	I _O (A)	P _D (W) (Ta=25)	(Ta=25)			V _{IN} (V)	(Ta=25)	V _{IN} (V)	(Ta=25)	I _{OUT}	(Ta=25)	V _{IN} (V)	I _{Q(OFF)} (μA)				
				Min.	Typ.	Max.												
KIA278R000PI	10	2	15	1.22	1.25	1.28	2.35	1	V _O +1	8.5	2	5	2	5	2.8	TO-220IS-4		
KIA278R015PI	10	2	15	1.45	1.5	1.55	2.35	1	2.5	5.5	2	5	2	5	3.8			
KIA278R018PI	10	2	15	1.75	1.8	1.85	2.35	1	2.5	5.5	2	5	2	5	3.8			
KIA278R025PI	10	2	15	2.438	2.5	2.562	4.5	1	3	6.5	2	5	2	5	4.5			
KIA278R033PI	10	2	15	3.218	3.3	3.382	5.3	1	3.8	7	2	5	2	5	5.3			
KIA278R050PI	10	2	15	4.88	5	5.12	7	1	5.5	7	2	5	2	5	7			

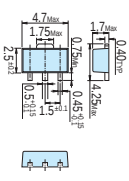
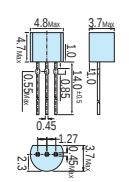
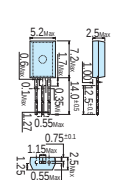
3A 4/5-Terminal Low Dropout Voltage Regulator (Low Supply Current & On/Off Controllable) (Positive)

Type No.	Max. Ratings			V _{OUT} (V)			Reg. Line (%)			Reg. Load (%)			I _{Q(OFF)} (μA)		Package	Outline (Unit : mm)		
	V _{IN} (V)	I _O (A)	P _D (W) (Ta=25)	(Ta=25)			V _{IN} (V)	(Ta=25)	V _{IN} (V)	(Ta=25)	I _{OUT}	(Ta=25)	V _{IN} (V)	I _{Q(OFF)} (μA)				
				Min.	Typ.	Max.												
KIA378R000PI	7	3	15	1.22	1.25	1.28	2.35	1	V _O +1	6	2	5	3	5	2.8	TO-220IS-4		
KIA378R015PI	7	3	15	1.45	1.5	1.55	2.35	0.1	2.5	5.5	1	5	3.5	5	3.8			
KIA378R018PI	7	3	15	1.75	1.8	1.85	2.35	0.1	2.5	5.5	1	5	3.5	5	3.8			
KIA378R025PI	7	3	15	2.438	2.5	2.562	4.5	0.1	3	6.5	1	5	3.5	5	4.5			
KIA378R033PI	7	3	15	3.218	3.3	3.382	5.3	0.1	3.8	7	1	5	3.5	5	5.3			
KIA378R050PI	7	3	15	4.88	5	5.12	7	0.1	5.5	7	1	5	3.5	5	7			

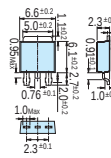
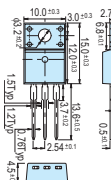
5A 4/5-Terminal Low Dropout Voltage Regulator (Low Supply Current & On/Off Controllable) (Positive)

Type No.	Max. Ratings			V _{OUT} (V)				Reg. Line (%)			Reg. Load (%)			I _{Q(Off)} (μA)		Package	Outline (Unit : mm)
	V _{IN} (V)	I _O (A)	P _D (W) (T _a =25)	(T _a =25)			V _{IN} (V)	(T _a =25)		I _{OUT}	(T _a =25)		V _{IN} (V)				
				Min.	Typ.	Max.		Max.	Min.		Max.	Min.(mA)		Max.(A)	Typ.		
KIA578R000PI	16	5	15	1.22	1.25	1.28	2.35	1	V _O +1	7	2	5	5	5	2.8	TO-220IS-4	
KIA578R015PI	16	5	15	1.45	1.5	1.55	2.35	1	2.5	5.5	2	5	5	5	3.8		
KIA578R018PI	16	5	15	1.75	1.8	1.85	2.35	1	2.5	5.5	2	5	5	5	3.8		
KIA578R025PI	16	5	15	2.438	2.5	2.562	4.5	1	3	6.5	2	5	5	5	4.5		
KIA578R033PI	16	5	15	3.218	3.3	3.382	5.3	1	3.8	7	2	5	5	5	5.3		
KIA578R050PI	16	5	15	4.88	5	5.12	7	1	5.5	7	2	5	5	5	7		

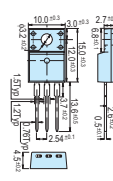
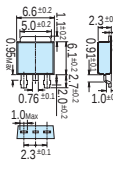
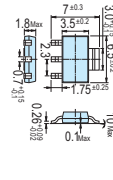
0.15A 3-Terminal Voltage Regulator (Negative)

Type No.		Max. Ratings			V _{OUT} (V)				Reg. Line (mV)			Reg. Load (mV)			V _{DROP} (V)		Package	Outline (Unit : mm)
		V _{IN} (V)	I _O (A)	P _D (W) (Ta=25)	(Ta=25)			V _{IN} (V)	(Ta=25)		(Ta=25)		I _{OUT} (mA)	(Ta=25)				
					Min.	Typ.	Max.		Max.	Min.	Max.	Max.		Min.	Max.			
K1A79L05F	9A	-35	0.15	500	-5.2	-5	-4.8	-10	150	-20	-7	60	1	100	1.7	40	SOT-89	
K1A79L06F	9B	-35	0.15	500	-6.24	-6	-5.76	-11	150	-21	-8.1	70	1	100	1.7	40		
K1A79L08F	9C	-35	0.15	500	-8.3	-8	-7.7	-14	175	-23	-10.5	80	1	100	1.7	40		
K1A79L09F	9D	-35	0.15	500	-9.36	-9	-8.64	-15	200	-24	-11.4	90	1	100	1.7	40		
K1A79L10F	9E	-35	0.15	500	-10.4	-10	-9.6	-16	230	-25	-12.5	90	1	100	1.7	40		
K1A79L12F	9F	-35	0.15	500	-12.5	-12	-11.5	-19	250	-27	-14.5	100	1	100	1.7	40		
K1A79S05P	-	-35	0.15	600	-5.2	-5	-4.8	-10	150	-20	-7	60	1	100	1.7	40	TO-92	
K1A79S06P	-	-35	0.15	600	-6.24	-6	-5.76	-11	150	-21	-8.1	70	1	100	1.7	40		
K1A79S08P	-	-35	0.15	600	-8.3	-8	-7.7	-14	175	-23	-10.5	80	1	100	1.7	40		
K1A79S09P	-	-35	0.15	600	-9.36	-9	-8.64	-15	200	-24	-11.4	90	1	100	1.7	40		
K1A79S10P	-	-35	0.15	600	-10.4	-10	-9.6	-16	230	-25	-12.5	90	1	100	1.7	40		
K1A79S12P	-	-35	0.15	600	-12.5	-12	-11.5	-19	250	-27	-14.5	100	1	100	1.7	40		
K1A79L05BP	-	-35	0.15	800	-5.2	-5	-4.8	-10	150	-20	-7	60	1	100	1.7	40	TO-92L	
K1A79L06BP	-	-35	0.15	800	-6.24	-6	-5.76	-11	150	-21	-8.1	70	1	100	1.7	40		
K1A79L08BP	-	-35	0.15	800	-8.3	-8	-7.7	-14	175	-23	-10.5	80	1	100	1.7	40		
K1A79L09BP	-	-35	0.15	800	-9.36	-9	-8.64	-15	200	-24	-11.4	90	1	100	1.7	40		
K1A79L10BP	-	-35	0.15	800	-10.4	-10	-9.6	-16	230	-25	-12.5	90	1	100	1.7	40		
K1A79L12BP	-	-35	0.15	800	-12.5	-12	-11.5	-19	250	-27	-14.5	100	1	100	1.7	40		

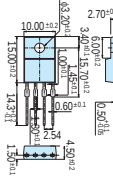
1A 3-Terminal Voltage Regulator (Negative)

Type No.	Max. Ratings			V _{OUT} (V)				Reg. Line (mV)			Reg. Load (mV)			V _{DROP} (V)		Package	Outline (Unit: mm)
	V _{IN} (V)	I _O (A)	P _D (W) (Ta=25)	(Ta=25)			V _{IN} (V)	(Ta=25)		(Ta=25)		I _{OUT} (mA)	(Ta=25)				
				Min.	Typ.	Max.		Max.	Min.	Max.	Max.		Min.(m)	Max.(A)	Typ.		
KIA7905F	-35	1	12	-5.2	-5	-4.8	-10	50	-12	-8	100	5	1.5	2	1	DPAK	
KIA7906F	-35	1	12	-6.25	-6	-5.75	-11	60	-13	-9	120	5	1.5	2	1		
KIA7907F	-35	1	12	-7.28	-7.0	-6.72	-12	70	-15	-10	140	5	1.5	2	1		
KIA7908F	-35	1	12	-8.3	-8	-7.7	-14	80	-17	-11	160	5	1.5	2	1		
KIA7909F	-35	1	12	-9.3	-9	-8.7	-15	90	-19	-13	150	5	1.5	2	1		
KIA7910F	-35	1	12	-10.4	-10	-9.6	-16	100	-20	-14	180	5	1.5	2	1		
KIA7912F	-35	1	12	-12.5	-12	-11.5	-18	120	-22	-16	240	5	1.5	2	1		
KIA7915F	-35	1	12	-15.6	-15	-14.4	-23	150	-26	-20	300	5	1.5	2	1		
KIA7918F	-40	1	12	-18.7	-18	-17.3	-27	180	-30	-24	360	5	1.5	2	1		
KIA7920F	-40	1	12	-20.8	-20	-19.2	-30	180	-32	-26	360	5	1.5	2	1		
KIA7924F	-40	1	12	-25	-24	-23	-33	240	-36	-30	480	5	1.5	2	1		
KIA7905PI	-35	1	20.8	-5.2	-5	-4.8	-10	50	-12	-8	100	5	1.5	2	1	TO-220IS	
KIA7906PI	-35	1	20.8	-6.25	-6	-5.75	-11	60	-13	-9	120	5	1.5	2	1		
KIA7907PI	-35	1	12	-6.25	-6	-5.75	-11	60	-13	-9	120	5	1.5	2	1		
KIA7908PI	-35	1	20.8	-8.3	-8	-7.7	-14	80	-17	-11	160	5	1.5	2	1		
KIA7909PI	-35	1	20.8	-9.3	-9	-8.7	-15	90	-19	-13	150	5	1.5	2	1		
KIA7910PI	-35	1	20.8	-10.4	-10	-9.6	-16	100	-20	-14	180	5	1.5	2	1		
KIA7912PI	-35	1	20.8	-12.5	-12	-11.5	-18	120	-22	-16	240	5	1.5	2	1		
KIA7915PI	-35	1	20.8	-15.6	-15	-14.4	-23	150	-26	-20	300	5	1.5	2	1		
KIA7918PI	-40	1	20.8	-18.7	-18	-17.3	-27	180	-30	-24	360	5	1.5	2	1		
KIA7920PI	-40	1	20.8	-20.8	-20	-19.2	-30	180	-32	-26	360	5	1.5	2	1		
KIA7924PI	-40	1	20.8	-25	-24	-23	-33	240	-36	-30	480	5	1.5	2	1		

