

承認書

SPECIFICATION

Customer : 恩企

Part Name: E-CAP

SPEC : LJ Series

Part NO. : ALL

Date : 2018-7-2

CUSTOMER SIGN		

TOPAZCON	
DRAWING	RATIFY
黃峰	陳慶

LJ Series

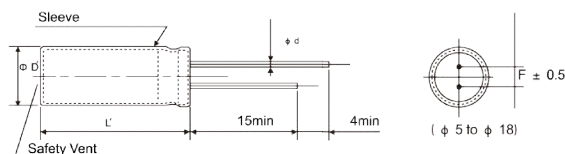
- High performance, high reliability
- Low impedance, high ripple current, long life
- Life time: +105 °C 4,000 to 10,000 hours
- RoHS Compliant



SPECIFICATIONS

Items		Characteristics										
Category	-40 to +105 ℃											
Temperature Range	-40 to +105 ℃											
Rated Voltage Range	6.3 to 100Vdc											
Capacitance Tolerance	± 20%(M) (at20 ℃ 120Hz)											
Leakage Current	1 ≤ 0.01CV or 3 μ A , whichever is greater Where, I:Max.leakage curent(μ A), C:Nominal capacitance (μ F), V:Rated voltage(V) (at 20 ℃ ,after 2minutes)											
Dissipation Factor (tan δ)	Rated voltage(Vdc)	6.3	10	16	25	35	50	63	80	100		
	tan δ (Max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.08		
	When nominal capacitance exceeds 1,000 μ F , add 0.02 to the value above for each 1,000 μ F increase (at20 ℃ 120Hz)											
Low Temperature Characteristics (Max.Impedance Ratio)	Rate Voltage(Vdc)	6.3	10	16	25	35	50	63	80	100		
	ZI-25 ℃ /ZI(+20 ℃)	4	3	2								(at 120Hz)
	ZI-40 ℃ /ZI(+20 ℃)	8	6	4	3							
Endurance	The following specification shall be satisfied when the capacitors are restored to 20 ℃ after subjected to DC voltage with the rated ripple current is applied for the specified period of time at 105 ℃											
	Capacitance Change	≤ ± 20% of the initial value(6.3v ~ 10v ≤ ± 30%)					Case Dia		Life time(hours)			
	D.F. (tan δ)	≤ 200% of the initial specified value					Φ D ≤ 6.3		4.000	5.000		
	Leakage Current	≤ The initial specified value					Φ D=8&10		6.000	7.000		
							Φ D ≥ 12.5		8.000	10.000		
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20 ℃ after exposing them for 1,000 hours at 105 ℃ without voltage applied											
	Capacitance Change	≤ ± 20% of the initial value (6.3v ~ 10v ≤ ± 30%)										
	D.F. (tan δ)	≤ 200% of the initial specified value										
	Leakage Current	≤ 200% The initial specified value										

DIMENSIONS[mm]



ΦD	5	6.3	8	10	12.5	16	18
Φd	0.5	0.5	0.5	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
$\Phi D'$	$\Phi D+0.5\text{max}$						
L'	L+2max						

RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

Cap(μF)	120	1k	10k	100k
Cap < 220	0.40	0.76	0.90	1.00
220 ≤ Cap < 680	0.50	0.85	0.94	1.00
680 ≤ Cap < 2200	0.60	0.87	0.95	1.00
2200 ≤ Cap < 4700	0.75	0.90	0.95	1.00
Cap ≤ 4700	0.85	0.96	0.99	1.00

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5 °C rise, When long life performance is required in actual use, the rms ripple current has to be reduced

LJ Series

● STANDARD RATINGS

(Impedance: at 20 °C 100kHz/ Q max, Ripple current: mArms/105 °C 100kHz)

