RADIAL TYPE

TK Series

Wide Temperature Range

JAMICON®

SM ◀ TK ▶ TM

- High temperature 105°C and high reliability

SPECIFICATION

Item	Characteristic															
Operation Temperature Range	-55 ~ +105°C						-40 ~ +105°C						-25 ~ +105°C			
Rated Working Voltage	6.3 ~ 100VDC						160 ~ 400VDC						450VDC			
Capacitance Tolerance (120Hz 20°C)	±20%(M)															
Leakage Current (20°C)	6.3~100 VDC I ≦0.01CV or 4 (μA)								160~450 VDC I ≦0.03CV +40 (μA)max							
	*Whichever is greater after 3 minutes I : Leakage Current(μA) C : Rated Capacitance(μF) V : Working Voltage(V)															
Surge Voltage (20°C)	W.V.	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	
	S.V.	8	13	20	32	44	63	79	125	200	250	300	400	450	500	
Dissipation Factor (tan δ) (120Hz 20°C)	Add 0.02 per 1000 μF for more than 1000 μF															
	W.V.	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	
	tan δ	0.24	0.20	0.17	0.15	0.12	0.10	0.10	0.08	0.15	0.15	0.15	0.20	0.20	0.20	
Low Temperature Stability	Impedance ratio at 120Hz															
	Rated Voltage (V)	6.3	10	16	25	35~100	160~250	350~400	450							
	-25°C / +20°C	4	3	2	2	2	3	6	15							
	-40°C / +20°C	10	8	6	4	3	4	10	—							
Load Life	After 2000 hours application of W.V. at +105°C, the capacitor shall meet the following limits.															
	Capacitance Change	≦±25% of initial value for 6.3~16 W.V., ≦±20% of initial value for 25~450 W.V.														
	Dissipation Factor	≦200% of initial specified value														
	Leakage current	≦initial specified value														
Shelf Life	At +105°C no voltage application after 1000 hours the capacitor shall meet the limits for load life characteristics. (with voltage treatment)															

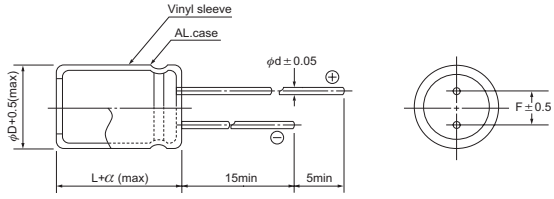
DIMENSIONS (mm)

φD	5	6.3	8	10	12.5	16	18	20	22	25
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5
d	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8	2.0	1.0
α	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0

RIPPLE CURRENT COEFFICIENTS

Temperature(°C)	65	85	105
Multiplier	1.75	1.40	1.00

Frequency(Hz)	60	120	1K	≧10K
W.V.	Multiplier			
6.3~25V	0.85	1.00	1.10	1.20
35~100V	0.80	1.00	1.15	1.25
160~250V	0.75	1.00	1.25	1.40
350~450V	0.70	1.00	1.30	1.80



CASE SIZE & MAX RIPPLE CURRENT

Case size : D x L (mm)
Max ripple current : mA(rms) 105°C 120Hz

μF	Code	V(Code) / Item	6.3 (0J)		10 (1A)		16 (1C)	
			DxL	R.C.	DxL	R.C.	DxL	R.C.
47	470					→	5x11	75
100	101		5x11	95	5x11	100	5x11	110
220	221		5x11	140	5x11	150	6.3x11	190
330	331		6.3x11	200	6.3x11	210	8x11.5	270
470	471		6.3x11	230	6.3x11	260	8x11.5	320
1000	102		8x11.5	400	10x12.5	460	10x16	550
2200	222		10x16	660	10x20	790	12.5x20	910
3300	332		10x20	860	12.5x20	990	12.5x25	1170
4700	472		12.5x20	1040	12.5x25	1230	16x25	1310
6800	682		12.5x25	1300	16x25	1390	16x31.5	1620
10000	103		16x25	1450	16x35.5	1780	18x35.5	1970
15000	153		16x35.5	1860	18x35.5	2060	20x40	2210
22000	223		18x40	2250	20x40	2460	22x50	2940
33000	333		22x50	2950	22x50	3020	25x50	3300

All blank voltage on sleeve marking is the same voltage as" → "point to.