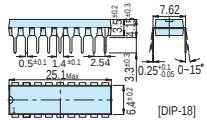
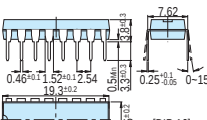
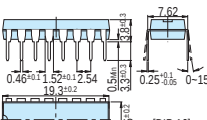
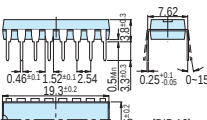
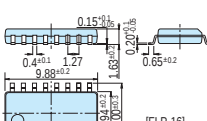
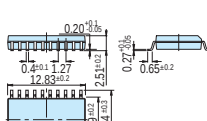
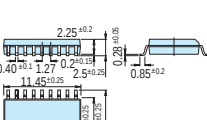
1A 3-Terminal Low Dropout Voltage Regulator (Quasi-LDO Type)

Type No.	Max. Ratings			V _{OUT} (V)				Reg. Line (mV)			Reg. Load (%)			V _{DROP} (V)		Package	Outline (Unit : mm)
	V _{IN} (V)	I _O (A)	P _D (W) (Ta=25)	(Ta=25)			V _{IN} (V)	(Ta=25)		I _{OUT}		(Ta=25)	V _{IN} (V)				
				Min.	Typ.	Max.		Max.	Min.	Max.	Max.			Min.(mA)	Max.(A)		
KIA1117BPI00	10	1	20.8	1.225	1.25	1.275	2.75	10	2.75	10	0.5	10	1	1.1	0.95V _O	TO-220IS	
KIA1117BPI12	10	1	20.8	1.176	1.2	1.224	2.7	10	2.7	10	1	10	1	1.1	0.95V _O		
KIA1117BPI15	10	1	20.8	1.47	1.5	1.53	3	10	3	10	0.5	10	1	1.1	0.95V _O		
KIA1117BPI18	10	1	20.8	1.764	1.8	1.836	3.3	10	3.3	10	0.5	10	1	1.1	0.95V _O		
KIA1117BPI25	10	1	20.8	2.45	2.5	2.55	4	10	4	10	0.5	10	1	1.1	0.95V _O		
KIA1117BPI33	10	1	20.8	3.234	3.3	3.366	4.8	10	4.8	10	0.5	10	1	1.1	0.95V _O		
KIA1117BPI50	10	1	20.8	4.9	5	5.1	6.5	10	6.5	10	0.5	10	1	1.1	0.95V _O		
KIA1117BF00	10	1	13	1.225	1.25	1.275	2.75	10	2.75	10	1	10	1	1.1	0.95V _O	DPAK	
KIA1117BF12	10	1	13	1.176	1.2	1.224	2.7	10	2.7	10	1	10	1	1.1	0.95V _O		
KIA1117BF15	10	1	13	1.47	1.5	1.53	3	10	3	10	1	10	1	1.1	0.95V _O		
KIA1117BF18	10	1	13	1.764	1.8	1.836	3.3	10	3.3	10	1	10	1	1.1	0.95V _O		
KIA1117BF25	10	1	13	2.45	2.5	2.55	4	10	4	10	1	10	1	1.1	0.95V _O		
KIA1117BF33	10	1	13	3.234	3.3	3.366	4.8	10	4.8	10	1	10	1	1.1	0.95V _O		
KIA1117BF50	10	1	13	4.9	5	5.1	6.5	10	6.5	10	1	10	1	1.1	0.95V _O		
KIA1117BS00	10	1	8.3	1.225	1.25	1.275	2.75	10	2.75	10	1	10	1	1.1	0.95V _O	SOT-223	
KIA1117BS12	10	1	8.3	1.176	1.2	1.224	2.7	10	2.7	10	1	10	1	1.1	0.95V _O		
KIA1117BS15	10	1	8.3	1.47	1.5	1.53	3	10	3	10	1	10	1	1.1	0.95V _O		
KIA1117BS18	10	1	8.3	1.764	1.8	1.836	3.3	10	3.3	10	1	10	1	1.1	0.95V _O		
KIA1117BS25	10	1	8.3	2.45	2.5	2.55	4	10	4	10	1	10	1	1.1	0.95V _O		
KIA1117BS33	10	1	8.3	3.234	3.3	3.366	4.8	10	4.8	10	1	10	1	1.1	0.95V _O		
KIA1117BS50	10	1	8.3	4.9	5	5.1	6.5	10	6.5	10	1	10	1	1.1	0.95V _O		

1A 4-Terminal Low Dropout Voltage Regulator (Low Supply Current & On/Off Controllable) (Positive)

Type No.	Max. Ratings			V _{OUT} (V)				Reg. Line (mV)				Reg. Load (mV)			I _{Q(OFF)} (μA)		Package	Outline (Unit : mm)
	V _{IN} (V)	I _O (A)	P _D (W) (Ia=25)	(Ta=25)			V _{IN} (V)	(Ta=25)			I _{OUT}		(Ia=25)					
				Min.	Typ.	Max.		Max.	Min.	Max.	Max.	Min.(mA)	Max.(A)	Max.	V _{IN} (V)			
KIA78R000ZPI	15	1	1.5	1.22	1.25	1.28	2.5	12.5	3.5	8.5	25	5	1	2	3.5	TO-220IS-4		
KIA78R015ZPI	15	1	1.5	1.45	1.5	1.55	2.5	15	2.5	6.5	30	5	1	2	2.5			
KIA78R018ZPI	15	1	1.5	1.75	1.8	1.85	2.8	18	2.5	7	36	5	1	2	2.8			
KIA78R025ZPI	15	1	1.5	2.438	2.5	2.562	3.5	25	3.5	8.5	50	5	1	2	3.5			
KIA78R033ZPI	15	1	1.5	3.221	3.3	3.379	4.3	33	4	9	66	5	1	2	4.3			
KIA78R050ZPI	15	1	1.5	4.88	5	5.12	6	50	6	10	100	5	1	2	6			

Transistor Array & Interface Driver IC

Type No.	Function	Unit	Clamp Diode	V _{OUT} (V)	I _{OUT} (mA)	System V _{CC} (V)	Package	Outline (Unit : mm)
KID65001AF	Darlington Driver	7	●	50	500	Free	FLP-16	 [DIP-18]
KID65002AF	Darlington Driver	7	●	50	500	14 25		
KID65003AF	Darlington Driver	7	●	50	500	5		
KID65004AF	Darlington Driver	7	●	50	500	6 15		
KID65001AP	Darlington Driver	7	●	50	500	Free	DIP-16	 [DIP-16]
KID65002AP	Darlington Driver	7	●	50	500	14 25		
KID65003AP	Darlington Driver	7	●	50	500	5		
KID65004AP	Darlington Driver	7	●	50	500	6 15		
KID65083AF	Darlington Driver	8	●	50	500	5	FLP-20	 [DIP-16]
KID65084AF	Darlington Driver	8	●	50	500	6 15		
KID65083AP	Darlington Driver	8	●	50	500	5	DIP-18	 [DIP-16]
KID65084AP	Darlington Driver	8	●	50	500	6 15		
KID65501F	Single Driver (Common Emitter)	7		35	200	Free	FLP-16	 [FLP-16]
KID65502F	Single Driver (Common Emitter)	7		35	200	14 25		
KID65503F	Single Driver (Common Emitter)	7		35	200	5		
KID65504F	Single Driver (Common Emitter)	7		35	200	6 15		
KID65505F	Single Driver (Common Collector)	7		35	200	Free		
KID65506F	Single Driver (Common Collector)	7		35	200	5		
KID65507F	Single Driver (Isolated)	5		35	200	Free		
KID65501P	Single Driver (Common Emitter)	7		35	200	Free	DIP-16	 [FLP-20]
KID65502P	Single Driver (Common Emitter)	7		35	200	14 25		
KID65503P	Single Driver (Common Emitter)	7		35	200	5		
KID65504P	Single Driver (Common Emitter)	7		35	200	6 15		
KID65505P	Single Driver (Common Collector)	7		35	200	Free		
KID65506P	Single Driver (Common Collector)	7		35	200	5		
KID65507P	Single Driver (Isolated)	5		35	200	Free		
KID65783AF	High Voltage Source Driver	8	●	50	500	5	FLP-20	 [FLP-18]
KID65783AP	High Voltage Source Driver	8	●	50	500	5	DIP-18	
KID65783BF	High Voltage Source Driver	8	●	50	500	5	FLP-18	

Telecommunication IC

Type No.	Function	Operating Voltage(V)	Package	Outline (Unit : mm : Max.)
KIA6419F	55mW AF Power Amplifier	2~16	FLP-8	

Switching Regulator IC (DC/DC Converter)

Type No.	V _{IN} [V]	V _{OUT} (V)	f _{SW} (kHz)	I _{OUT} (A)	Package	Outline (Unit : mm)
KIA34063AF	3 ~ 40	1.25 ~ 37	100	1.5	FLP-8	

(Note) * : Under development

Power Supply Controller

Type No.	Function	Topology	Control Mode	Maximum Power (W)	Package	Outline (Unit : mm)
KIA494AF	Standard PWM Controller	-	Voltage Mode	400	FLP-16	
KIA494AP	Standard PWM Controller	-	Voltage Mode	400	DIP-16	
*KIA3920F	Psr PFM Converter (With integrated MOSFET)	Fly-back	Current Mode	12	FLP-7	
*KIC3921T	SSR PFM + PWM Controller	Fly-back	Current Mode	65	TS6	
*KIC3922F	SSR PFM + PWM Controller	Fly-back	Current Mode	65	FLP-8	

