

# 规格書

## SPECIFICATION

Customer :           深圳市立創電子商務有限公司          

Part Name:                           E-CAP                          

SPEC :                           LF Series                          

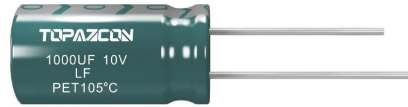
Part NO. :                           ALL                          

Date :                           2021-7-24                          

CUSTOMER SIGN		

TOPAZCON	
DRAWING	RATIFY
李梦如	<i>Cocp</i>

# LF Series

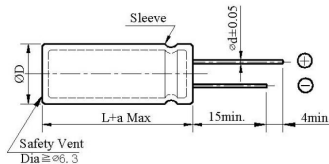


- Low impedance for high frequency.
- Endurance: +105°C 2000-4000 hours.
- Suitable for switching power, UPS, power sources etc.
- RoHS Compliant

## ◆ SPECIFICATIONS

Item	Performance Characteristics																	
Temperature Range	-40 to +105°C																	
Working Voltage Range	6.3 to 100Vdc																	
Capacitance Range	15 to 4700 $\mu$ F																	
Capacitance Tolerance	$\pm 20\%$ (at 20°C and 120Hz)																	
Dissipation Factor (tan $\delta$ )	Rated Voltage (V)	6.3	10	16	25	35	50	63	100									
	Tan $\delta$ (Max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	(at 20°C, 120Hz)								
Low Temperature Characteristics (Max. Impedance Ratio)	Rate voltage (V)	6.3	10	16	25	35	50	63	100	(at 120Hz)								
	Z(-25°C)/Z(+20°C)	4	3	2														
	Z(-40°C)/Z(+20°C)	8	6	4	3													
Leakage Current	I $\leq$ 0.01CV or 3uA Whichever is greater (at 20°C after 2 minutes) Where, I: Max. Leakage current (u A); C: Nominal capacitance (u F); V: Rated voltage (V).																	
Endurance	The following specification shall be satisfied when the capacitor are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for the specified period of time at 105°C.																	
	Capacitance change	$\leq \pm 25\%$ of the initial value								<table border="1"> <thead> <tr> <th>Case Dia</th> <th>Life time (hours)</th> </tr> </thead> <tbody> <tr> <td><math>\leq \phi 6.3</math></td> <td>2000</td> </tr> <tr> <td><math>\phi 8-10</math></td> <td>3000</td> </tr> <tr> <td><math>&gt; \phi 10</math></td> <td>4000</td> </tr> </tbody> </table>		Case Dia	Life time (hours)	$\leq \phi 6.3$	2000	$\phi 8-10$	3000	$> \phi 10$
Case Dia	Life time (hours)																	
$\leq \phi 6.3$	2000																	
$\phi 8-10$	3000																	
$> \phi 10$	4000																	
Shelf Life	The following requirements shall be satisfied when the capacitor are restored to 20°C after exposing them for 1000 hours at 105°C without voltage applied.																	
	Capacitance change	$\leq \pm 25\%$ of the initial value																
	Dissipation	$\leq 200\%$ of the specified value																
	Leakage current	$\leq 200\%$ of the specified value																

## ◆ DIMENSIONS (mm)



$\Phi D$	6.3	8	10	12.5	16	18
$\Phi d$	0.5	0.5	0.6	0.6	0.8	0.8
F	2.5	3.5	3.5	5.0	7.5	7.5
a	+2max					

## ◆ RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current (Hz)

$\mu$ F	Hz			
	120	1K	10K	100K
Cap < 220	0.40	0.75	0.90	1.00
220 $\leq$ Cap < 680	0.60	0.85	0.94	1.00
680 $\leq$ Cap < 2200	0.60	0.87	0.95	1.00
2200 $\leq$ Cap < 4700	0.75	0.90	0.95	1.00
Cap $\geq$ 4700	0.85	0.95	0.98	1.00

# LF Series

◆ STANDARD RATINGS

(Impedance at 20°C 100KHz/Ωmax. Ripple current; mAms/105°C 100KHz)