WV [Vdc]	Cap [μ F]	Case Size φ D × L [mm]	tan δ	Impedance [Ω max]	Ripple current [mArms]
6.3(0.1)	150	5 × 11 6.3 × 9	0.22	0.57 0.74	200 180
	330	6.3 × 11 8 × 9	0.22	0.21 0.27	350 310
	680	8 × 12 10 × 9	0.22	0.13 0.17	660 590
	820	10 × 12	0.22	0.080	870
	1000	8 × 16	0.22	0.086	850
	1200	8 × 20	0.22	0.070	1050
	1200	10 × 16	0.22	0.060	1230
	1500	10 × 20	0.22	0.046	1400
	1800	12.5 × 16	0.22	0.049	1450
	2200	10 × 20	0.24	0.042	1650
	2700	10 × 30	0.24	0.030	1920
	2700	16 × 16	0.24	0.041	1950
	3300	12.5 × 20	0.26	0.035	1910
	3900	12.5 × 25	0.26	0.026	2230
	3900	18 × 16	0.26	0.043	2210
	4700	12.5 × 30	0.28	0.024	2650
	5600	12.5 × 35	0.30	0.020	2880
	5600	16 × 20	0.30	0.027	2530
	6800	12.5 × 40	0.32	0.017	3350
	6800	16 × 25	0.32	0.020	2930
	6800	18 × 20	0.32	0.026	2860
	6800	16 × 31.5	0.36	0.017	3450
	10000	16 × 35.5	0.40	0.015	3610
	10000	18 × 25	0.40	0.019	3140
	12000	16 × 40	0.44	0.013	4100
	12000	18 × 31.5	0.44	0.015	4170
	15000	18 × 35.5	0.50	0.014	4220
10(1A)	18000	18 × 40	0.56	0.012	4300
	100	5 × 11 6.3 × 9	0.19	0.57 0.74	200 180
	220	6.3 × 11 8 × 9	0.19	0.21 0.27	350 310
	470	8 × 11.5 10 × 9	0.19	0.13 0.17	660 590
	680	8 × 16	0.19	0.088	850
	680	10 × 12.5	0.19	0.080	870
	1000	8 × 20	0.19	0.069	1050
	1000	10 × 18	0.19	0.060	1230
	1200	10 × 20	0.19	0.046	1400
	1500	10 × 25	0.19	0.042	1650
	1500	12.5 × 16	0.19	0.049	1450
	2200	10 × 30	0.19	0.030	1920
	2200	12.5 × 20	0.21	0.035	1910
	2200	16 × 16	0.21	0.041	1950
	2700	18 × 16	0.21	0.043	2210
	3300	12.5 × 25	0.23	0.026	2230
	3900	12.5 × 30	0.23	0.024	2650
	3900	16 × 20	0.23	0.027	2530
	4700	12.5 × 35	0.25	0.020	2880
	5600	12.5 × 40	0.27	0.017	3350
	5600	16 × 25	0.27	0.021	2930
	5600	18 × 20	0.27	0.026	2860
	6800	16 × 31.5	0.29	0.017	3450
	6800	18 × 25	0.29	0.019	3140
	8200	16 × 35.5	0.33	0.015	3610
	8200	18 × 31.5	0.33	0.015	4170
	10000	16 × 40	0.37	0.013	4100
	10000	18 × 35.5	0.37	0.014	4220
	12000	18 × 40	0.41	0.012	4300

WV [Vdc]	Cap [μ F]	Case Size φ D × L [mm]	tan δ	Impedance [Ω max]	Ripple current [mArms]
16(1C)	56	5 × 11 6.3 × 9	0.16	0.57 0.74	200 180
	120	6.3 × 11 8 × 9	0.16	0.21 0.27	350 310
	330	8 × 11.5 10 × 9	0.16	0.13 0.17	660 590
	470	8 × 16	0.16	0.087	850
	470	10 × 12.5	0.16	0.080	870
	680	8 × 20	0.16	0.069	1050
	880	10 × 16	0.16	0.060	1230
	1000	10 × 20	0.16	0.046	1400
	1000	12.5 × 16	0.16	0.049	1450
	1200	10 × 25	0.16	0.042	1650
	1500	10 × 30	0.16	0.031	1920
	1500	12.5 × 20	0.16	0.035	1910
	1500	16 × 16	0.16	0.041	1950
	2200	12.5 × 25	0.18	0.027	2230
	2200	18 × 16	0.18	0.043	2210
	2700	12.5 × 30	0.18	0.024	2650
	2700	16 × 20	0.18	0.027	2530
	3300	12.5 × 35	0.20	0.020	2880
	3900	12.5 × 40	0.20	0.017	3350
	3900	18 × 20	0.20	0.026	2860
	3900	16 × 25	0.20	0.021	2930
	4700	16 × 31.5	0.22	0.017	3450
	4700	18 × 25	0.22	0.019	3140
	5600	18 × 35.5	0.24	0.015	3610
	5600	18 × 31.5	0.24	0.015	4170
	6800	16 × 40	0.26	0.013	4100
	8200	18 × 35.5	0.30	0.014	4220
25(1E)	10000	18 × 40	0.34	0.012	4300
	47	5 × 11 6.3 × 8	0.14	0.57 0.74	200 160
	100	6.3 × 11 8 × 9	0.14	0.21 0.27	350 310
	220	8 × 12 10 × 9	0.14	0.13 0.17	660 590
	330	8 × 18	0.14	0.088	850
	330	10 × 12.5	0.14	0.080	870
	470	8 × 20	0.14	0.069	1050
	470	10 × 16	0.14	0.060	1230
	680	10 × 20	0.14	0.046	1400
	680	12.5 × 16	0.14	0.049	1450
	820	10 × 25	0.14	0.042	1650
	1000	10 × 30	0.14	0.030	1920
	1000	12.5 × 20	0.14	0.035	1910
	1000	16 × 16	0.14	0.041	1950
	1200	18 × 16	0.14	0.043	2210
	1500	12.5 × 25	0.14	0.026	2230
	1800	12.5 × 30	0.14	0.024	2650
	1800	16 × 20	0.14	0.027	2530
	2200	12.5 × 35	0.16	0.020	2880
	2200	18 × 20	0.16	0.026	2860
	2700	12.5 × 40	0.16	0.017	3350
	2700	16 × 25	0.16	0.021	2930
	3300	16 × 31.5	0.18	0.017	3450
	3300	18 × 25	0.18	0.019	3140
	3900	16 × 35.5	0.18	0.015	3610
	3900	18 × 31.5	0.18	0.015	4170
	4700	16 × 40	0.20	0.013	4100
	4700	18 × 35.6	0.20	0.014	4220
	5600	18 × 40	0.22	0.012	4300