μF	Code	V(Code) / Item	25 (1E)		35 (1V)		50 (1H)	
			DxL	R.C.	DxL	R.C.	DxL	R.C.
0.1	0R1					→	5x11	5
0.22	R22					→	5x11	7
0.33	R33					→	5x11	8
0.47	R47					→	5x11	10
1	010					→	5x11	15
2.2	2R2					→	5x11	22
3.3	3R3					→	5x11	27
4.7	4R7					→	5x11	32
10	100		5x11	38	5x11	42	5x11	46
22	220		5x11	55	5x11	65	5x11	70
33	330		5x11	70	5x11	75	5x11	85
47	470		5x11	80	5x11	90	6.3x11	110
100	101		6.3x11	140	6.3x11	150	8x11.5	190
220	221		8x11.5	240	8x11.5	260	10x12.5	300
330	331		8x11.5	290	10x12.5	340	10x16	410
470	471		10x12.5	360	10x16	450	10x20	540
1000	102		10x20	650	12.5x20	770	12.5x25	930
2200	222		12.5x25	1060	16x25	1180	16x35.5	1480
3300	332		16x25	1240	16x35.5	1570	18x35.5	1790
4700	472		16x31.5	1520	18x35.5	1840		
6800	682		18x35.5	1890				
10000	103		20x40	2270				
15000	153		22x50	2840				
22000	223		25x50	3210				

CASE SIZE & MAX RIPPLE CURRENT

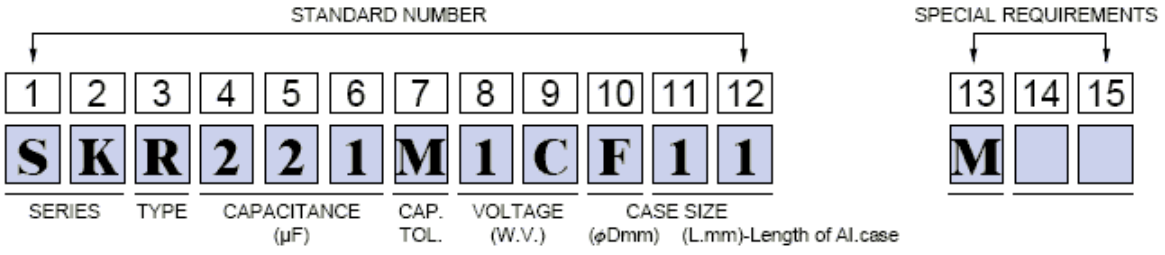
Case size : D x L (mm)
Max ripple current : mA(rms) 105°C 120Hz

μF \ V(Code) / Item / Code		63 (1J)		100 (2A)	
		DxL	R.C.	DxL	R.C.
0.1	0R1		→	5x11	5
0.22	R22		→	5x11	8
0.33	R33		→	5x11	9
0.47	R47		→	5x11	11
1	010		→	5x11	16
2.2	2R2		→	5x11	24
3.3	3R3		→	5x11	30
4.7	4R7		→	5x11	35
10	100	5x11	46	6.3x11	55
22	220	5x11	70	6.3x11	85
33	330	6.3x11	95	8x11.5	120
47	470	6.3x11	110	10x12.5	160
100	101	10x12.5	200	10x20	280
220	221	10x16	340	12.5x25	490
330	331	10x20	460	12.5x25	600
470	471	12.5x20	580	16x25	720
1000	102	16x25	940	18x40	1380
2200	222			22x50	2260

All blank voltage on sleeve marking is the same voltage as" → "point to.

μF \ V(Code) / Item / Code		160 (2C)		200 (2D)		250 (2E)	
		DxL	R.C.	DxL	R.C.	DxL	R.C.
0.47	R47	6.3x11	9	6.3x11	10	6.3x11	11
1	010	6.3x11	14	6.3x11	15	6.3x11	16
2.2	2R2	6.3x11	20	6.3x11	22	6.3x11	24
3.3	3R3	6.3x11	25	6.3x11	26	8x11.5	34
4.7	4R7	6.3x11	29	8x11.5	37	8x11.5	40
10	100	8x11.5	50	10x12.5	55	10x16	70
22	220	10x16	85	10x20	100	12.5x20	120
33	330	10x20	120	12.5x20	130	12.5x20	150
47	470	12.5x20	150	12.5x20	160	12.5x25	190
100	101	12.5x25	240	16x25	260	16x31.5	310
220	221	16x35.5	420	18x40	510		
330	331	18x40	580				
470	471	22x40	770				
1000	102	25x50	1330				