WV (Vdc)	Cap (uF)	CaSe size ∅ D×L (mm)	Tan δ	Impedance (Ωmax)	Ripple current (mAms)
6.3 (0J)	180	6.3×11	0.22	0.25	340
		8×9	0.22	0.33	300
	220	6.3×11	0.22	0.25	340
		8×9	0.22	0.33	300
	270	6.3×11	0.22	0.25	340
		8×9	0.22	0.33	300
	330	8×11	0.22	0.13	650
		10×9	0.22	0.17	580
	470	8×11	0.22	0.13	650
		10×9	0.22	0.17	580
	560	8×11	0.22	0.13	650
		10×9	0.22	0.17	580
	680	8×11	0.22	0.13	650
		10×9	0.22	0.17	580
	820	10×12	0.22	0.08	870
		10×9	0.22	0.17	580
	1000	10×12	0.22	0.08	870
		10×12	0.22	0.08	870
	1200	10×12	0.22	0.08	870
		8×20	0.22	0.068	1050
	1500	10×16	0.22	0.06	1210
		10×20	0.22	0.045	1400
	1800	10×20	0.24	0.045	1400
		10×25	0.24	0.042	1650
2200	10×20	0.24	0.045	1400	
	12.5×20	0.24	0.035	1900	
2700	10×25	0.26	0.042	1860	
	12.5×20	0.26	0.036	1900	
3900	12.5×20	0.26	0.035	1900	
	12.5×25	0.28	0.030	2130	
10 (1A)	150	6.3×11	0.19	0.25	340
		8×9	0.19	0.33	300
	180	6.3×11	0.19	0.25	340
		8×9	0.19	0.33	300
	220	6.3×11	0.19	0.25	340
		8×9	0.19	0.33	300
	270	8×9	0.19	0.33	300
		10×9	0.19	0.17	580
	330	10×9	0.19	0.17	580
		10×9	0.19	0.17	580
	470	10×9	0.19	0.17	580
		10×9	0.19	0.17	580
	560	10×9	0.19	0.17	580
		10×9	0.19	0.17	580
	680	10×9	0.19	0.17	580
		10×12	0.19	0.08	870
	1000	8×16	0.19	0.087	850
		10×16	0.19	0.06	1210
	1200	10×20	0.19	0.045	1400
		10×20	0.19	0.045	1400
	1500	10×20	0.19	0.045	1400
		10×20	0.19	0.045	1400
	1800	10×20	0.21	0.045	1400
		10×25	0.21	0.042	1650
2200	10×20	0.21	0.045	1400	
	12.5×20	0.21	0.035	1900	
2700	12.5×20	0.23	0.030	2130	
	10×25	0.23	0.030	2130	
16 (1C)	100	8×9	0.16	0.33	300
		120	8×9	0.16	0.33
	150	8×9	0.16	0.33	300
		10×9	0.16	0.33	580
	180	8×9	0.16	0.33	300
		10×9	0.16	0.33	580
	220	8×9	0.16	0.33	300
		10×9	0.16	0.33	580
	270	10×9	0.16	0.17	580
		10×9	0.16	0.17	580
	330	10×9	0.16	0.17	580
		10×9	0.16	0.17	580
	470	10×9	0.16	0.17	580
		10×12	0.16	0.18	870
	560	10×12	0.16	0.08	870
		8×16	0.16	0.087	850
	680	8×16	0.16	0.087	850
		10×12	0.16	0.08	870