LJ Series

● STANDARD RATINGS

(Impedance: at 20 °C 100kHz/ Ω max, Ripple current: mArms/105 °C 100kHz)

WV [Vdc]	Cap (μ F)	Case Size Φ D $\times$ L (mm)	tan δ	Impedance (Ω max)	Ripple current (mArms)
35(1V)	33	5 $\times$ 11 6.3 $\times$ 9	0.12	0.57 0.74	200 180
	56	6.3 $\times$ 11 8 $\times$ 9	0.12	0.21 0.27	360 310
	150	8 $\times$ 11.5 10 $\times$ 9	0.12	0.13 0.17	660 580
	220	8 $\times$ 16	0.12	0.086	850
	220	10 $\times$ 12.5	0.12	0.080	870
	270	8 $\times$ 20	0.12	0.069	1050
	330	10 $\times$ 18	0.12	0.060	1230
	470	10 $\times$ 20	0.12	0.046	1400
	470	12.5 $\times$ 16	0.12	0.049	1450
	560	10 $\times$ 25	0.12	0.042	1650
	680	10 $\times$ 30	0.12	0.030	1920
	680	12.5 $\times$ 20	0.12	0.036	1910
	680	16 $\times$ 16	0.12	0.041	1950
	1000	12.5 $\times$ 25	0.12	0.026	2230
	1000	18 $\times$ 16	0.12	0.043	2210
	1200	12.5 $\times$ 30	0.12	0.024	2650
	1200	18 $\times$ 20	0.12	0.027	2530
	1500	12.5 $\times$ 35	0.12	0.020	2880
	1800	12.5 $\times$ 40	0.12	0.017	3350
	1800	18 $\times$ 25	0.12	0.021	2930
	1800	18 $\times$ 20	0.12	0.026	2860
	2200	16 $\times$ 31.5	0.14	0.017	3450
	2200	18 $\times$ 25	0.14	0.019	3140
	2700	16 $\times$ 35.5	0.14	0.015	3610
	2700	18 $\times$ 31.5	0.14	0.015	4170
50(1H)	3300	16 $\times$ 40	0.16	0.012	4100
	3300	18 $\times$ 35.5	0.16	0.014	4220
	3900	18 $\times$ 40	0.16	0.011	4300
	22	5 $\times$ 12 6.3 $\times$ 9	0.10	0.68 0.89	190 170
	56	6.3 $\times$ 11 8 $\times$ 9	0.10	0.30 0.39	300 270
	100	8 $\times$ 11.5 10 $\times$ 9	0.10	0.17 0.22	560 500
	120	8 $\times$ 16	0.10	0.12	740
	150	10 $\times$ 12.5	0.10	0.12	760
	180	8 $\times$ 20	0.10	0.090	910
	220	10 $\times$ 16	0.10	0.084	1050
	270	10 $\times$ 20	0.10	0.058	1230
	270	12.5 $\times$ 16	0.10	0.061	1260
	330	10 $\times$ 25	0.10	0.055	1440
	470	10 $\times$ 30	0.10	0.043	1700
	470	12.5 $\times$ 20	0.10	0.045	1660
	470	16 $\times$ 16	0.10	0.055	1690
	560	12.5 $\times$ 25	0.10	0.034	1960
	560	18 $\times$ 16	0.10	0.054	1930
	680	12.5 $\times$ 30	0.10	0.030	2310
	820	12.5 $\times$ 35	0.10	0.025	2510
	820	16 $\times$ 20	0.10	0.034	2210
	1000	12.5 $\times$ 40	0.10	0.021	2920
	1000	18 $\times$ 25	0.10	0.025	2560
	1000	18 $\times$ 20	0.10	0.036	2490
	1200	16 $\times$ 31.5	0.10	0.021	3010
	1200	18 $\times$ 25	0.10	0.028	2740
	1500	16 $\times$ 35.5	0.10	0.019	3150
	1800	16 $\times$ 40	0.10	0.016	3710
	1800	18 $\times$ 31.5	0.10	0.021	3640
	2200	18 $\times$ 35.5	0.12	0.017	3800
	2700	18 $\times$ 40	0.12	0.014	3800