μF \ V(Code) / Item / Code		350 (2V)		400 (2G)		450 (2W)	
		DxL	R.C.	DxL	R.C.	DxL	R.C.
0.47	R47	8x11.5	11	8x11.5	11	10x12.5	11
1	010	8x11.5	16	8x11.5	16	10x12.5	17
2.2	2R2	8x11.5	24	10x12.5	26	10x20	30
3.3	3R3	10x12.5	30	10x12.5	31	12.5x20	40
4.7	4R7	10x12.5	36	10x16	42	12.5x20	47
10	100	10x20	65	12.5x20	70	16x25	75
22	220	12.5x25	110	12.5x25	120	16x31.5	130
33	330	16x25	140	16x31.5	160	18x35.5	170
47	470	16x35.5	190	18x35.5	210		
100	101	18x40	320	20x40	350		
220	221	22x50	580				



Series		Code	Type	Description
PS	TH	R	Radial	Bulk
PT	TX			
CS	WB	P		Taping (Ammo Pack)
CR	FS			
CT	UK	C		Lead Cut
CH	NC			
CL	LP	F		Lead Forming Cut
CF	HP			
SV	LS	B		Lead Forming Only
ST	HS			
NT	LT	Y		Lead Snap in
SS	HT			
SH	HV	W	Lug	Snap in Terminal
SL	KP			
NS	RP	G		G Type Terminal
SK				
SM		V		V Type Terminal
TK				
TM		S	Screw	Screw Terminal Type
NK				
LK		M	Chip	Surface Mount Type
WL				
WG		E	Chip	Horizntal Molded
TL				

CAP (μF)	Code
0.1	OR1
0.22	R22
0.33	R33
0.47	R47
1	010
2.2	2R2
3.3	3R3
4.7	4R7
10	100
22	220
33	330
47	470
100	101
220	221
330	331
470	471
1000	102
2200	222
3300	332
4700	472
10000	103
22000	223
33000	333
47000	473

Tolerance (%)	Code
+10	K
-10	
+15	L
-15	
+20	M
-20	
+100	P
-0	
+30	Q
-10	
+20	R
-0	
+50	T
-10	
+75	U
-10	
+20	V
-10	
+20	H
-5	
+30	F
-0	
+100	W
-10	

Voltage (W.V.)	Code
4	0G
6.3	0J
10	1A
13	1P
16	1C
20	1D
25	1E
35	1V
40	1G
50	1H
63	1J
80	1K
100	2A
125	2B
160	2C
180	2M
200	2D
250	2E
315	2F
330	2U
350	2V
400	2G
450	2W
500	2H

Diameter (φ)	Code
3	A
3.8	S
4	C
5	D
6	W
6.3	E
7	Y
8	F
10	G
12	H
12.5	I
13	J
16	K
18	L
20	M
22	N
25	O
30	P
35	Q
40	R
51	V
64	1
77	2
90	3

Length (L)	Code
11	11
11.5	BB
12.5	BC
31.5	DB
35.5	DF
100	1H
110	1A
115	1K
120	1B
121	1M
130	1C
131	1P
140	1D
144	1Q
150	1E
155	1N
157	1R
160	1F
170	1G
180	1I
190	1J
196	1S
215	1L
236	1T

Code	Description
W	Without Sleeve
1~9	Customer
A~Z	Assign
a~	Brand

SPECIFICATION

Lead taping is designed for automatic insertion equipment. Capacitor with case size of 18mm x 35.5mm or smaller are available in taping type.