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
Voltage Regulator			LM78L12	Fairchild	KIA78L12BP	S-1172B10	Seiko	KIC3241S10
78L05A	ESTEK	KIA78S05P	LM78L15ACZ/D75Z	N/S	KIA78S15P	S-1172B12	Seiko	KIC3241S12
A278R33PIC	A/I	KIA278R33PI	LM7905	Fairchild	KIA7905PI	S-1172B15	Seiko	KIC3241S15
A7805~24	NEC	KIA7805~24API	LM7905CT	Fairchild	KIA7905PI	S-1172B18	Seiko	KIC3241S18
A78R05PIC	NEC	KIA78R05PI	MC7805	Fairchild	KIA7805API	S-1172B25	Seiko	KIC3241S25
AN7805~24	Panasonic	KIA7805~24API	MC7805~24CT	ON Semi	KIA7805~24API	S-1172B33	Seiko	KIC3241S33
AN78L05~24	Panasonic	KIA78S05~24P	MC7805ACTG	ON Semi	KIA7805API	Quasi LDO		
AS7809DTRE1	BCD	KIA7809AF	MC7805BDTRKG	ON Semi	KIA7805AF	A1117-1.8	A/I	KIA1117BS18
AS78L05RTR-E1	BCD	KIA78L05F	MC7805CTG	ON Semi	KIA7805API	A1117-2.5	A/I	KIA1117BS25
AS78L15RTR-E1	BCD	KIA78L05F	MC7812CTG	ON Semi	KIA7812API	A1117-3.3	A/I	KIA1117BS33
AZ7805D-E1	BCD	KIA7805AF	MC78L05~24AC/C	ON Semi	KIA78S05~24P	AP1117EL-13	Diodes Inc	KIA1117BS00
AZ7808D-E1	BCD	KIA7808AF	MC78L05ACPRAG	ON Semi	KIA78S05P	AZ1117BH-1.8TR-E1	BCD	KIA1117BS18
AZ7809D-E1	BCD	KIA7809AF	MC78L24ACPG	ON Semi	KIA78S24P	AZ1117BH-ADJTR-E1	BCD	KIA1117BS00
BA178**FP/T	Rohm	KIA78**AF/API	MC78M05BDTRKG	ON Semi	KIA78M05F	AZ1117D-1.5E	BCD	KIA1117BF15
BA17805FP-E2	Rohm	KIA7805AF	MC78M05BTG	ON Semi	KIA78M05PI	AZ1117H-**	BCD	KIA1117BS**
BA17805T-F	Rohm	KIA7805API	MC78M05CDTRKG	ON Semi	KIA78M05F	AZ1117R-**	Diodes	KIA1117BS**
BA178M**FP/T	Rohm	KIA78M**F/PI	MC78M12BDTRKG	ON Semi	KIA78M05PI	LD1117ASTR	STM	KIA1117BS**
BA178M05FP	Rohm	KIA78M05F	MC7905BT	ON Semi	KIA7905PI	LD1117AS12TR	STM	KIA1117BS**
BA178M05T/FP	Rohm	KIA78M05PI/F	MC7905CT	ON Semi	KIA7905PI	LD1117AS18TR	STM	KIA1117BS**
BA178M12FP	Rohm	KIA78M12F	NJM78xxDLA	NJRC	KIA78**AF	LD1117AS33TR	STM	KIA1117BS**
BA178M15T/FP	Rohm	KIA78M15PI/F	PC78050~24A	NEC	KIA78**API	LM1117IMP**	TI	KIA1117BS**
BA7805CP	Rohm	KIA7805API	PC78L05~15J	NEC	KIA78L05~15F	NCP1117ST**	ON-Semi	KIA1117BS**
BA7805FP	Rohm	KIA7805AF	PC78M05~24A	NEC	KIA78M05~24PI	AZ1117S**	Diodes	KIA1117BF**
BA7806CP	Rohm	KIA7806API	PQ**RF11	Sharp	KIA78R**PI	AZ1117D**	BCD	KIA1117BF**
BA7806FP	Rohm	KIA7806AF	PQ**RF21	Sharp	KIA278R**PI	LD1117ADT**TR	STM	KIA1117BF**
BA7807CP	Rohm	KIA7807API	PQ**RF33	Sharp	KIA378R**PI	LM1117DT**	TI	KIA1117BF**
BA7807FP	Rohm	KIA7807AF	PQ050RDC1SZF	Sharp	KIA78R05PI	NCP1117DT**	ON-Semi	KIA1117BF**
BA7808CP	Rohm	KIA7808API	PQ05RD21	Sharp	KIA278R05PI	AZ1117T**	Diodes	KIA1117BP**
BA7808FP	Rohm	KIA7808AF	PQ30RV21	Sharp	KIA278R00PI	AZ1117T**	BCD	KIA1117BP**
BA7809CP	Rohm	KIA7809API	PQ30RV31	Sharp	KIA378R00PI	LD1117AV33	STM	KIA1117BP**
BA7809FP	Rohm	KIA7809AF	PQ30RV31J00H	Sharp	KIA378R00PI	Voltage Detector		
BA7810CP	Rohm	KIA7810API	PQ3RD23	Sharp	KIA278R33PI	APX809-**SA	Diodes	KIC71**M/P/T5
BA7810FP	Rohm	KIA7810AF	PQ3RF23	Sharp	KIA278R33PI	APX803-**SA	Diodes	KIC75**M/P/T5
BA7812CP	Rohm	KIA7812API	TA58L12S	Toshiba	KIA78DL12PI	AZ70**R	Diodes	KIA70**AF/AP/AT
BA7812FP	Rohm	KIA7812AF	TA7805~24S/SB	Toshiba	KIA7805~24API	AZ70**R	BCD	KIA70**AF/AP/AT
BA7815CP	Rohm	KIA7818API	TA78DL05~16S	Toshiba	KIA78DL05~15PI	AZ809BN*	BCD	KIC71**M/P/T5
BA7815FP	Rohm	KIA7815AF	TA78DLxxAF	Toshiba	KIA78DL**F	AZ809BN**	BCD	KIC77A~E**M/M2
BA7818CP	Rohm	KIA7818API	TA78L005~24AP/F	Toshiba	KIA78L05~24BP/F	AZ809N**	BCD	KIC73A~E**M/M2
BA7818FP	Rohm	KIA7818AF	TA78L05~24S	Toshiba	KIA78S05~24P	BD48K**G	Rohm	KIC75**M/P/T5
BA7820CP	Rohm	KIA7820API	TA78L05S	Toshiba	KIA78S05P	BD52**G	Rohm	KIC76**T5
BA7820FP	Rohm	KIA7820AF	TA78L10F	Toshiba	KIA78L10F	BU43**G	Rohm	KIC72**T5
BA7824CP	Rohm	KIA7824API	TA78L15F	Toshiba	KIA78L15F	BU45K/L***G	Rohm	KIC77A~E**M/M2
BA7824FP	Rohm	KIA7824AF	TA78L24F	Toshiba	KIA78L24F	BU46K/L***G	Rohm	KIC73A~E**M/M2
BA78M05CP	Rohm	KIA78M05PI	TA78M05~24S/SB	Toshiba	KIA78M05~24PI	BU49**G	Rohm	KIC71**M/P/T5
BA78M05FP	Rohm	KIA78M05F	TA78xxF	Toshiba	KIA78**AF	CAT803**F	ON-Semi	KIC77A~E**M/M2
BA78M08CP	Rohm	KIA78M08PI	TA79005~24S/SB	Toshiba	KIA7905~24PI	KA75330Z	FKS	KIA70**AF/AP/AT
BA78M08FP	Rohm	KIA78M08F	TA79L05~24P/F	Toshiba	KIA79L05~24BP/F	MAX809***	ON-Semi	KIC73A~E**M/M2
BA78M12CP	Rohm	KIA78M12PI	UPC2405AHF-AZ	NEC	KIA7805API	NCP300xSN**T1	ON-Semi	KIC71**M/P/T5
BA78M12FP	Rohm	KIA78M12F	UPC24M05AHF-AZ	NEC	KIA78M05PI	NCP301*SN**T1	ON-Semi	KIC75**M/P/T5
BA78M15CP	Rohm	KIA78M15PI	UPC24M12AHF-AZ	NEC	KIA78M12PI	NCP302*SN**T1	ON-Semi	KIC72**T5
BA78M15FP	Rohm	KIA78M15F	UPC7808AHF-AZ	NEC	KIA7808API	NCP303LSN**T1	ON-Semi	KIC76**T5
KA278R**	Fairchild	KIA278R**PI	UPC7815AHF-AZ	NEC	KIA7815API	PST523	Mitsumi	KIA7019~45AP/AF
KA278R12CTU	Fairchild	KIA278R12PI	UPC78L05T-E1-AZ	NEC	KIA78L05F	STM1001**WX	STM	KIC77A~E**M/M2
KA278R12CYDTU	Fairchild	KIA278R12PI	UPC79M05HF-AZ	NEC	KIA78M05PI	STM1061N**WX	STM	KIC75**M/P/T5
KA378R**	Fairchild	KIA378R**PI	CMOS LDO Regulator			STM809*WX	STM	KIC73A~E**M/M2
KA7812	Fairchild	KIA7812API	AB2120N**	Diodes	KIC3213MF/T**	TLV803*DBZ	TI	KIC77A~E**M/M2
KA78R**	Fairchild	KIA78R**PI	AB2120N**	BCD	KIC3213MF/T**	TPS3839A**DBZ	TI	KIC73A~E**M/M2
ICTL78M05CDT	STM	KIA78M05F	AP2115R5-**	Diodes	KIC3241S**	Voltage Stabilizer		
L7805ACV	STM	KIA7805API	AP2115R5-**	BCD	KIC3241S**	A431	NEC	KIA431/F/A/AF
L7812ACV	STM	KIA7812API	BU**TD3WG	BCD	KIC3213MF/T**	AS431AN	BCD	KIA431BM
L78L05ACU-TR	STM	KIA78L05F	CAT6217-***TD	ON Semi	KIC3213MF/T**	AS431LAN/AMI	Alpha	KIA431BP/BF
L78L08ACUTR	STM	KIA78L08F	FAN2558S	FKS	KIC3213MF/T**	AS431AZ/AR/AN	BCD	KIA431BP/BM
L78L09ACUTR	STM	KIA78L09F	LD39015M**R	STM	KIC3213MF/T**	AS431BZ/BR/BN	BCD	KIA43A/AF/AM
L78L15ABUTR	STM	KIA78L15F	LP3985JM5-**	TI	KIC3213MF/T**	AZ431LAZ/AN	Diodes	KIA2431BP/BM
L78L15ACU	STM	KIA78L15F	NHJ2750F**	NJRC	KIC3213MF/T**	AZ431LAZ/AN	BCD	KIA2431BP/BM
L78M05ABDT	STM	KIA78M05F	NJM2842U2-**	NJRC	KIC3241S**	AZ431BZ/BN	BCD	KIA2431AP/AM
L78M05CDT	STM	KIA78M05F	RP103K121D	Ricoh	KIC3213MF12	AZ431BZ/BN	Diodes	KIA2431AP/AM
L78M15ABV	STM	KIA78M15PI	RP103K181D	Ricoh	KIC3213MF18	FAN431LZXA	Fairchild	KIA431B
L78M00T	Sanyo	KIA78M00PI	RP103K251D	Ricoh	KIC3213MF25	KA431AZTA	Fairchild	KIA431A
LM340	ON Semi	KIA7812API	RP103K281D	Ricoh	KIC3213MF28	KA431LZ	Fairchild	KIA431B
LM78L05ACZ	Fairchild	KIA78S05P	RP103K331D	Ricoh	KIC3213MF33	LM336	N/S	KIA431/F/A/AF