WV [Vdc]	Cap (μ F)	Case Size Φ D $\times$ L (mm)	tan δ	Impedance (Ω max)	Ripple current (mArms)
63(1J)	15	5 $\times$ 11 6.3 $\times$ 9	0.09	0.88 1.15	165 145
	33	6.3 $\times$ 12 8 $\times$ 9	0.09	0.35 0.48	265 235
	56	8 $\times$ 11.5 10 $\times$ 9	0.09	0.22 0.29	500 440
	82	8 $\times$ 16	0.09	0.16	665
	82	10 $\times$ 12.5	0.09	0.11	690
	120	8 $\times$ 20	0.09	0.12	820
	120	10 $\times$ 16	0.09	0.076	950
	180	10 $\times$ 20	0.09	0.056	1150
	180	12.5 $\times$ 16	0.09	0.072	1150
	220	10 $\times$ 25	0.09	0.046	1350
	330	12.5 $\times$ 20	0.09	0.041	1500
	390	12.5 $\times$ 25	0.09	0.031	1900
	470	12.5 $\times$ 30	0.09	0.028	2300
	470	16 $\times$ 20	0.09	0.032	2000
	560	12.5 $\times$ 35	0.09	0.024	2500
	680	12.5 $\times$ 40	0.09	0.021	2800
	680	18 $\times$ 25	0.09	0.025	2600
	680	18 $\times$ 20	0.09	0.030	2500
	820	16 $\times$ 31.5	0.09	0.021	2850
	820	18 $\times$ 25	0.09	0.024	2800
	1000	16 $\times$ 35.5	0.09	0.019	2900
	1200	16 $\times$ 40	0.09	0.018	3400
	1200	18 $\times$ 31.5	0.09	0.020	3300
	1500	18 $\times$ 35.5	0.09	0.018	3400
	1800	18 $\times$ 40	0.09	0.017	3500
80(1K)	68	10 $\times$ 12.5	0.08	0.17	480
	100	10 $\times$ 16	0.08	0.11	600
	120	10 $\times$ 20	0.08	0.084	800
	150	10 $\times$ 25	0.08	0.069	900
	150	12.5 $\times$ 16	0.08	0.11	750
	220	12.5 $\times$ 20	0.08	0.062	1100
	330	12.5 $\times$ 25	0.08	0.047	1250
	330	16 $\times$ 20	0.08	0.048	1350
	390	12.5 $\times$ 30	0.08	0.042	1500
	470	12.5 $\times$ 35	0.08	0.036	1650
	470	16 $\times$ 25	0.08	0.038	1700
	470	18 $\times$ 20	0.08	0.045	1500
	560	12.6 $\times$ 40	0.08	0.032	1800
	680	16 $\times$ 31.5	0.08	0.032	1850
	680	18 $\times$ 25	0.08	0.036	1750
	820	16 $\times$ 35.5	0.08	0.029	2000
	820	18 $\times$ 31.5	0.08	0.030	1900
	1000	16 $\times$ 40	0.08	0.027	2200
	1000	18 $\times$ 35.5	0.08	0.027	2200
	1200	18 $\times$ 40	0.08	0.026	2700

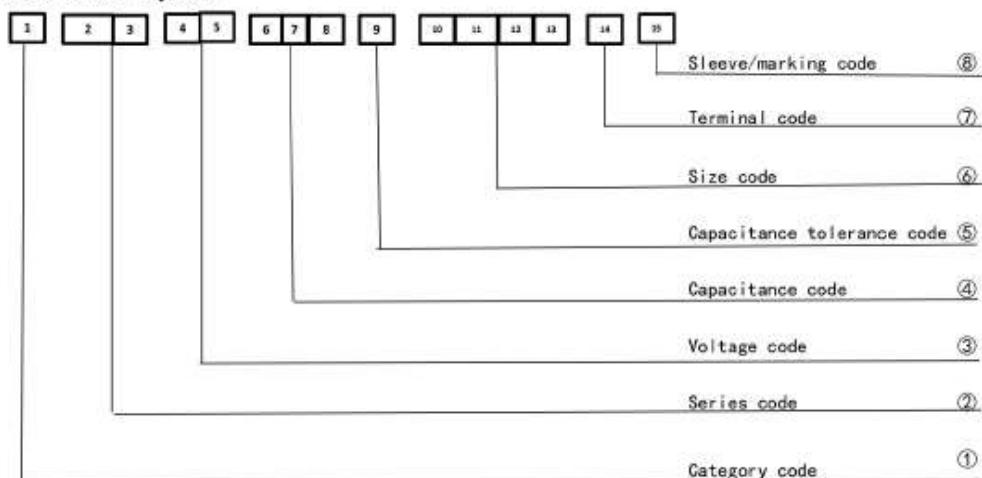
LJ Series

STANDARD RATINGS

(Impedance: at 20 °C 100kHz/ Ω max, Ripple current; mArms/105 °C 100kHz)