DIMENSIONS (ϕ4~ϕ10)

(mm)

Item	Symbol	Case Size														Tolerance	Remark
		4 x 5	5 x 5	6.3x5	8 x 5	4 x 7	5 x 7	6.3x7	8 x 7	5 x 11	6.3x11	8 x 11.5	10x12.5	10x16	10x18	10x20	
Lead wire diameter	d	0.45							0.5			0.6					±0.05	
Body height	A	6.0				8.0				12.5		13	14	17.5	19.5	21.5	max	
Intervals of bodies	P	12.7															±1.0	
Intervals of punched holes	P_0	12.7															±0.2	
Distance between holes and lead wire	P_1	3.85															±0.7	Fig 1. Fig 4.
		5.35	5.1	5.1			5.35	5.1	5.1			5.1						Fig 2.
		5.6	5.35	5.1	5.1	5.6	5.35	5.1	4.6	5.35	5.1	4.6						Fig 3.
Distance between holes and bodies	P_2	6.35															±1.0	
Distance between lead and lead	F	5.0															+0.8 −0.2	Fig 1. Fig 4.
		2.0	2.5	2.5			2.0	2.5	2.5			2.5						Fig 2.F_1:5.0 $^{+0.5}_{-1.0}$
		1.5	2.0	2.5	2.5	1.5	2.0	2.5	3.5	2.0	2.5	3.5						Fig 3.F_1:5.0 $^{+0.5}_{-1.0}$
Base tape width	W	18.0															±0.5	
Adhesive tape width	W_0	12.5															min	
Deviation between holes and base tape	W_1	9.0															±0.5	
Deviation between adhesive and base tape	W_2	1.5															max	
Distance between body bottom and tape center	H	17.5								18.5		20.0	18.5				±0.5	Fig 1. Fig 4.
		17.5								18.5		18.5						Fig 2. Fig 3.
Lead wire clinched hight	H_0	16.0															±0.5	
Distance between body top and tape center	H_1	24.5				27.5				32.5			33.0	36.0	38.0	41.0	max	
Punched hole diameter	D_0	4.0															±0.3	
Length of not good lead slit	L	11.0															max	
Base and adhesive tape thickness	t	0.6															±0.3	
Deviation of body alignment	Δh	0															±2.0	
Deviation of body alignment	$\Delta h1$	0															±1.0	

Fig 1. (ϕ4~ϕ8)

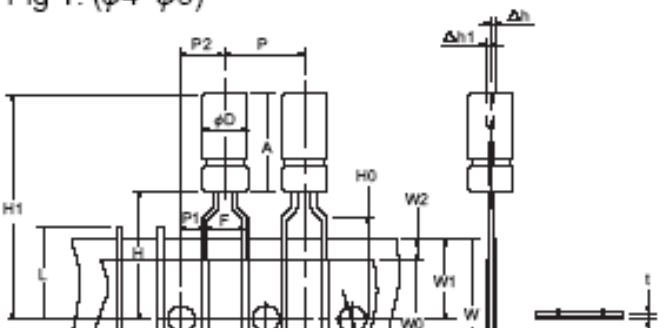
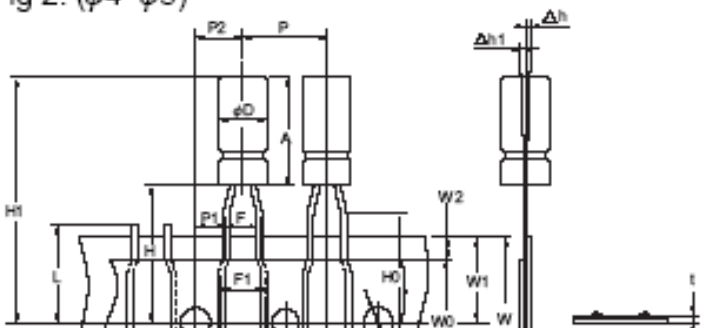
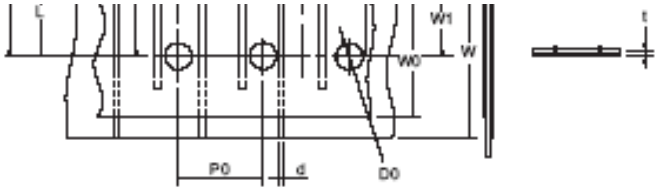


Fig 2. (ϕ4~ϕ5)





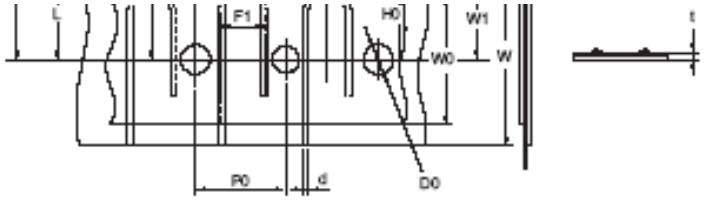


Fig 3. (ϕ4~ϕ8)