Integrated Circuit

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
LM431AIZ	FKS	KIA431/F/M	MJM2901D/M	JRC	KIA339P/F	Transistors Array		
LM431BIZ	FKS	KIA431A/AF/AM	NCV2903DR2G	ON Semi	KIA393F	MC1413BDR2G	ON Semi	KID65001AF
LM431CIM	FKS	KIA431B/BF/BM	NJM2901N	NJRC	KIA339P	MC1413BDR2G	ON Semi	KID65003AF
MM1431AT	Mitsumi	KIA431A	NJM2903D	NJRC	KIA393P	MC1413BP/BD	ON Semi	KID65003AP/AF
NJM2373AU	NJRC	KIA2431AP/AM	NJM2903D/M	JRC	KIA393P/F	MC1413PG	ON Semi	KID65003AP
NJM2373U	NJRC	KIA2431P/M	NJM2903M	NJRC	KIA393F	PA2981C	NEC	KID65783AP
NJM1431AU	NJRC	KIA431F	PC339C/G	NEC	KIA393P/F	TD62001~4P/AP	Toshiba	KID65001~4AP
NJM431L/U	NJRC	KIA431/F/A/AF	PC393C/G	NEC	KIA393P/F	TD62001AFG(S,EL)	Toshiba	KID65001AF
PC1093J/T	NEC	KIA431/F/A/AF	TA75339P	Toshiba	KIA339P	TD62001APG(5,J,S)	Toshiba	KID65001AP
RC431AM/AT	Fairchild	KIA2431AT/AP	TA75393P	Toshiba	KIA393P	TD62003AFG(S,EL)	Toshiba	KID65003AF
SCV431ASN1	ON Semi	KIA2431P/M	UPC339C-A	NEC	KIA339P	TD62003APG(5,J,S)	Toshiba	KID65003AP
SCV431BSN1	ON Semi	KIA2431BP/BM	UPC339G2-A	NEC	KIA339F	TD62083AP/AF	Toshiba	KID65083AP/AF
SL431A-AT	AUK	KIA431A	UPC393C-A	NEC	KIA393P	TD62084AP/AF	Toshiba	KID65084AP/AF
SN431A	AUK	KIA431A	UPC393G2-A	NEC	KIA393F	TD62501~7P	Toshiba	KID65501~7P
TA76431AS	Toshiba	KIA431A	Single Voltage Comparator			TD62503F	Toshiba	KID65503F
TA76431S	Toshiba	KIA431	LM397MF/NOPB	N/S	KIA75S393F	TD62504FG	Toshiba	KID65504F
TA76431S/F	Toshiba	KIA431/F	LM7219	N/S	KIA75S393F	TD62783AP/AF	Toshiba	KID65783AP/AF
TA76432FC/S	Toshiba	KIA431AT/AP	NJM2406F	NJRC	KIA75S393F	ULN2001~4A	ON Semi	KID65001~4AP
TL431	ON Semi	KIA431/F/A/AF	TA75S393F	Toshiba	KIA75S393F	ULN2001~4A/D1	STM	KID65001~4AP/AF
TL431	TI	KIA431/F/A/AF	TA75S393F	Toshiba	KIA75S393F	ULN2002A	STM	KID65002AP
TL431ACLPRAG	ON Semi	KIA431A	TS391	STM	KIA75S393F	ULN2003A	TI	KID65003AP
TL431ACZT	STM	KIA431A	OP Amp			ULN2003AD	TI	KID65003AF
TL431ASA	Diodes	KIA431A/AF/AM	BA10324/F	Rohm	KIA324P/F	ULN2003AFW	Toshiba	KID65003AF
TL431AILP	ON Semi	KIA431A/AF/AM	BA10324AFV	Rohm	KIA324F	ULN2003AN	TI	KID65003AP
TL431AILP/PK/DBZ	TI	KIA431A/AF/AM	BA10358/F/N	Rohm	KIA358P/F	ULN2003D1013TR	STM	KID65003AF
TL431AIZ/AIL3T	STM	KIA431A/AF/AM	BA10358F	Rohm	KIA358F	ULN2004A	TI	KID65004AP/AF
TL431BILP/PK/DBZ	TI	KIA431B/BF/BM	BA4558/F/N	Rohm	KIA4558P/F	ULN2004ADR	TI	KID65004AF
TL431BSA	Diodes	KIA431B/BF/BM	LM224DR2G	ON Semi	KIA324F	ULN2004D1013TR	TI	KID65004AF
TL431ILP	ON Semi	KIA431/F/M	LM258D	TI	KIA358F	ULN2803/4	ON Semi	KID65083/84AP
TL431LP/IPK/IDBZ	TI	KIA431/F/M	LM258DT	STM	KIA358F	ULN2803AN/A	TI	KID65083AP/AF
TL431IA/IL3T	STM	KIA431/F/M	LM2902DR2G	ON Semi	KIA324F	ULQ2002~3AN/AD	TI	KID65002~3AP/AF
TL431AIDBZR	TI	KIA431AM	LM2904D	STM	KIA358F	ULQ2004ADR	TI	KID65004AF
TL431AILPRAG	ON Semi	KIA431A	LM2904DR2	ON Semi	KIA358F	ULQ2803~4A	STM	KID65083~4AP/AF
TL431AILPRPG	ON Semi	KIA431A	LM2904DT	Rohm	KIA358F	DC-DC Conveter Controller		
TL431B	TI	KIA431B	LM324/N	ON Semi	KIA324P/F	KA34063A/AD	Fairchild	KIA34063A/AF
TLBILP	ON Semi	KIA431B/BF/BM	LM324D	ON Semi	KIA324F	MC33063ADR2G	ON Semi	KIA34063AF
TL431CLP	Fairchild	KIA431	LM324PWR	N/S	KIA324F	MC34063AP/AD	ON Semi	KIA34063A/AF
TL431CZ	STM	KIA431	UPC358G2-E1-A	NEC	KIA358F	NJM22360AD/AM	NJRC	KIA34063A/AF
TL431IZT	STM	KIA431	UPC4558C-A	NEC	KIA4558P	NJM2360AM(TE1)	NJRC	KIA34063AF
TLV431A	ON Semi	KIA2431AT/AP	LM358	ON Semi	KIA358P/F	DC-DC Conveter Controller		
TLVH431AILP/DBZ	TI	KIA2431AP/AM	LM358A	STM	KIA358F	TA76494P	Toshiba	KIA494AP/AF
TLV431ALP	ON Semi	KIA2431AP/AM	LM358ADR2G	ON Semi	KIA358F	TL494	ON Semi	KIA494AP/AF
TLV431BLP	ON Semi	KIA2431BP/BM	LM358AMX	N/S	KIA358F	USB Power Switch		
TLH431ILP/IDBZ	TI	KIA2431P/M	LM358MX	Fairchild	KIA358F	AP2151W	Diodes	KIC6983T
TLVH431BILP/DBZ	TI	KIA2431BP/BM	LM358NGG	ON Semi	KIA358P	AP2191DS	Diodes	KIC6981F
TS2431AILT	STM	KIA431AM	MC33078DR2G	ON Semi	KIA358F	AP2181DS	Diodes	KIC6989F
TS432AILT	STM	KIA2431BP/BM	MC33272ADR2G	ON Semi	KIA358F	AP2192DM8	Diodes	KIC6981MF
TS432ILT	STM	KIA2431AS	MC33274ADR2G	ON Semi	KIA324F	AP2192AS	Diodes	KIC6971F
TS432ILT	STM	KIA2431AP/AM	MC4558C	ON Semi	KIA4558P/F	AP2191S	Diodes	KIC6981F/MF
Comparator			NJM2902D	NJRC	KIA324P/F	AP2192AMP	Diodes	KIC6971MF
BA10339/F	Rohm	KIA339P/F	NJM2904D	NJRC	KIA358P	AP2553W6	Diodes	KIC6961T
BA10339F-E2	Rohm	KIA339F	NJM2904M	NJRC	KIA358F	FPF2106	FKS	KIC6983T
BA10393/F/N	Rohm	KIA393P/F	NJM324D	NJRC	KIA324P	NCP380HSN05	ON Semi	KIC6983T
BA10393F	Rohm	KIA393F	NJM4558D	NJRC	KIA4558P	NCP380HSNAJ	ON Semi	KIC6961T
BA2903FV-E2	Rohm	KIA339F	NJM4558D/S/M	JRC	KIA4558P/F	NCP382HD15	ON Semip	KIC6982MF
KA393	Fairchild	KIA393P	NJM4558M	NJRC	KIA4558F	STMP52151STR	STM	KIC6983T
LM239D	STM	KIA339F	NJM4580D-D	JRC	KIA358P	TP2033D	TI	KIC6981F/MF
LM239DT	STM	KIA339F	PC324C	NEC	KIA324P/F	TPS2051BDBV	TI	KIC6983T
LM2901D	ON Semi	KIA339F	PC4558C/G	NEC	KIA4558P/F	TPS2069DGN	TI	KIC6982MF
LM2901M	Fairchild	KIA339F	S4580	AUK	KIA358F			
LM2903D	ON Semi	KIA393F	TA75558P	Toshiba	KIA4558P/F			
LM2903MX T/R	NSC	KIA393F	TL074IDR	TI	KIA324F			
LM339/N	N/S	KIA339P/F	Single Low Noise OP AMP					
LM339D	ON Semi	KIA339F	NJM2125	NJRC	KIA75S358F			
LM339MX	N/S	KIA339F	NJM2125F(TE1)	NJRC	KIA75S558F			
LM393	ON Semi	KIA393F	NJM2130	NJRC	KIA75S558F			
LM393/N	N/S	KIA393P/F	TA75S558F	Toshiba	KIA75S558F			
LM393DR2G	ON Semi	KIA339F	TS931	STM	KIA75S558F			
LM393DT	STM	KIA393F	AF Power Amplifier					
LM393N	N/S	KIA393P	KA8602F	Fairchild	KIA6419F			
LM393N	ON Semi	KIA393P	MC34119D	ON Semi	KIA6419F			