WV (Vad)	Cap (μ F)	Case Size φ D × L(mm)	tan δ	Impedance (Ω max)	Ripple current (mArms)
100(2A)	6.8	5 × 11 6.3 × 9	0.08	1.4 1.9	125 110
	15	6.3 × 12 8 × 9	0.08	0.57 0.75	205 180
	27	8 × 11.5 10 × 9	0.08	0.38 0.45	355 310
	39	8 × 16	0.08	0.25	450
	47	10 × 12.5	0.08	0.17	480
	56	8 × 20	0.08	0.19	565
	68	10 × 16	0.08	0.11	600
	82	10 × 20	0.08	0.084	800
	100	12.5 × 16	0.08	0.081	750
	120	10 × 25	0.08	0.069	900
	150	12.5 × 20	0.08	0.062	1100
	220	12.5 × 25	0.08	0.047	1250
	220	16 × 20	0.08	0.048	1350
	270	12.5 × 30	0.08	0.042	1500
	330	12.5 × 35	0.08	0.036	1650
	330	16 × 25	0.08	0.038	1700
	330	18 × 20	0.08	0.045	1500
	390	12.5 × 40	0.08	0.032	1800
	470	16 × 31.5	0.08	0.032	1850
	470	18 × 25	0.08	0.036	1750
	560	18 × 35	0.08	0.029	2000
	560	18 × 31.5	0.08	0.030	1900
	680	18 × 40	0.08	0.027	2200
	680	18 × 35.5	0.08	0.027	2200
	820	18 × 40	0.08	0.026	2700

Part Number System



②Series code

Series name	Code	
	2	3
SM	S	M
SS	S	S
NP	N	P
LL	L	L
RD	R	D
RE	R	E
RT	R	T
RF	R	F
RG	R	G
RJ	R	J
RR	R	R
LF	L	F
LJ	L	J
LR	L	R
LG	L	G
RS	R	S
RN	R	N
RV	R	V
LH	L	H
TE	T	E
TF	T	F
TG	T	G
LP	L	P
LT	L	T
LS	L	S
LV	L	V

③Voltage code

WV (Vdc)	Code	
	4	5
4	0	G
6.3	0	J
10	1	A
16	1	C
25	1	E
35	1	V
40	1	G
50	1	H
55	1	J
63	1	J
70	1	L
80	1	K
100	2	A
120	2	B
140	2	L
160	2	C
180	2	Q
200	2	D
220	2	N
250	2	E
300	2	S
315	2	F
350	2	V
385	2	P
400	2	G
420	2	T
450	2	W
500	2	H
550	2	J
600	2	K

④Capacitance code

Cap (uF)	Code		
	6	7	8
0.1	R	1	0
0.22	R	2	2
0.33	R	3	3
0.47	R	4	7
1	1	R	0
2.2	2	R	2
3.3	3	R	3
4.7	4	R	7
6.8	6	R	8
10	1	0	0
22	2	2	0
33	3	3	0
47	4	7	0
100	1	0	1
220	2	2	1
330	3	3	1
470	4	7	1
560	5	6	1
1000	1	0	2
1500	1	5	2
2200	2	2	2
3300	3	3	2
4700	4	7	2
6800	6	8	2
10000	1	0	3
15000	1	5	3
22000	2	2	3
33000	3	3	3
56000	5	6	3
68000	6	8	3

⑤Capacitance tolerance code

Tol.	Code
(%)	?
-5~+5	J
-10~+10	K
-20~+20	M
-5~+20	F
-10~+20	V
-10~+30	Q
-20~+0	S
-0~+20	A

⑥Size code

Φ D × L (mm)	Code			
	10	11	12	13
3×5	0	3	0	5
4×5	0	4	0	5
5×5	0	5	0	5
6.3×5	0	6	0	5
4×7	0	4	0	7
5×7	0	5	0	7
6.3×7	0	6	0	7
8×7	0	8	0	7
5×11	0	5	1	1
6.3×11	0	6	1	1
8×12	0	8	1	2
8×16	0	8	1	6
10×12	1	0	1	2
10×16	1	0	1	6
8×20	0	8	2	0
10×20	1	0	2	0
13×20	1	3	2	0
13×25	1	3	2	5
16×25	1	6	2	5
16×32	1	6	3	2
16×36	1	6	3	6
18×32	1	8	3	2
18×36	1	8	3	6
18×40	1	8	4	0