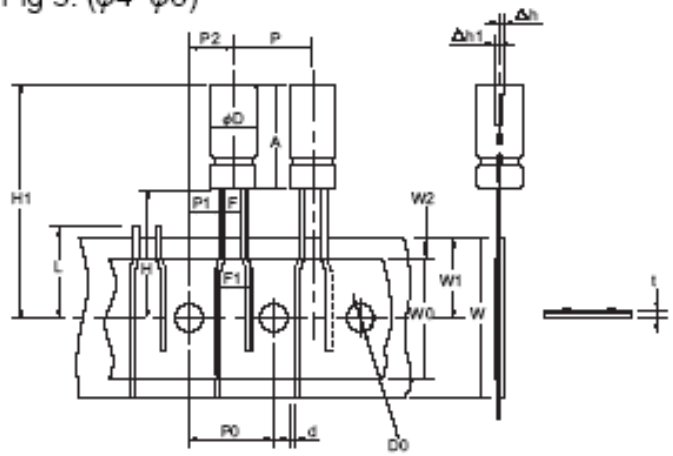
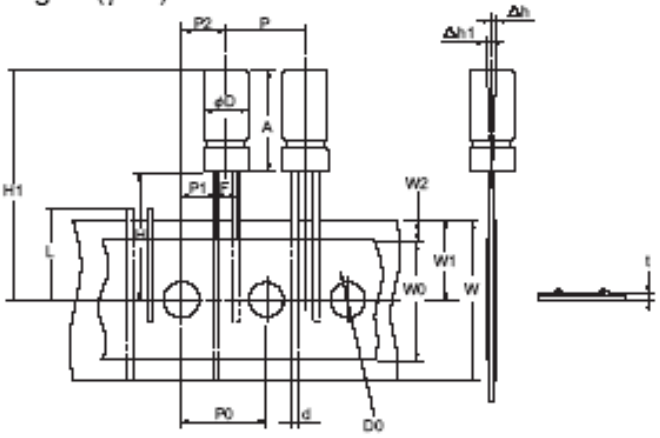


Fig 4. (ϕ10)



DIMENSIONS (ϕ13~ϕ18)

(mm)

Item	Symbol	Case Size							Tolerance	Remark
		12.5 x 20	12.5 x 25	12.5 x 30	16 x 25	16 x 31.5	16 x 35.5	18 x 35.5		
Lead wire diameter	d	0.6			0.8				±0.05	
Body height	A	21.5	26.5	31.5	26.5	33	37.0	37.0	max	
Intervals of bodies	P	15.0			30.0				±1.0	Fig 5. Fig 6.
Intervals of punched holes	P_0	15.0							±0.2	
Distance between holes and lead wire	P_1	5.0			3.75				±0.7	
Distance between holes and bodies	P_2	7.5							±1.0	
Distance between lead and lead	F	5.0			7.5				+0.8 −0.2	
Base tape width	W	18.0							±0.5	
Adhesive tape width	W_0	15.0							min	
Deviation between holes and base tape	W_1	9.0							±0.5	
Deviation between adhesive and base tape	W_2	1.5							max	
Distance between body bottom and tape center	H	16.5			18.5				±0.5	Fig 5. Fig 6.
Distance between body top and tape center	H_1	40.5	45.5	50.5	46.5	53.5	56.5	56.5	max	
Punched hole diameter	D_0	4.0							±0.3	
Length of not good lead slit	L	11.0							max	
Base and adhesive tape thickness	t	0.6							±0.3	
Deviation of body alignment	Δh	0							±2.0	
Deviation of body alignment	Δh1	0							±1.0	

Deviation of body alignment	Δh	0	±2.0	
Deviation of body alignment	Δh1	0	±1.0	

Fig 5. (φ13)