Index

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Index

KF10N60P	MOSFET	86	KGf50N60KDA	IGBT	91	KIA431BM	Integrated Circuit	96	KIA78DL10PI	Integrated Circuit	101
KF10N65F	MOSFET	87	KGf75N60KDA	IGBT	91	KIA431F	Integrated Circuit	96	KIA78DL12F	Integrated Circuit	101
KF10N68F	MOSFET	87	KGf15N120KDA	IGBT	91	KIA4558F	Integrated Circuit	95	KIA78DL12PI	Integrated Circuit	101
KF10N70F	MOSFET	87	KGf25N120KDA	IGBT	91	KIA4558P	Integrated Circuit	95	KIA78DL15F	Integrated Circuit	101
KF11N50F	MOSFET	85	KGf40N120KDA	IGBT	91	KIA494AF	Integrated Circuit	109	KIA78DL15PI	Integrated Circuit	101
KF11N50P	MOSFET	85	KGf20N60PA	IGBT	91	KIA494AP	Integrated Circuit	109	KIA78L05BP	Integrated Circuit	101
KF12N60F	MOSFET	86	KGf30N60PA	IGBT	91	KIA578R000PI	Integrated Circuit	105	KIA78L05F	Integrated Circuit	101
KF12N60P	MOSFET	86	KGf40N60PA	IGBT	91	KIA578R015PI	Integrated Circuit	105	KIA78L06BP	Integrated Circuit	101
KF12N68F	MOSFET	87	KGT15N120NDS	IGBT	92	KIA578R018PI	Integrated Circuit	105	KIA78L06F	Integrated Circuit	101
KF13N50F	MOSFET	85	KGT15N120NDH	IGBT	92	KIA578R025PI	Integrated Circuit	105	KIA78L08BP	Integrated Circuit	101
KF13N50P	MOSFET	85	KGT25N120NDH	IGBT	92	KIA578R033PI	Integrated Circuit	105	KIA78L08F	Integrated Circuit	101
KF16N25D	MOSFET	85	KGT15N135NDH	IGBT	92	KIA578R050PI	Integrated Circuit	105	KIA78L09BP	Integrated Circuit	101
KF16N25F	MOSFET	85	KGT25N135NDH	IGBT	92	KIA6419F	Integrated Circuit	109	KIA78L09F	Integrated Circuit	101
KF19N20D	MOSFET	85	KGT30N135NDH	IGBT	92	KIA7019AF	Integrated Circuit	97	KIA78L10BP	Integrated Circuit	101
KF19N20F	MOSFET	85	KGT15N135KDH	IGBT	92	KIA7019AP	Integrated Circuit	97	KIA78L10F	Integrated Circuit	101
KF1N60D	MOSFET	86	KGT25N135KDH	IGBT	92	KIA7019AT	Integrated Circuit	97	KIA78L12BP	Integrated Circuit	101
KF1N60I	MOSFET	86	KGT30N135KDH	IGBT	92	KIA7021AF	Integrated Circuit	97	KIA78L12F	Integrated Circuit	101
KF1N60L	MOSFET	86	KIA1117BP100	Integrated Circuit	107	KIA7021AP	Integrated Circuit	97	KIA78L15BP	Integrated Circuit	101
KF1N70D	MOSFET	87	KIA1117BP112	Integrated Circuit	107	KIA7021AT	Integrated Circuit	97	KIA78L15F	Integrated Circuit	101
KF1N70I	MOSFET	87	KIA1117BP115	Integrated Circuit	107	KIA7023AF	Integrated Circuit	97	KIA78L18BP	Integrated Circuit	101
KF2N60D	MOSFET	86	KIA1117BP118	Integrated Circuit	107	KIA7023AP	Integrated Circuit	97	KIA78L18F	Integrated Circuit	101
KF2N60F	MOSFET	86	KIA1117BP125	Integrated Circuit	107	KIA7023AT	Integrated Circuit	97	KIA78L20BP	Integrated Circuit	101
KF2N60I	MOSFET	86	KIA1117BP133	Integrated Circuit	107	KIA7025AF	Integrated Circuit	97	KIA78L20F	Integrated Circuit	101
KF2N60L	MOSFET	86	KIA1117BP150	Integrated Circuit	107	KIA7025AP	Integrated Circuit	97	KIA78L24BP	Integrated Circuit	101
KF2N70D	MOSFET	87	KIA1117BF00	Integrated Circuit	107	KIA7025AT	Integrated Circuit	97	KIA78L24F	Integrated Circuit	101
KF2N70I	MOSFET	87	KIA1117BF12	Integrated Circuit	107	KIA7027AF	Integrated Circuit	97	KIA78M05F	Integrated Circuit	102
KF3N40D	MOSFET	85	KIA1117BF15	Integrated Circuit	107	KIA7027AP	Integrated Circuit	97	KIA78M05PI	Integrated Circuit	102
KF3N40I	MOSFET	85	KIA1117BF18	Integrated Circuit	107	KIA7027AT	Integrated Circuit	97	KIA78M08F	Integrated Circuit	102
KF3N40W	MOSFET	85	KIA1117BF25	Integrated Circuit	107	KIA7029AF	Integrated Circuit	97	KIA78M08PI	Integrated Circuit	102
KF3N50DZ	MOSFET	85	KIA1117BF33	Integrated Circuit	107	KIA7029AP	Integrated Circuit	97	KIA78M12F	Integrated Circuit	102
KF3N50FZ/FS	MOSFET	85	KIA1117BF50	Integrated Circuit	107	KIA7029AT	Integrated Circuit	97	KIA78M12PI	Integrated Circuit	102
KF3N50IZ	MOSFET	85	KIA1117BS00	Integrated Circuit	107	KIA7031AF	Integrated Circuit	97	KIA78M15F	Integrated Circuit	102
KF3N60D	MOSFET	86	KIA1117BS15	Integrated Circuit	107	KIA7031AP	Integrated Circuit	97	KIA78M15PI	Integrated Circuit	102
KF3N60F	MOSFET	86	KIA1117BS18	Integrated Circuit	107	KIA7031AT	Integrated Circuit	97	KIA78R00PI	Integrated Circuit	103
KF3N60I	MOSFET	86	KIA1117BS25	Integrated Circuit	107	KIA7032AF	Integrated Circuit	97	KIA78R05PI	Integrated Circuit	103
KF3N80D	MOSFET	87	KIA1117BS28	Integrated Circuit	107	KIA7032AP	Integrated Circuit	97	KIA78R06PI	Integrated Circuit	103
KF3N80I	MOSFET	87	KIA1117BS33	Integrated Circuit	107	KIA7032AT	Integrated Circuit	97	KIA78R08PI	Integrated Circuit	103
KF3N80F	MOSFET	87	KIA1117BS50	Integrated Circuit	107	KIA7033AF	Integrated Circuit	97	KIA78R09PI	Integrated Circuit	103
KF4N20LD	MOSFET	85	KIA2431AM	Integrated Circuit	96	KIA7033AP	Integrated Circuit	97	KIA78R10PI	Integrated Circuit	103
KF4N20LI	MOSFET	85	KIA2431AP	Integrated Circuit	96	KIA7033AT	Integrated Circuit	97	KIA78R12PI	Integrated Circuit	103
KF4N20LW	MOSFET	85	KIA2431BM	Integrated Circuit	96	KIA7034AF	Integrated Circuit	97	KIA78R15PI	Integrated Circuit	103
KF4N60D	MOSFET	86	KIA278R000PI	Integrated Circuit	105	KIA7034AP	Integrated Circuit	97	KIA78R25PI	Integrated Circuit	103
KF4N60F	MOSFET	86	KIA278R00PI	Integrated Circuit	104	KIA7034AT	Integrated Circuit	97	KIA78R33PI	Integrated Circuit	103
KF4N60I	MOSFET	86	KIA278R015PI	Integrated Circuit	105	KIA7035AF	Integrated Circuit	97	KIA78R000ZPI	Integrated Circuit	107
KF4N65F	MOSFET	87	KIA278R018PI	Integrated Circuit	105	KIA7035AP	Integrated Circuit	97	KIA78R015ZPI	Integrated Circuit	107
KF4N65FM	MOSFET	87	KIA278R025PI	Integrated Circuit	105	KIA7035AT	Integrated Circuit	97	KIA78R018ZPI	Integrated Circuit	107
KF4N65P	MOSFET	87	KIA278R033PI	Integrated Circuit	105	KIA7036AF	Integrated Circuit	97	KIA78R025ZPI	Integrated Circuit	107
KF4N80F	MOSFET	87	KIA278R050PI	Integrated Circuit	105	KIA7036AP	Integrated Circuit	97	KIA78R033ZPI	Integrated Circuit	107
KF5N40D	MOSFET	85	KIA278R05PI	Integrated Circuit	104	KIA7036AT	Integrated Circuit	97	KIA78R050ZPI	Integrated Circuit	107
KF5N50DZ/DS	MOSFET	85	KIA278R06PI	Integrated Circuit	104	KIA7039AF	Integrated Circuit	97	KIA78S05P	Integrated Circuit	101
KF5N50FZA/FA	MOSFET	85	KIA278R08PI	Integrated Circuit	104	KIA7039AP	Integrated Circuit	97	KIA78S06P	Integrated Circuit	101
KF5N50IZ	MOSFET	85	KIA278R09PI	Integrated Circuit	104	KIA7039AT	Integrated Circuit	97	KIA78S09P	Integrated Circuit	101
KF5N50PZ	MOSFET	85	KIA278R10PI	Integrated Circuit	104	KIA7042AF	Integrated Circuit	97	KIA78S10P	Integrated Circuit	101
KF5N53DS	MOSFET	85	KIA278R12PI	Integrated Circuit	104	KIA7042AP	Integrated Circuit	97	KIA78S12P	Integrated Circuit	101
KF5N53FS	MOSFET	85	KIA278R15PI	Integrated Circuit	104	KIA7042AT	Integrated Circuit	97	KIA78S15P	Integrated Circuit	101
KF5N60D	MOSFET	86	KIA278R25PI	Integrated Circuit	104	KIA7045AF	Integrated Circuit	97	KIA78S18P	Integrated Circuit	101
KF5N60F	MOSFET	86	KIA278R33PI	Integrated Circuit	104	KIA7045AP	Integrated Circuit	97	KIA78S20P	Integrated Circuit	101
KF5N60I	MOSFET	86	KIA317PI	Integrated Circuit	103	KIA7045AT	Integrated Circuit	97	KIA78S24P	Integrated Circuit	101
KF5N60P	MOSFET	86	KIA317F	Integrated Circuit	103	KIA75S358F	Integrated Circuit	95	KIA7905F	Integrated Circuit	106
KF5N65D	MOSFET	87	KIA324F	Integrated Circuit	95	KIA75S393F	Integrated Circuit	95	KIA7905P	Integrated Circuit	106
KF5N65I	MOSFET	87	KIA324P	Integrated Circuit	95	KIA75S558F	Integrated Circuit	95	KIA7905PI	Integrated Circuit	106
KF5N65F	MOSFET	87	KIA339F	Integrated Circuit	95	KIA7805AF	Integrated Circuit	102	KIA7906F	Integrated Circuit	106
KF6N60D	MOSFET	86	KIA339P	Integrated Circuit	95	KIA7805API	Integrated Circuit	102	KIA7906P	Integrated Circuit	106
KF6N60I	MOSFET	86	KIA34063AF	Integrated Circuit	109	KIA7806AF	Integrated Circuit	102	KIA7906PI	Integrated Circuit	106
KF6N60F	MOSFET	86	KIA358F	Integrated Circuit	95	KIA7806API	Integrated Circuit	102	KIA7907F	Integrated Circuit	106
KF6N70I	MOSFET	87	KIA358P	Integrated Circuit	95	KIA7807AF	Integrated Circuit	102	KIA7907P	Integrated Circuit	106
KF6N70F	MOSFET	87	KIA378R000PI	Integrated Circuit	105	KIA7807API	Integrated Circuit	102	KIA7907PI	Integrated Circuit	106
KF7N50D	MOSFET	85	KIA378R00PI	Integrated Circuit	104	KIA7808AF	Integrated Circuit	102	KIA7908F	Integrated Circuit	106
KF7N50I	MOSFET	85	KIA378R015PI	Integrated Circuit	105	KIA7808API	Integrated Circuit	102	KIA7908P	Integrated Circuit	106
KF7N50F	MOSFET	85	KIA378R018PI	Integrated Circuit	105	KIA7809AF	Integrated Circuit	102	KIA7908PI	Integrated Circuit	106
KF7N50P	MOSFET	85	KIA378R025FP	Integrated Circuit	105	KIA7809API	Integrated Circuit	102	KIA7909F	Integrated Circuit	106
KF7N60F	MOSFET	86	KIA378R050PI	Integrated Circuit	105	KIA7810AF	Integrated Circuit	102	KIA7909PI	Integrated Circuit	106
KF7N60P	MOSFET	86	KIA378R033PI	Integrated Circuit	105	KIA7810API	Integrated Circuit	102	KIA7910F	Integrated Circuit	106
KF7N65F	MOSFET	87	KIA378R050PI	Integrated Circuit	105	KIA7812AF	Integrated Circuit	102	KIA7910PI	Integrated Circuit	106
KF7N65FM	MOSFET	87	KIA378R05PI	Integrated Circuit	104	KIA7812API	Integrated Circuit	102	KIA7912F	Integrated Circuit	106
KF7N65P	MOSFET	87	KIA378R06PI	Integrated Circuit	104	KIA7815AF	Integrated Circuit	102	KIA7912PI	Integrated Circuit	106
KF7N68F	MOSFET	87	KIA378R08PI	Integrated Circuit	104	KIA7815API	Integrated Circuit	102	KIA7915F	Integrated Circuit	106
KF7N80F	MOSFET	87	KIA378R09PI	Integrated Circuit	104	KIA7818AF	Integrated Circuit	102	KIA7915PI	Integrated Circuit	106
KF8N60F	MOSFET	86	KIA378R10PI	Integrated Circuit	104	KIA7818API	Integrated Circuit	102	KIA7918F	Integrated Circuit	106
KF8N60P	MOSFET	86	KIA378R12PI	Integrated Circuit	104	KIA7820AF	Integrated Circuit	102	KIA7918PI	Integrated Circuit	106
KF9N25D	MOSFET	85	KIA378R15PI	Integrated Circuit	104	KIA7820API	Integrated Circuit	102	KIA7920F	Integrated Circuit	106
KF9N25F	MOSFET	85	KIA378R25PI	Integrated Circuit	104	KIA7824AF	Integrated Circuit	102	KIA7920PI	Integrated Circuit	106
KF9N40D	MOSFET	85	KIA378R33PI	Integrated Circuit	104	KIA7824API	Integrated Circuit	102	KIA7924F	Integrated Circuit	106
KF9N50F	MOSFET	85	KIA3920F	Integrated Circuit	109	KIA78DL05F	Integrated Circuit	101	KIA7924PI	Integrated Circuit	106
KF9N50P	MOSFET	85	KIA393F	Integrated Circuit	95	KIA78DL05PI	Integrated Circuit	101	KIA79L05BP	Integrated Circuit	105
KGf12N60FDA	IGBT	91	KIA393P	Integrated Circuit	95	KIA78DL06F	Integrated Circuit	101	KIA79L05F	Integrated Circuit	105
KGf15N60FDA	IGBT	91	KIA431	Integrated Circuit	96	KIA78DL06PI	Integrated Circuit	101	KIA79L06BP	Integrated Circuit	105
KGf15N60FDA	IGBT	91	KIA431A	Integrated Circuit	96	KIA78DL08F	Integrated Circuit	101	KIA79L06F	Integrated Circuit	105
KGf20N60FDA	IGBT	91	KIA431AF	Integrated Circuit	96	KIA78DL08PI	Integrated Circuit	101	KIA79L08BP	Integrated Circuit	105
KGf20N60KDA	IGBT	91	KIA431AM	Integrated Circuit	96	KIA78DL09F	Integrated Circuit	101	KIA79L08F	Integrated Circuit	105
KGf30N60KDA	IGBT	91	KIA431B	Integrated Circuit	96	KIA78DL09PI	Integrated Circuit	101	KIA79L09BP	Integrated Circuit	105
KGf40N60KDA	IGBT	91	KIA431BF	Integrated Circuit	96	KIA78DL10F	Integrated Circuit	101	KIA79L09F	Integrated Circuit	105