⑧Sleeve/Marking code

Sleeve/Marking	Code 15
Black	B
Yellow	Y
Ink Green	I
Pes Green	P
Orange	O
Hyacinth	H

⑦Terminal code

Specification	Code 14
Bulk packing	T1
Φ 4-8 Taping	T2
	T3
Φ 10-18 Taping	T4
Lead Cut	F
	C
	R
	L
	M
	S
	B
	K

⑨Category

Type	Code 1
Electrolytic Capacitor	E
Conductive Polymer super-capacitor	P
	S

Lead Forming

Taping Specifications

Fig.1 Code:T1

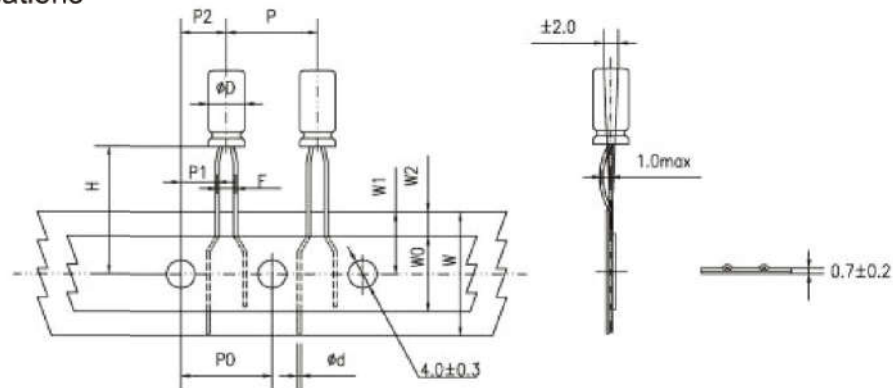


Fig.2 Code:T2

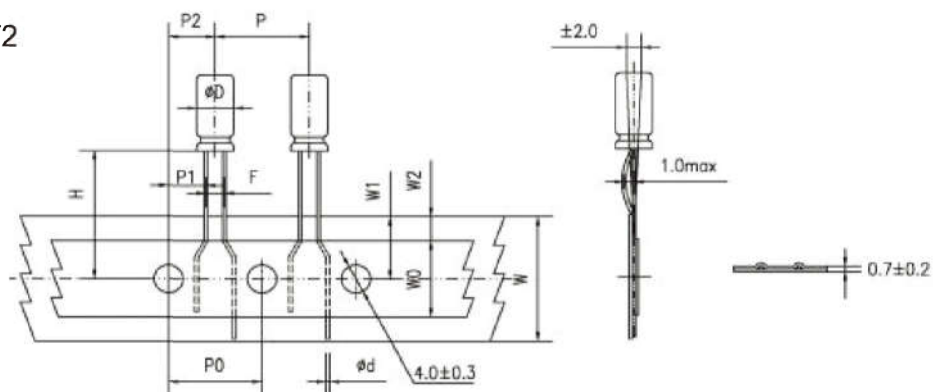


Fig.3 Code:T2

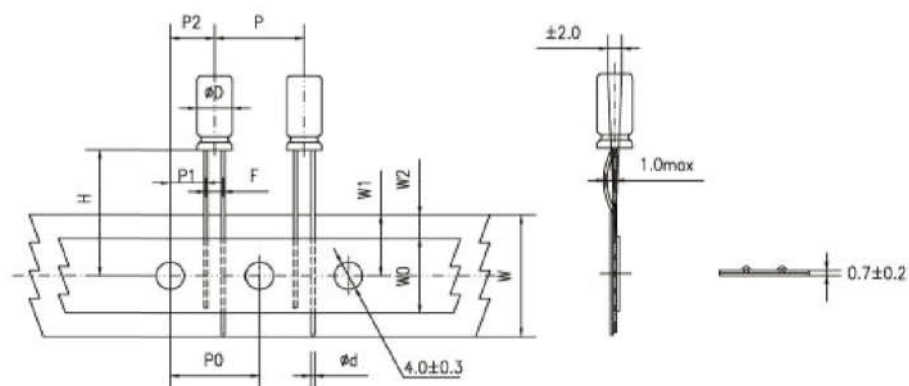
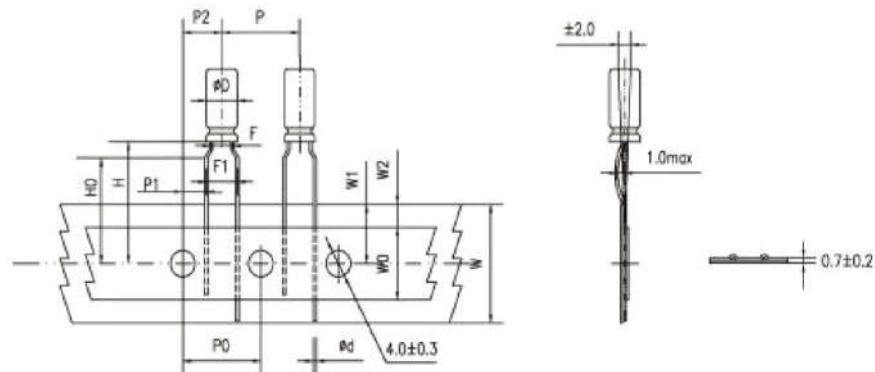