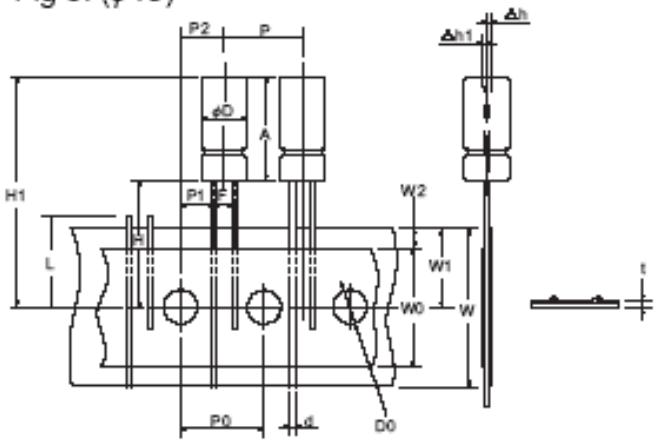
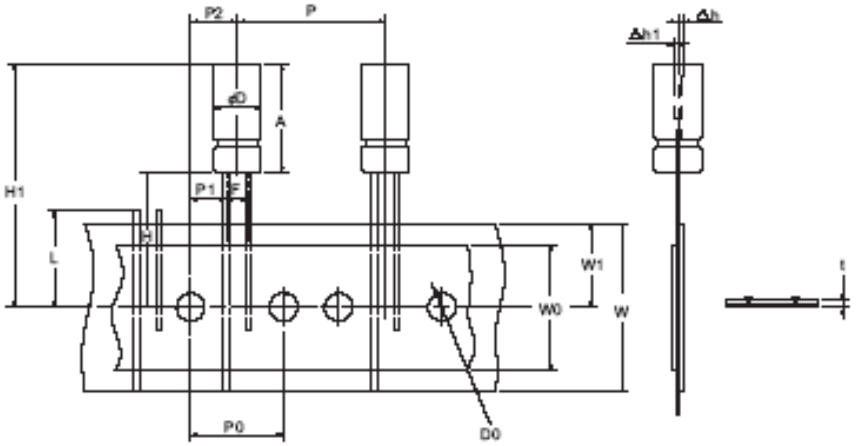


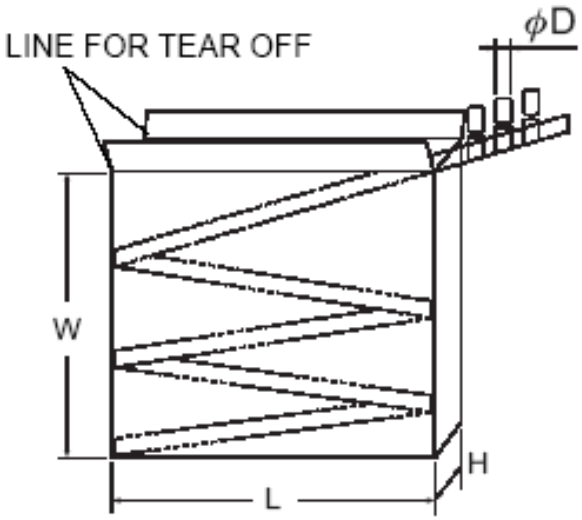
Fig 6. (φ16~18)



PACKING (SYMBOL : P)

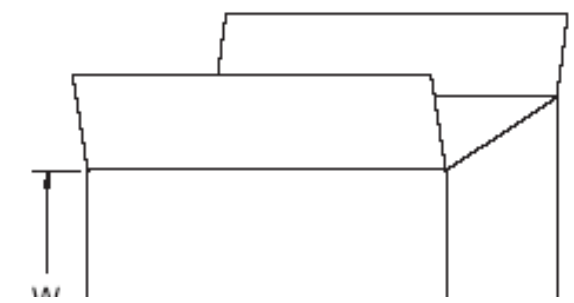
Available for various automatic equipment. Choosing the ordinal the polarity of capacitor's lead depends on customer's request.