Index

KIA79L10BP	Integrated Circuit	105	KID65084AP	Integrated Circuit	108	KRC119S	Transistor	35	KRX104E	Transistor	41
KIA79L10F	Integrated Circuit	105	KID65501F	Integrated Circuit	108	KRC122S	Transistor	35	KRX201E	Transistor	41
KIA79L12BP	Integrated Circuit	105	KID65501P	Integrated Circuit	108	KRC152F	Transistor	34	KRX201U	Transistor	41
KIA79L12F	Integrated Circuit	105	KID65502F	Integrated Circuit	108	KRC153F	Transistor	34	KRX202E	Transistor	41
KIA79S05P	Integrated Circuit	105	KID65502P	Integrated Circuit	108	KRC154F	Transistor	34	KRX202U	Transistor	41
KIA79S06P	Integrated Circuit	105	KID65503F	Integrated Circuit	108	KRC157F	Transistor	34	KRX203E	Transistor	41
KIA79S08P	Integrated Circuit	105	KID65503P	Integrated Circuit	108	KRC158F	Transistor	34	KRX203U	Transistor	41
KIA79S09P	Integrated Circuit	105	KID65504F	Integrated Circuit	108	KRC231	Transistor	43	KRX204E	Transistor	41
KIA79S10P	Integrated Circuit	105	KID65504P	Integrated Circuit	108	KRC231S	Transistor	43	KRX204U	Transistor	41
KIA79S12P	Integrated Circuit	105	KID65505F	Integrated Circuit	108	KRC232S	Transistor	43	KRX206E	Transistor	41
KIC3213MF12	Integrated Circuit	99	KID65505P	Integrated Circuit	108	KRC242	Transistor	42	KRX207E	Transistor	41
KIC3213MF13	Integrated Circuit	99	KID65506F	Integrated Circuit	108	KRC243	Transistor	42	KRX208E	Transistor	41
KIC3213MF14	Integrated Circuit	99	KID65506P	Integrated Circuit	108	KRC243S	Transistor	42	KRX209E	Transistor	41
KIC3213MF15	Integrated Circuit	99	KID65507F	Integrated Circuit	108	KRC244	Transistor	42	KRX210E	Transistor	41
KIC3213MF16	Integrated Circuit	99	KID65507P	Integrated Circuit	108	KRC244S	Transistor	42	KTA1001	Transistor	26
KIC3213MF17	Integrated Circuit	99	KID65783AF	Integrated Circuit	108	KRC245	Transistor	42	KTA1023	Transistor	18
KIC3213MF18	Integrated Circuit	99	KID65783AP	Integrated Circuit	108	KRC245S	Transistor	42	KTA1024	Transistor	18
KIC3213MF19	Integrated Circuit	99	KID65783BF	Integrated Circuit	108	KRC246	Transistor	42	KTA1040D	Transistor	16
KIC3213MF20	Integrated Circuit	99	KMA2D4P20SA	MOSFET	83	KRC246S	Transistor	42	KTA1042D	Transistor	16
KIC3213MF21	Integrated Circuit	99	KMA3D0N20SA	MOSFET	83	KRC281S	Transistor	43	KTA1045D	Transistor	16
KIC3213MF22	Integrated Circuit	99	KMA3D6N20SA	MOSFET	83	KRC401	Transistor	35	KTA1046	Transistor	19
KIC3213MF23	Integrated Circuit	99	KMA3D7P20SA	MOSFET	83	KRC401E	Transistor	34	KTA1049	Transistor	19
KIC3213MF24	Integrated Circuit	99	KMB3D0P30SA	MOSFET	83	KRC401V	Transistor	34	KTA1225D	Transistor	16
KIC3213MF25	Integrated Circuit	99	KMB3D5N40SA	MOSFET	84	KRC402	Transistor	35	KTA1241	Transistor	26
KIC3213MF26	Integrated Circuit	99	KMB4D0N30SA	MOSFET	83	KRC402E	Transistor	34	KTA1242D	Transistor	16
KIC3213MF27	Integrated Circuit	99	KMD4D2N30S	MOSFET	83	KRC402V	Transistor	34	KTA1266	Transistor	18
KIC3213MF28	Integrated Circuit	99	KMD6D0DN30C	MOSFET	83	KRC403	Transistor	35	KTA1270	Transistor	18
KIC3213MF29	Integrated Circuit	99	KML0D3P20V	MOSFET	83	KRC403E	Transistor	34	KTA1271	Transistor	18
KIC3213MF30	Integrated Circuit	99	KML0D4P20UL3	MOSFET	83	KRC403V	Transistor	34	KTA1273	Transistor	18
KIC3213MF31	Integrated Circuit	99	KML0D4N20V	MOSFET	83	KRC404	Transistor	35	KTA1274	Transistor	18
KIC3213MF32	Integrated Circuit	99	KML0D4N20UL3	MOSFET	83	KRC404E	Transistor	34	KTA1275	Transistor	18
KIC3213MF33	Integrated Circuit	99	KML0D4P20E	MOSFET	83	KRC404V	Transistor	34	KTA1277	Transistor	18
KIC3213T12	Integrated Circuit	99	KML0D4N20E	MOSFET	83	KRC405	Transistor	35	KTA1281	Transistor	27
KIC3213T13	Integrated Circuit	99	KML1D0N20UL3	MOSFET	83	KRC405E	Transistor	35	KTA1282	Transistor	18
KIC3213T14	Integrated Circuit	99	KN2222A	Transistor	43	KRC405V	Transistor	35	KTA1298	Transistor	14
KIC3213T15	Integrated Circuit	99	KN2222A	Transistor	17	KRC406	Transistor	35	KTA1360	Transistor	19
KIC3213T16	Integrated Circuit	99	KN2222AS	Transistor	42	KRC406E	Transistor	34	KTA1381	Transistor	19
KIC3213T17	Integrated Circuit	99	KN2222AS	Transistor	15	KRC406V	Transistor	34	KTA1385D	Transistor	26
KIC3213T18	Integrated Circuit	99	KN2907A	Transistor	43	KRC407	Transistor	35	KTA1504S	Transistor	14
KIC3213T19	Integrated Circuit	99	KN2907A	Transistor	17	KRC407E	Transistor	34	KTA1505S	Transistor	14
KIC3213T20	Integrated Circuit	99	KN2907AS	Transistor	42	KRC407V	Transistor	34	KTA1531T	Transistor	28
KIC3213T21	Integrated Circuit	99	KN2907AS	Transistor	15	KRC408	Transistor	35	KTA1532T	Transistor	28
KIC3213T22	Integrated Circuit	99	KN3904	Transistor	43	KRC408E	Transistor	34	KTA1532U	Transistor	28
KIC3213T23	Integrated Circuit	99	KN3904	Transistor	17	KRC408V	Transistor	34	KTA1535T	Transistor	28
KIC3213T24	Integrated Circuit	99	KN3904S	Transistor	42	KRC410	Transistor	35	KTA1536T	Transistor	28
KIC3213T25	Integrated Circuit	99	KN3904S	Transistor	15	KRC410E	Transistor	34	KTA1542T	Transistor	28
KIC3213T26	Integrated Circuit	99	KN3906S	Transistor	42	KRC410V	Transistor	34	KTA1544T	Transistor	28
KIC3213T27	Integrated Circuit	99	KN3906S	Transistor	15	KRC411	Transistor	35	KTA1551T	Transistor	28
KIC3213T28	Integrated Circuit	99	KN4401	Transistor	43	KRC411E	Transistor	34	KTA1552T	Transistor	28
KIC3213T29	Integrated Circuit	99	KN4401	Transistor	17	KRC411V	Transistor	34	KTA1572	Transistor	18
KIC3213T30	Integrated Circuit	99	KN4401S	Transistor	42	KRC413	Transistor	35	KTA1658	Transistor	19
KIC3213T31	Integrated Circuit	99	KN4401S	Transistor	15	KRC414	Transistor	35	KTA1659	Transistor	20
KIC3213T32	Integrated Circuit	99	KN4403	Transistor	43	KRC414E	Transistor	34	KTA1659A	Transistor	20
KIC3213T33	Integrated Circuit	99	KN4403	Transistor	17	KRC414V	Transistor	34	KTA1662	Transistor	16
KIC3241S10	Integrated Circuit	100	KN4403S	Transistor	42	KRC416	Transistor	35	KTA1663	Transistor	16
KIC3241S12	Integrated Circuit	100	KN4403S	Transistor	15	KRC417	Transistor	35	KTA1664	Transistor	16
KIC3241S15	Integrated Circuit	100	KP8N60D	MOSFET	87	KRC417E	Transistor	34	KTA1666	Transistor	26
KIC3241S18	Integrated Circuit	100	KP8N60I	MOSFET	87	KRC418	Transistor	35	KTA1668	Transistor	16
KIC3241S25	Integrated Circuit	100	KP8N60F	MOSFET	87	KRC419	Transistor	35	KTA1695	Transistor	20
KIC3241S33	Integrated Circuit	100	KP8N65D	MOSFET	87	KRC422	Transistor	35	KTA1700	Transistor	19
KIC3921T	Integrated Circuit	109	KP8N65I	MOSFET	87	KRC422V	Transistor	34	KTA1703	Transistor	19
KIC3922F	Integrated Circuit	109	KP8N65F	MOSFET	87	KRC652U	Transistor	39	KTA1704	Transistor	19
KIC6961T	Integrated Circuit	110	KP11N60D	MOSFET	87	KRC653E	Transistor	37	KTA1718D	Transistor	26
KIC6982F	Integrated Circuit	110	KP11N60F	MOSFET	87	KRC654F	Transistor	36	KTA1725	Transistor	20
KIC6971MF	Integrated Circuit	110	KP11N65D	MOSFET	87	KRC655U	Transistor	39	KTA1759	Transistor	23
KIC6981MF	Integrated Circuit	110	KP11N65F	MOSFET	87	KRC656E	Transistor	37	KTA1807D	Transistor	26
KIC6983T	Integrated Circuit	110	KP15N60F	MOSFET	87	KRC656U	Transistor	39	KTA1807L	Transistor	27
KIC6971F	Integrated Circuit	110	KP15N65F	MOSFET	87	KRC657E	Transistor	37	KTA1837	Transistor	20
KIC6981F	Integrated Circuit	110	KRA555U	Transistor	41	KRC657F	Transistor	36	KTA1862D	Transistor	26
KIC71**M	Integrated Circuit	98	KRC101	Transistor	35	KRC657U	Transistor	39	KTA1962A	Transistor	20
KIC71**P	Integrated Circuit	98	KRC102	Transistor	35	KRC660U	Transistor	39	KTA200	Transistor	18
KIC71**TS	Integrated Circuit	98	KRC103	Transistor	35	KRC830E	Transistor	36	KTA2012E	Transistor	14
KIC72**M	Integrated Circuit	98	KRC104	Transistor	35	KRC831E	Transistor	36	KTA2013F	Transistor	14
KIC73A~E**M	Integrated Circuit	98	KRC105	Transistor	35	KRC841T	Transistor	42	KTA2013V	Transistor	14
KIC73A~E**M2	Integrated Circuit	98	KRC106	Transistor	35	KRC842E	Transistor	38	KTA2014	Transistor	14
KIC75**M	Integrated Circuit	98	KRC107	Transistor	35	KRC852F	Transistor	37	KTA2014E	Transistor	14
KIC75**P	Integrated Circuit	98	KRC101S	Transistor	35	KRC853U	Transistor	40	KTA2014F	Transistor	14
KIC75**T5	Integrated Circuit	98	KRC102S	Transistor	35	KRC854E	Transistor	38	KTA2014V	Transistor	14
KIC76**M	Integrated Circuit	98	KRC103S	Transistor	35	KRC854F	Transistor	36	KTA2015	Transistor	14
KIC77A~E**M	Integrated Circuit	98	KRC104S	Transistor	35	KRC854U	Transistor	40	KTA539	Transistor	18
KIC77A~E**M2	Integrated Circuit	98	KRC105S	Transistor	35	KRC855E	Transistor	38	KTA701E	Transistor	21
KID65001AF	Integrated Circuit	108	KRC106S	Transistor	35	KRC855U	Transistor	40	KTA701U	Transistor	22
KID65001AP	Integrated Circuit	108	KRC107S	Transistor	35	KRC857E	Transistor	38	KTA711U	Transistor	22
KID65002AF	Integrated Circuit	108	KRC108S	Transistor	35	KRC861E	Transistor	38	KTA712U	Transistor	22
KID65002AP	Integrated Circuit	108	KRC109S	Transistor	35	KRC863E	Transistor	38	KTB1124	Transistor	26
KID65003AF	Integrated Circuit	108	KRC110S	Transistor	35	KRC868U	Transistor	40	KTB1151	Transistor	19
KID65003AP	Integrated Circuit	108	KRC111S	Transistor	35	KRX101E	Transistor	41	KTB1260	Transistor	16
KID65004AF	Integrated Circuit	108	KRC113S	Transistor	35	KRX101U	Transistor	41	KTB1366	Transistor	19
KID65004AP	Integrated Circuit	108	KRC114S	Transistor	35	KRX102E	Transistor	41	KTB1367	Transistor	19
KID65083AF	Integrated Circuit	108	KRC116S	Transistor	35	KRX102U	Transistor	41	KTB1368	Transistor	19
KID65083AP	Integrated Circuit	108	KRC117S	Transistor	35	KRX103E	Transistor	41	KTB1369	Transistor	20
KID65084AF	Integrated Circuit	108	KRC118S	Transistor	35	KRX103U	Transistor	41	KTB1370	Transistor	19