Fig.4 Code:T3



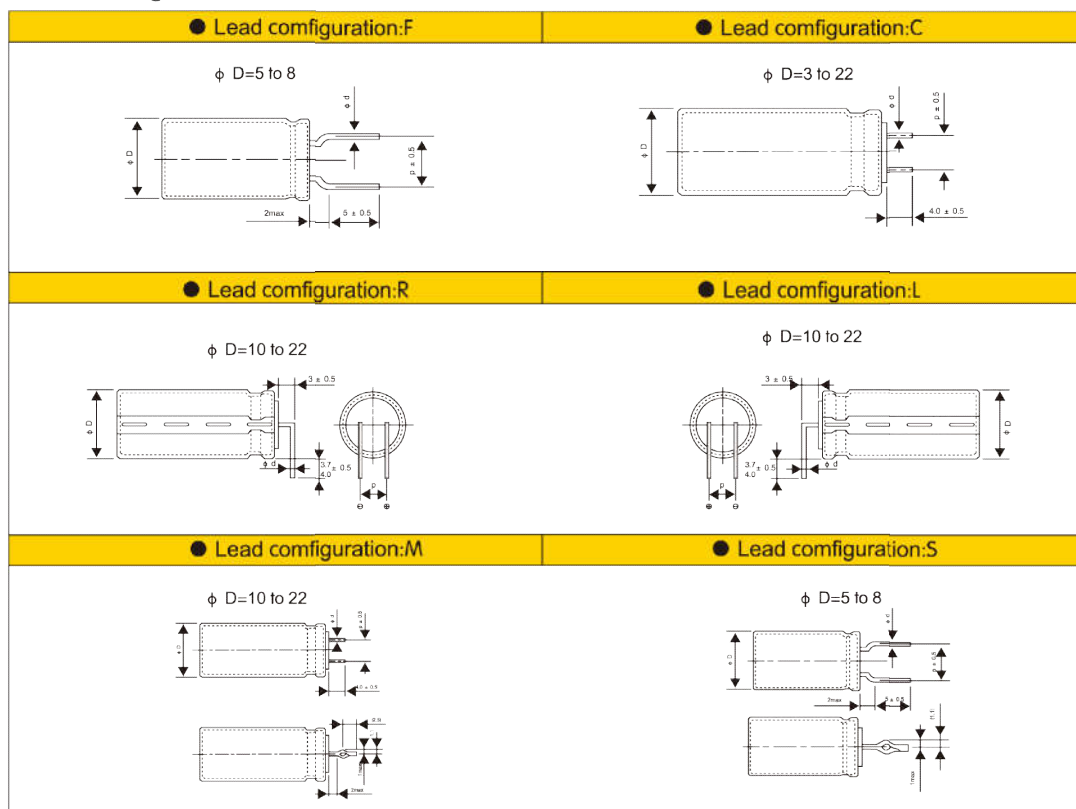
Specification Fig.1 & Fig.2 & Fig.3

Items	Symbol	CASE SIZE											Tolerance	
		4 × 5 4 × 7		5 × 5 5 × 7		5x11		6.3x5	6.3x7 6.3x9	6.3x11 6.3x12	8x5/7 8x9/11 8x11.5 8x12	8x16 8x20		10x9/12 10x12.5 10x13/16 10x20/25
Pin Code		T ₁	T ₂	T ₁	T ₂	T ₁		T ₂	T ₂	T ₂	T ₂	T ₂	T ₂	
Lead wire diameter	φd	0.45		0.45		0.5		0.45	0.5	0.5	0.45/0.5	0.6	0.6	± 0.05
Pitch of body	P	12.7		12.7		12.7		12.7	12.7	12.7	12.7	12.7	12.7	± 1.0
Feed hole pitch	PO	12.7		12.7		12.7		12.7	12.7	12.7	12.7	12.7	12.7	± 0.2
Hole center to lead distance	P1	5.1	5.6	5.1	5.35	5.1	5.35	5.1	5.1	5.1	4.6	4.6	3.85	± 0.7
Feed hole center to body center distance	P2	6.35		6.35		6.35		6.35	6.35	6.35	6.35	6.35	6.35	± 1.0
Lead to lead distance	F	2.5	1.5	2.5	2.0	2.5	2.0	2.5	2.5	2.5	3.5	3.5	5.0	± 0.5
Height of body from tape center	H	18.5		18.5		18.5		18.5	18.5	18.5	18.5	18.5	18.5	± 0.75
Base tape width	W	18.0		18.0		18.0		18.0	18.0	18.0	18.0	18.0	18.0	± 0.5
Adhesive tape width	WO	11.0		11.0		11.0		11.0	11.0	11.0	11.0	11.0	11.0	min
Hole positron	W1	9.0		9.0		9.0		9.0	9.0	9.0	9.0	9.0	9.0	+0.75 -0.5
Hole down tape position	W2	3.0		3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0	max

Specification Fig.4

Items	Symbol	CASE SIZE									Tolerance
		4 × 5 4 × 7	5 × 5	5 × 7	5 × 11	6.3 × 5	6.3 × 7 6.3 × 9	6.3 × 11 6.3 × 12	8 × 5/7 8 × 9/11 8 × 11.5/12	8 × 16 8 × 20	
Pin Code		T ₃	T ₃	T ₃	T ₃	T ₃	T ₃	T ₃	T ₃	T ₃	
Lead wire diameter	φd	0.45	0.45	0.45	0.5	0.45	0.5	0.5	0.45/0.5	0.6	± 0.05
Pitch of body	P	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	± 1.0
Feed hole pitch	PO	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	± 0.2
Hole center to lead distance	P1	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	± 0.7
