

PHASE CONTROL SCR's LOW CURRENT .5 TO 4.0 AMPERES

GE TYPE	C3	C103	C8	C6	C7	C5	—	C106	C107
JEDEC	2N877-81	—	2N1929-35	—	2N2344-48	2N2322-29 *	2N1595-99	—	—

ELECTRICAL SPECIFICATIONS									
VOLTAGE RANGE	30-200	30-200	25-300	25-200	25-200	25-400	50-400	15-400	15-400

FORWARD CONDUCTION										
$I_{T(RMS)}$	Max. RMS on-state current (A)	0.50	0.80	1.10	1.60	1.60	1.60	1.60	4.00	4.00
$I_{T(AV)}$	Max. average on-state current @ 180° conduction (A) @ T _c	0.32 @ 75°C	0.50 @ 25°C	0.81 @ 25°C	1.0 @ 85°C	1.0 @ 55°C	1.0 @ 85°C	1.0 @ 110°C	2.5 @ 30°C	2.5 @ 20°C
I_{TSM}	Max. peak one cycle, non-repetitive surge current (A)	7	8.0	30	—	15	15	15	20	15
I^2t	Max. I^2t for fusing for <1.5 msec (A ² sec)	—	—	—	0.5	—	0.5	0.5	0.5	0.5
V_{FM}	Max. peak on-state voltage @ 25°C, 180° conduction, rated $I_{T(AV)}$ (V)	1.6	1.5	1.1	1.4	2.0	2.2	2.0	2.2	2.5
θ_{J-C}	Max. internal thermal resistance, dc, junction-to-case (°C/W)	80	125	90 ³	18	18	18	18	10	10
I_H	Typical holding current @ 25°C (mA)	1.7	5.0	3.0	1.0	1.0	2.0	0.5	1.0	3.0
t_q	Typical turn-off time (μsec)	15	15	6.0	40	20	40	40	40	40
$t_d + t_r$	Typical turn-on time (μsec)	1.0	—	1.5	1.4	1.4	1.4	1.2	1.2	1.2
di/dt	Max. rate-of-rise turned-on current (A/μsec)	—	—	—	—	—	50	—	50	50
T_J	Junction operating temperature range (°C)	-65 to 125	-65 to 125	-65 to 125	-40 to 125	-65 to 100	-65 to 125	-65 to 150	-40 to 110	-40 to 110

BLOCKING										
dv/dt	Typical critical rate-of-rise of off-stage voltage, exponential to rated V_{DRM} @ max. rated T_J (V/μsec)	40	20	20	20	20	20	20	8	8

FIRING										
I_{GT}	Max. required gate current to trigger (μA) @ -65°C	300	500	30 ¹	—	75	350	—	—	—
	@ -40°C	—	—	—	—	—	—	—	500	—
	@ 25°C	200	200	15 ¹	1.0 ¹	20	200	10	200	500
	@ 125°C	100	—	8	—	—	—	—	—	—
V_{GT}	Max. required gate voltage to trigger (V) @ -65°C	1.0	1.0	—	—	1.0	1.0	—	—	—
	@ -40°C	—	—	—	1.0	—	—	—	1.0	—
	@ 25°C	0.8	0.8	2	0.8	0.8	0.8	3.0	0.8	0.8
V_{GT}	Min. required gate voltage to trigger (V) @ 100°C	—	—	—	—	—	—	—	@ 110°C 0.2	@ 110°C 0.2
	@ 125°C	0.05	0.1	0.3	0.1	0.1	0.1	—	—	—

VOLTAGE TYPES										
Repetitive Peak Forward and Reverse Voltages										
15	—	—	—	—	—	—	—	—	C106Q1-4	C107Q1-4
25	—	—	2N1929	C6U	2N2344	2N2322	—	—	—	—
30	2N877	C103Y	—	—	—	—	—	—	C106Y1-4	C107Y1-4
50	—	—	2N1930	C6F	2N2345	2N2323 *	2N1596	—	C106F1-4	C107F1-4
60	2N878	C103YY	—	—	—	—	—	—	—	—
100	2N879	C103A	2N1931	C6A	2N2346	2N2324 *	2N1598	—	C106A1-4	C107A1-4
150	2N880	—	2N1932	C6G	2N2347	2N2325	—	—	—	—
200	2N881	C103B	2N1933	C6B	2N2348	2N2326 *	2N1597	—	C106B1-4	C107B1-4
250	—	—	2N1934	—	—	—	2N2327	2N1599	—	—
300	—	—	2N1935	—	—	—	2N2328	2N1599	C106C1-4	C107C1-4
400	—	—	—	—	—	—	2N2329	—	C106D1-4	C107D1-4
PACKAGE OUTLINE NO.	112	195.1 228	103	102.1	101	102.1	101	232	—	232
SPECIFICATION SHEET NO.	150.5	150.7	150.12	150.8	150.11	150.10	150.15	150.9	150.13	150.13

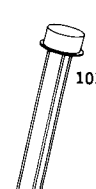
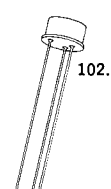
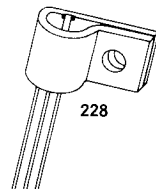
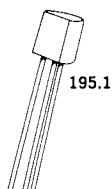
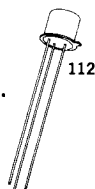
* JAN & JANTX types available

¹ Units = mA

² Maximum turn-on time

³ Junction to ambient

See Trigger Selector Guide page 33.