Index

KTb1423	Transistor	25	KTC802E	Transistor	21	MBRF10U200CTA	SBD	69	PG10HSUSF	TVS Diode	73
KTb1424	Transistor	25	KTC8050S	Transistor	14	MBRF10U45CTA	SBD	69	PG12BUS23	TVS Diode	71,74
KTb631K	Transistor	19	KTC811E	Transistor	21	MBRF10U60CTA	SBD	69	PG12ESEL2	TVS Diode	70,73
KTb688	Transistor	20	KTC811T	Transistor	22	MBRF15U45CTA	SBD	69	PG12FBUSC	TVS Diode	71,73
KTb688B	Transistor	20	KTC811U	Transistor	22	MBRF20U100CTA	SBD	69	PG12FXTE6	TVS Diode	72,74
KTb772	Transistor	19	KTC812E	Transistor	21	MBRF20U150CTA	SBD	69	PG12GAS23	TVS Diode	71,74
KTb778	Transistor	20	KTC812T	Transistor	23	MBRF20U200	SBD	69	PG12GCS23	TVS Diode	71,74
KTb817	Transistor	20	KTC812U	Transistor	22	MBRF20U200CTA	SBD	69	PG12GSUSC	TVS Diode	71,73
KTb985	Transistor	27	KTC814U	Transistor	23	MBRF20U45CTA	SBD	69	PG15FBUSC	TVS Diode	71,73
KTC1003	Transistor	20	KTC815	Transistor	18	MBRF20U60CTA	SBD	69	PG15GSUSC	TVS Diode	71,73
KTC1006	Transistor	18	KTC8550S	Transistor	14	MBRF30U100CTA	SBD	69	PG22KSSMA	TVS Diode	71,73
KTC1008	Transistor	18	KTC9012S	Transistor	14	MBRF30U45CTA	SBD	69	PG24EBUSC	TVS Diode	71,73
KTC1027	Transistor	18	KTC9013S	Transistor	14	MBRF30U60CTA	SBD	69	PG24FAS23	TVS Diode	71,74
KTC200	Transistor	18	KTC9014S	Transistor	14	MBRJ15U50	SBD	69	PG24FBTS6	TVS Diode	72,74
KTC2020D	Transistor	16	KTC9015S	Transistor	14	MJD112	Transistor	25	PG24FSUSC	TVS Diode	71,73
KTC2025D	Transistor	16	KTD1003	Transistor	24	MJD112	Transistor	46	PG24GSUSC	TVS Diode	71,73
KTC2026	Transistor	20	KTD1028	Transistor	24	MJD112L	Transistor	25	PG36FSUSC	TVS Diode	71,73
KTC2027	Transistor	20	KTD1047	Transistor	20	MJD112L	Transistor	46	PG43FSUSC	TVS Diode	71,73
KTC2028	Transistor	20	KTD1302	Transistor	23	MJE13003	Transistor	27	PG712FBS23	TVS Diode	71,74
KTC2030D	Transistor	16	KTD1304	Transistor	23	MJE13003	Transistor	47	PG2.8CUS23	TVS Diode	71,74
KTC2036	Transistor	20	KTD1347	Transistor	27	MJE13003HV	Transistor	27	PXTA44	Transistor	16,45
KTC2800	Transistor	19	KTD1411	Transistor	25	MJE13003HV	Transistor	47	SA08A4C	SCR	97
KTC2803	Transistor	19	KTD1413	Transistor	25	MJE13005D	Transistor	27	SA08A6C	SCR	97
KTC2814	Transistor	27	KTD1414	Transistor	25	MJE13005D	Transistor	47	SMAB110	SBD	68
KTC2815D	Transistor	26	KTD1415	Transistor	25	MJE13005DF	Transistor	27	SMAB13	SBD	68
KTC2825D	Transistor	16	KTD1624	Transistor	26	MJE13005DF	Transistor	47	SMAB14	SBD	68
KTC2874	Transistor	23	KTD1691	Transistor	19	MJE13007F	Transistor	27	SMAB16	SBD	68
KTC2875	Transistor	23	KTD1898	Transistor	16	MJE13007F	Transistor	47	SMAB210	SBD	68
KTC2983D	Transistor	16	KTD1937	Transistor	24	MJE13009	Transistor	27	SMAB33	SBD	68
KTC3003	Transistor	27	KTD2058	Transistor	20	MJE13009	Transistor	47	SMAB33L	SBD	68
KTC3003HV	Transistor	27	KTD2059	Transistor	20	MJE13009F	Transistor	27	SMAB34	SBD	68
KTC3072D	Transistor	16	KTD2060	Transistor	20	MJE13009F	Transistor	47	SMAB36	SBD	68
KTC3112	Transistor	24	KTD2061	Transistor	20	MJE5555	Transistor	27,47	SMAZ10V	Zener Diode	57,65
KTC3114	Transistor	24	KTD2066	Transistor	24	MMBTA06	Transistor	15	SMAZ11V	Zener Diode	57,65
KTC3198	Transistor	18	KTD2092	Transistor	24	MMBTA06	Transistor	44	SMAZ12V	Zener Diode	57,65
KTC3202	Transistor	18	KTD600K	Transistor	19	MMBTA13	Transistor	25	SMAZ13V	Zener Diode	57,65
KTC3203	Transistor	18	KTD718	Transistor	20	MMBTA13	Transistor	46	SMAZ15V	Zener Diode	57,65
KTC3205	Transistor	18	KTD718B	Transistor	20	MMBTA42	Transistor	15	SMAZ16V	Zener Diode	57,65
KTC3206	Transistor	18	KTD863	Transistor	18	MMBTA42	Transistor	44	SMAZ18V	Zener Diode	57,65
KTC3207	Transistor	18	KTD882	Transistor	19	MMBTA44	Transistor	15	SMAZ20V	Zener Diode	57,65
KTC3209	Transistor	27	KTD998	Transistor	20	MMBTA44	Transistor	44	SMAZ22V	Zener Diode	57,65
KTC3227	Transistor	18	KTJ6131E	S-MOSFET	82	MMBTA517	Transistor	25	SMAZ24V	Zener Diode	57,65
KTC3228	Transistor	18	KTJ6131V	S-MOSFET	82	MMBTA517	Transistor	46	SMAZ27V	Zener Diode	57,65
KTC3229	Transistor	20	KTK5131E	S-MOSFET	82	MMBTA56	Transistor	15	SMAZ30V	Zener Diode	57,65
KTC3265	Transistor	14	KTK5132E	S-MOSFET	82	MMBTA56	Transistor	44	SMAZ33V	Zener Diode	57,65
KTC3295	Transistor	24	KTK5132S	S-MOSFET	82	MMBTA63	Transistor	25	SMAZ36V	Zener Diode	57,65
KTC3423	Transistor	19	KTK5132U	S-MOSFET	82	MMBTA63	Transistor	46	SMAZ34.3V	Zener Diode	57,65
KTC3503	Transistor	19	KTK5132V	S-MOSFET	82	MMBTA92	Transistor	15	SMAZ24.7V	Zener Diode	57,65
KTC3544S	Transistor	28	KTK5133S	S-MOSFET	82	MMBTA92	Transistor	44	SMAZ5.1V	Zener Diode	57,65
KTC3207T	Transistor	15	KTK5134S	S-MOSFET	82	MP6551	Transistor	17	SMAZ5.6V	Zener Diode	57,65
KTC3531T	Transistor	28	KTK5162S	S-MOSFET	82	MP6551	Transistor	45	SMAZ6.2V	Zener Diode	57,65
KTC3532T	Transistor	28	KTK5164S	S-MOSFET	82	MP6751	Transistor	17	SMAZ6.8V	Zener Diode	57,65
KTC3535T	Transistor	28	KTK7132E	S-MOSFET	82	MP6751	Transistor	45	SMAZ27.5V	Zener Diode	57,65
KTC3542T	Transistor	28	KTK497	JFET	29	MPS8050S	Transistor	15	SMAZ8.2V	Zener Diode	57,65
KTC3544T	Transistor	28	KTN2222A	Transistor	27	MPS8550S	Transistor	15	SMAZ9.1V	Zener Diode	57,65
KTC3551T	Transistor	28	KTN2222A	Transistor	47	MP5A42	Transistor	18	SMFB13	SBD	68
KTC3552T	Transistor	28	KTN2222AS	Transistor	26	MP5A42	Transistor	45	SMFB13L	SBD	68
KTC3571S	Transistor	28	KTN2222AS	Transistor	47	MP5A44	Transistor	18	SMFB14	SBD	68
KTC3572	Transistor	18	KTN2222AU	Transistor	26	MP5A44	Transistor	45	SMFB16	SBD	68
KTC3573	Transistor	28	KTN2222AU	Transistor	47	PG03BBUL2	TVS Diode	70,74	SMFB23	SBD	68
KTC3875S	Transistor	14	KTN2907A	Transistor	27	PG03DBTFC	TVS Diode	70,73	SMFB23L	SBD	68
KTC3876S	Transistor	14	KTN2907A	Transistor	47	PG03DBVSC	TVS Diode	70,73	SMFZ10V	Zener Diode	57,65