Feed hole center to body center distance	P2	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	± 1.0
Lead to lead distance	F	1.5	2.0	2.0	2.0	2.5	2.5	2.5	3.5	3.5	± 0.5
Lead to lead distance	F1	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	+0.8 -0.2
Height of body from tape center	H	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	± 0.75
Lead wire clinch height	HO	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	± 0.5
Base tape width	W	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	± 0.5
Adhesive tape width	WO	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	min
Hole position	W1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	+0.75 -0.5
Hole down tape position	W2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	max

- **Lead Forming & Cut:**

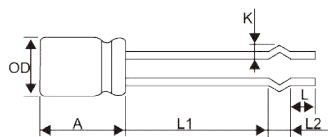


● LEAD SPACING&RECOMMENDED PCB DIMENSIONS

(mm)

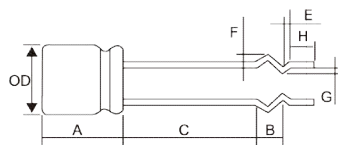
Dimension	ϕD	ϕd	p	PC Board		Lead Configuration
				Hole diameter	Thickness	
5		0.5	5.0	0.8	1.6	F C S
6.3		0.5	5.0	0.8		
8		0.5/0.6	5.0	1.0		
10		0.6	5.0	1.0	1.6	C M R L
12.5		0.6	5.0	1.0		
16		0.8	7.5	1.2		
18		0.8	7.5	1.2		
20		0.8	7.5	1.2		
22		0.8	10.0	1.2		

● Lead configuration:B



ØD	L1	L2	K	A	L
5	17.5–19.5	2.6	1.9	10.0–15.0	3.0–5.0
6.3	17.5–19.5	2.6	1.9	10.0–16.0	
8	12.0–14.0	2.5	1.3	10.0–20.0	
8	13.5–15.5	2.5	1.5		
8	13.0–15.0	3.0	1.5		
8	19.5–21.5	3.0	1.5		
8	21.0–23.0	3.0	1.5		
10	7.5–9.5	2.5	1.7		
10	17.0–19.0	2.5	1.7		
10	10.5–12.5	2.5	1.5		
10	10.0–12.0	3.0	1.5		
10	13.0–15.0	3.0	1.5		
10	18.0–20.0	3.0	1.5		
10	21.0–23.0	3.0	1.5		
	± 1.0	± 0.5	0.3	± 1.0	± 1.0

● Lead configuration:K



ØD	C	B	E	F	G	A	H
8	13.5–15.5	3	1.2	1.8	0.8	10–20	3.0–5.0
10	18.5–20.5	3	1.2	1.8	1	10–25	
10	19.0–21.0	3	1.5	1.4	0.5		
	± 1.0	± 0.5	± 0.3	± 0.3	± 0.3	± 1.0	± 1.0