INNER BOX :

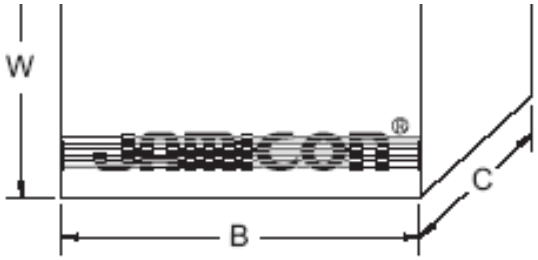


φD(mm)	W±5(mm)	L±5(mm)	H±5(mm)	Quantity(Pcs)
4	175	335	45	2,000
5	235	335	50	2,000
6.3	280	335	50	2,000
8	235	335	50	1,000
10(L≦16)	295	320	50	800
10(L≦20)	295	320	55	800
12.5(L≦20)	295	320	55	500
12.5(L≦25)	295	320	60	500
12.5(L≦30)	295	320	70	500
16(L≦25)	295	320	60	300
16(L≦31.5)	295	320	70	300
16(L≦35.5)	300	320	70	300
18(L≦35.5)	300	320	70	243

PACKING CARTON :

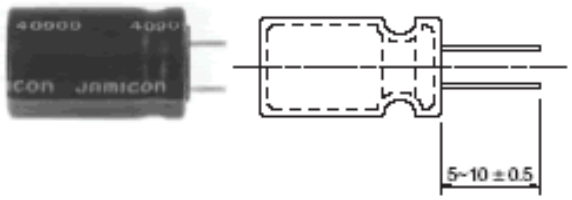
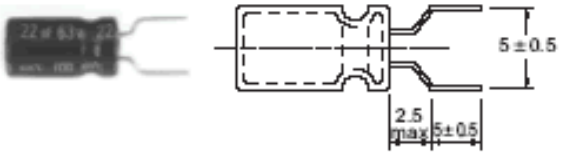
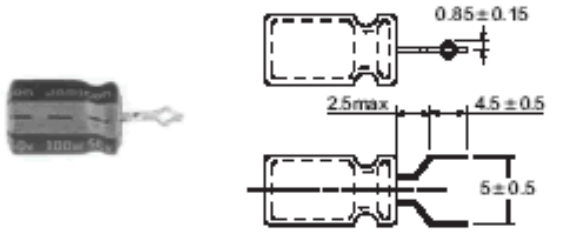
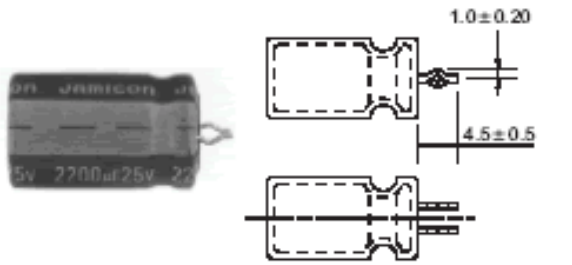


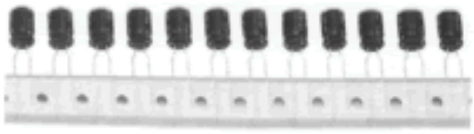
φD(mm)	A±5(mm)	B±5(mm)	C±5(mm)	Inner Box	Quantity(Pcs)
4	240	355	185	5	10,000
5	270	355	250	5	10,000
6.3	270	355	300	5	10,000
8	270	355	250	5	5,000
10(L≦16)	290	345	320	5	4,000
10(L≦20)	315	345	320	5	4,000
12.5(L≦20)	315	345	320	4	2,000
12.5(L≦25)	340	345	320	4	2,000



12.5(L≦20)	315	345	320	4	2,000
12.5(L≦25)	340	345	320	4	2,000
12.5(L≦30)	370	345	320	4	2,000
16(L≦25)	340	345	320	4	1,200
16(L≦31.5)	370	345	320	4	1,200
16(L≦35.5)	385	345	320	4	1,200
18(L≦35.5)	385	345	320	4	972

Lead Style & taping

Iten List		Code	Lead Diameter (mm)	Case Size DxL(mm)	Range	Dimensions
Lead Style	Lead Cut	C	0.5~0.8	5 x 11 ≀ 18 x 40	φ5~φ18	
	Lead Forming Cut	F	0.5~0.6	5 x 11 ≀ 8 x 11.5	φ5~φ8	
	Snap-in	Y	0.5~0.8	5 x 11 ≀ 18 x 40	φ5~φ8	
					φ10~φ18	
						φ4~ φ8 : See Fig 1. (page 8)

Lead Taping	P	0.45~0.8	4 x 5 ~ 18 x35.5	≦ φ18	φ4~ φ8 : See Fig 1. (page 8)  φ10 : See Fig 4. (page 9)