KTC3964	Transistor	26	KTN2907AS	Transistor	26	PG03ESEL2	TVS Diode	70,73	SMFZ11V	Zener Diode	57,65
KTC4072E	Transistor	14	KTN2907AS	Transistor	47	PG03FBESC	TVS Diode	70,73	SMFZ12V	Zener Diode	57,65
KTC4075	Transistor	14	KTN2907AU	Transistor	26	PG03FSESC	TVS Diode	70,73	SMFZ13V	Zener Diode	57,65
KTC4075E	Transistor	14	KTN2907AU	Transistor	47	PG03FSTFC	TVS Diode	70,73	SMFZ15V	Zener Diode	57,65
KTC4075F	Transistor	14	KTX101E	Transistor	21	PG03FSVSC	TVS Diode	70,73	SMFZ16V	Zener Diode	57,65
KTC4075V	Transistor	14	KTX101U	Transistor	22	PG03GXT6	TVS Diode	72,74	SMFZ18V	Zener Diode	57,65
KTC4076	Transistor	14	KTX102E	Transistor	21	PG05AVUS6	TVS Diode	72,74	SMFZ20V	Zener Diode	57,65
KTC4217	Transistor	19	KTX111T	Transistor	22	PG05BAUSM	TVS Diode	71,74	SMFZ22V	Zener Diode	57,65
KTC4369	Transistor	20	KTX213U	Transistor	30	PG05BSESC	TVS Diode	70,73	SMFZ24V	Zener Diode	57,65
KTC4370	Transistor	20	KTX321U	Transistor	30	PG05BUS23	TVS Diode	71,74	SMFZ27V	Zener Diode	57,65
KTC4370A	Transistor	20	KTX711T	Transistor	30	PG05DBEL2	TVS Diode	70,73	SMFZ30V	Zener Diode	57,65
KTC4373	Transistor	16	KTX811T	Transistor	30	PG05DBEL2A	TVS Diode	70,73	SMFZ33V	Zener Diode	57,65
KTC4374	Transistor	16	KU086N10F	MOSFET	84	PG05DBTFC	TVS Diode	70,73	SMFZ36V	Zener Diode	57,65
KTC4375	Transistor	16	KU086N10P	MOSFET	84	PG05DBVSC	TVS Diode	70,73	SMFZ4.3V	Zener Diode	57,65
KTC4376	Transistor	16	KU310N10D	MOSFET	84	PG05EAS23	TVS Diode	70,74	SMFZ4.7V	Zener Diode	57,65
KTC4378	Transistor	16	KU310N10F	MOSFET	84	PG05ESEL2	TVS Diode	71,74	SMFZ5.1V	Zener Diode	57,65
KTC4379	Transistor	26	KU310N10P	MOSFET	84	PG05ESEL2	TVS Diode	70,73	SMFZ5.6V	Zener Diode	57,65
KTC4380	Transistor	16	KU3600N10D	MOSFET	84	PG05FBESC	TVS Diode	70,73	SMFZ26.2V	Zener Diode	57,65
KTC4419	Transistor	27	KU3600N10W	MOSFET	84	PG05FSESC	TVS Diode	70,73	SMFZ6.8V	Zener Diode	57,65
KTC4468	Transistor	20	KU3000DN10CZ	MOSFET	84	PG05FSTFC	TVS Diode	70,73	SMFZ7.5V	Zener Diode	57,65
KTC4793	Transistor	20	MBRD10U100CT	SBD	69	PG05FSUL2	TVS Diode	70,73	SMFZ28.2V	Zener Diode	57,65
KTC5027	Transistor	27	MBRD10U150	SBD	69	PG05FSVSC	TVS Diode	70,73	SMFZ29.1V	Zener Diode	57,65
KTC5027	Transistor	47	MBRD10U200CT	SBD	69	PG05GBUSC	TVS Diode	71,73	TIP31CF	Transistor	20
KTC5027F	Transistor	27	MBRD10U60CT	SBD	69	PG05GBUSV	TVS Diode	72,74	TIP32CF	Transistor	20
KTC5027F	Transistor	47	MBRD5U100D	SBD	69	PG05GSUL2	TVS Diode	70,73	TIP35C	Transistor	20
KTC5103D	Transistor	26	MBRD5U150	SBD	69	PG05GXT6	TVS Diode	72,74	TIP35C	Transistor	46
KTC5242A	Transistor	20	MBRD5U200D	SBD	69	PG05HAS23	TVS Diode	71,74	TIP36C	Transistor	20
KTC601E	Transistor	21	MBRD6U60CT	SBD	69	PG05HBT56	TVS Diode	72,74	TIP36C	Transistor	46
KTC801E	Transistor	21	MBRF10U100CTA	SBD	69	PG05TBUL2	TVS Diode	70,74	TIP41CF	Transistor	20
KTC801U	Transistor	22	MBRF10U150CTA	SBD	69	PG05TBUL2A	TVS Diode	70,74	TIP42CF	Transistor	20

Index

TT1A6C	Triansistor	97							
U10A2CIC	UFRD	75							
U10A3CIC	UFRD	75							
U10A6CDC	UFRD	75							
U10A6CI	UFRD	75							
U10A6CIC	UFRD	75							
U20A3CFC	UFRD	75							
U20A3CIC	UFRD	75							
U20A4CIC	UFRD	75							
U20A6CIC	UFRD	75							
U5A6CD	UFRD	75							
U5A6CI	UFRD	75							
U8A6CD	UFRD	75							
U8A6CI	UFRD	75							
USCZ5.6V	Zener Diode	57, 61							
USFB053	SBD	68							
USFB13	SBD	68							
USFB13A	SBD	68							
USFB13L	SBD	68							
USFB14	SBD	68							
USFZ10V	Zener Diode	57, 64							
USFZ11V	Zener Diode	57, 64							
USFZ12V	Zener Diode	57, 64							
USFZ13V	Zener Diode	57, 64							
USFZ15V	Zener Diode	57, 64							
USFZ16V	Zener Diode	57, 64							
USFZ18V	Zener Diode	57, 64							
USFZ20V	Zener Diode	57, 64							
USFZ22V	Zener Diode	57, 64							
USFZ24V	Zener Diode	57, 64							
USFZ27V	Zener Diode	57, 64							
USFZ30V	Zener Diode	57, 64							
USFZ33V	Zener Diode	57, 64							
USFZ36V	Zener Diode	57, 64							
USFZ4.3V	Zener Diode	57, 64							
USFZ4.7V	Zener Diode	57, 64							
USFZ5.1V	Zener Diode	57, 64							
USFZ5.6V	Zener Diode	57, 64							
USFZ6.2V	Zener Diode	57, 64							
USFZ6.8V	Zener Diode	57, 64							
USFZ7.5V	Zener Diode	57, 64							
USFZ8.2V	Zener Diode	57, 64							
USFZ9.1V	Zener Diode	57, 64							
Z02W100V	Zener Diode	57, 66							
Z02W10V	Zener Diode	57, 62							
Z02W11V	Zener Diode	57, 62							
Z02W12V	Zener Diode	57, 62							
Z02W13V	Zener Diode	57, 62							
Z02W15V	Zener Diode	57, 62							
Z02W16V	Zener Diode	57, 62							
Z02W18V	Zener Diode	57, 62							
Z02W2.0V	Zener Diode	57, 62							
Z02W2.2V	Zener Diode	57, 62							
Z02W2.4V	Zener Diode	57, 62							
Z02W2.7V	Zener Diode	57, 62							
Z02W20V	Zener Diode	57, 62							
Z02W22V	Zener Diode	57, 62							
Z02W24V	Zener Diode	57, 62							
Z02W27V	Zener Diode	57, 62							
Z02W3.0V	Zener Diode	57, 62							
Z02W3.3V	Zener Diode	57, 62							
Z02W3.6V	Zener Diode	57, 62							
Z02W3.9V	Zener Diode	57, 62							
Z02W30V	Zener Diode	57, 62							
Z02W33V	Zener Diode	57, 62							
Z02W36V	Zener Diode	57, 62							
Z02W4.3V	Zener Diode	57, 62							
Z02W4.7V	Zener Diode	57, 62							
Z02W5.1V	Zener Diode	57, 62							
Z02W5.6V	Zener Diode	57, 62							
Z02W6.2V	Zener Diode	57, 62							
Z02W6.8V	Zener Diode	57, 62							
Z02W7.5V	Zener Diode	57, 62							
Z02W8.2V	Zener Diode	57, 62							
Z02W9.1V	Zener Diode	57, 62							
Z4W27V	Zener Diode	77							
Z4W37V	Zener Diode	77							
Z5W27V	Zener Diode	77							
Z5W37V	Zener Diode	77							
Z5W43V	Zener Diode	77							
Z6W27V	Zener Diode	77							
Z8W27V	Zener Diode	77							

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