HIGH RELIABILITY SPECIFICATIONS (Continued)

High Rel. Type	Commercial Type	Conservative Design Maximum Conditions				Estimated Maximum Failure Rate in Conservatively Designed Equipment %/1000 hrs.
		I_D	T_{SIG}, T_{JOP}	V_{ORM}, V_{RRM}	V_{RSM}	
C5AR1200	2N2324	1.6A	-65 to +85°C	50V	100V	.001
C5BR1200	2N2326	1.6A	-65 to +85°C	100V	200V	.001
C5DR1200	2N2329	1.6A	-65 to +85°C	200V	400V	.001
C10AR1200	2N1772A	4.7A	-65 to +100°C	50V	100V	.001
C10BR1200	2N1774A	4.7A	-65 to +100°C	100V	200V	.001
C10DR1200	2N1777A	4.7A	-65 to +100°C	200V	400V	.001
C11AR1200	2N1772	4.7A	-65 to +85°C	50V	100V	.001
C11BR1200	2N1774	4.7A	-65 to +85°C	100V	200V	.001
C11DR1200	2N1777	4.7A	-65 to +85°C	200V	400V	.001
C11MR1200	2N2619	4.7A	-65 to +85°C	300V	600V	.001
C35AR1200	2N683	16A	-65 to +85°C	50V	100V	.001
C35BR1200	2N685	16A	-65 to +85°C	100V	200V	.001
C35DR1200	2N688	16A	-65 to +85°C	200V	400V	.001
C35ER1200	2N689	16A	-65 to +85°C	250V	500V	.001
C35MR1200	2N690	16A	-65 to +85°C	300V	600V	.001
C38BR1200	2N685	16A	-65 to +100°C	100V	200V	.001
C38HR1200	2N686	16A	-65 to +100°C	125V	250V	.001
C38DR1200	2N688	16A	-65 to +100°C	200V	400V	.001
C137MR1200	2N5204	22.3A	-65 to +85°C	300V	600V	.001

SILICON ZENER DIODES

Type	V_Z AVALANCHE VOLTAGE ¹ @ $I_{ZT}, 25^\circ\text{C}$ (V)			I_{ZT} Test Current (mA)	Z_{ZT} Maximum Dynamic Impedance @ $I_{ZT}, 25^\circ\text{C}$ (Ω)	I_L Leakage Current @ $V_L, 25^\circ\text{C}$ Max.		Temp. Coefficient Typical (%/°C)	ΔV_Z Voltage Regulation Typical (V)	I_{ZM} AVALANCHE CURRENT Max. (mA)			Package Outline No.
	10% Min.	Nominal	10% Max.			V_L (V)	I_L (mA)			@ 50°C	@ 100°C	@ 150°C	
Z4X5.1B	4.6	5.1	5.6	100	7.0	4.1	15.00	0.013	0.11	160	96	32	118
1N1765	5.0	5.6	6.2	100	1.2	4.5	5.00	0.021	0.14	150	88	29	118
1N1766	5.6	6.2	6.8	100	1.5	5.0	1.70	0.030	0.16	130	79	26	118
1N1767	6.1	6.8	7.5	100	1.7	5.4	0.95	0.037	0.20	120	72	24	118
1N1768	6.8	7.5	8.3	100	2.1	6.0	0.75	0.044	0.24	109	65	22	118
1N1769	7.4	8.2	9.0	100	2.4	6.6	0.64	0.050	0.28	100	60	20	118
1N1770	8.2	9.1	10.0	50	3.0	7.3	0.52	0.056	0.34	90	54	18	118
1N1771	9.0	10.0	11.0	50	3.5	8.0	0.44	0.062	0.41	82	49	16	118
1N1772	9.9	11.0	12.1	50	4.2	8.8	0.38	0.067	0.48	74	45	15	118
1N1773	10.8	12.0	13.2	50	5.0	9.6	0.34	0.071	0.57	68	41	14	118
1N1774	11.7	13.0	14.3	50	5.8	10.4	0.31	0.074	0.66	63	38	13	118
Z4X14B	12.6	14.0	15.4	50	6.6	11.2	0.29	0.077	0.75	58	35	12	118
1N1775	13.5	15.0	16.5	50	7.6	12.0	0.26	0.080	0.86	54	33	11	118
1N1776	14.4	16.0	17.6	50	8.6	12.8	0.24	0.082	0.97	51	31	10	118
	20% Min.		20% Max.								@ 125°C		
Z4XL6.2	4.96	6.2	7.44	20	9			.030		123	48		118
Z4XL7.5	6.00	7.5	9.00	20	12			.044		101	39		118
Z4XL9.1	7.28	9.1	10.9	20	15			.056		83	32		118
Z4XL12	9.80	12.0	14.4	20	24			.071		63	24		118
Z4XL14	11.2	14.0	16.8	20	3.0			.077		54	20		118
Z4XL16	12.8	16.0	19.2	20	40			.082		47	18		118
Z4XL18	14.4	18.0	21.6	20	50			.085		43	16		118
Z4XL20	16.0	20.0	24.0	20	60			.088		38	14		118
Z4XL22	17.6	22.0	26.0	20	72			.090		34	13		118

¹ Standard 1N or Z4X types are supplied to the $\pm 10\%$ of voltage values listed. For 5% tolerance; (1) Add "A" suffix to 1N number, i.e. 1N1776A. (2) Change "B" suffix on Z4X number to "A" i.e. Z4X5.1A. Standard Z4XL types are supplied to the $\pm 20\%$ of voltage values listed. For 10% tolerance, add suffix "B" to type number, i.e. Z4XL6.2B.