WV (Vdc)	Cap (uF)	CaSe size ∅ D×L (mm)	Tan δ	Impedance (Ωmax)	Ripple current (mAms)
16 (1C)	820	10×16	0.16	0.06	1210
		1000	10×16	0.16	0.06
	1200	10×20	0.16	0.045	1400
		1500	10×20	0.16	0.045
	1800	10×25	0.16	0.042	1650
		12.5×20	0.16	0.035	1800
	2200	12.5×20	0.18	0.035	1900
		2700	12.5×20	0.18	0.030
	82	6.3×11	0.14	0.25	340
		8×9	0.14	0.33	300
	100	6.3×11	0.14	0.25	340
		8×9	0.14	0.33	300
120	8×11	0.14	0.13	650	
	10×9	0.14	0.17	580	
150	8×11	0.14	0.13	650	
	10×9	0.14	0.17	580	
180	8×11	0.14	0.13	650	
	10×9	0.14	0.17	580	
220	8×11	0.14	0.17	650	
	10×9	0.14	0.08	580	
270	10×9	0.14	0.17	580	
	10×12	0.14	0.08	870	
330	10×9	0.14	0.087	580	
	10×12	0.14	0.080	870	
470	8×16	0.14	0.060	840	
	10×12	0.14	0.060	870	
560	10×16	0.14	0.045	1210	
	680	10×16	0.14	0.045	1210
820	10×20	0.14	0.045	1400	
	1000	10×20	0.14	0.042	1400
1200	10×20	0.14	0.035	1400	
	1500	10×25	0.14	0.030	1650
1800	12.5×25	0.14	0.25	2130	
	2200	12.5×25	0.16	0.33	2130
35 (1V)	47	6.3×11	0.12	0.25	340
		8×9	0.12	0.33	300
	56	6.3×11	0.12	0.25	340
		8×9	0.12	0.33	300
	68	6.3×11	0.12	0.13	340
		8×9	0.12	0.17	300
	82	8×11	0.12	0.13	650
		10×9	0.12	0.17	580
	100	8×11	0.12	0.13	650
		10×9	0.12	0.17	580
	120	8×11	0.12	0.13	650
		10×9	0.12	0.17	580
	150	8×11	0.12	0.13	650
		10×9	0.12	0.17	580
	180	10×12	0.12	0.08	870
		8×11	0.12	0.13	650
	220	10×9	0.12	0.17	580
		8×16	0.12	0.087	840
	270	10×12	0.12	0.080	870
		10×15	0.12	0.060	1210
	330	8×20	0.12	0.069	1000
		10×12	0.12	0.080	870
	470	10×16	0.12	0.060	1210
		10×16	0.12	0.060	1210
560	10×20	0.12	0.045	1400	
	680	10×20	0.12	0.045	1400
820	10×25	0.12	0.042	1650	
	12.5×20	0.12	0.035	1900	
1000	12.5×20	0.12	0.035	1900	
	12.5×25	0.12	0.030	2130	

# LF Series

◆ STANDARD RATINGS

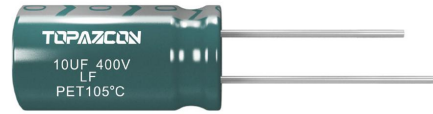
(Impedance. at 20°C 100KHz/Ωmax. Ripple current; mAms/105°C 100KHz)

WV (Vdc)	Cap (uF)	CaSe size ∅ D×L (mm)	Tan δ	Impedance (Ωmax)	Ripple current (mAms)
50 (1H)	33	6.3×11	0.10	0.30	295
		8×9	0.10	0.40	260
	39	6.3×11	0.10	0.30	295
		8×9	0.10	0.40	260
	47	6.3×11	0.10	0.30	295
		8×9	0.10	0.40	260
	56	8×11	0.10	0.17	560
		10×9	0.10	0.23	500
	68	8×11	0.10	0.17	560
		10×9	0.10	0.23	500
	82	8×11	0.10	0.17	560
		10×9	0.10	0.23	500
	100	10×12	0.10	0.12	760
	120	8×16	0.10	0.12	730
		10×12	0.10	0.12	760
	150	10×16	0.10	0.084	1050
	180	8×20	0.10	0.090	1050
		10×16	0.10	0.084	1050
220	10×16	0.10	0.084	1050	
270	10×25	0.10	0.055	1440	
330	12.5×20	0.10	0.045	1660	
470	12.5×25	0.10	0.034	1950	
560	12.5×25	0.10	0.034	1950	

WV (Vdc)	Cap (uF)	CaSe size ∅ D×L (mm)	Tan δ	Impedance (Ωmax)	Ripple current (mAms)
63 (1J)	22	6.3×11	0.09	0.95	120
		8×9	0.09	1.24	100
	27	6.3×11	0.09	0.95	120
		8×9	0.09	1.24	100
	33	6.3×11	0.09	0.95	120
		8×9	0.09	1.24	100
	39	8×11	0.09	0.51	235
		10×9	0.09	0.67	210
	47	8×11	0.09	0.51	235
		10×9	0.09	0.67	210
	56	8×11	0.09	0.51	235
		10×9	0.09	0.67	210
	68	8×11	0.09	0.51	235
		10×9	0.09	0.67	210
	82	10×12	0.09	0.340	315
	100	8×16	0.09	0.350	300
		10×12	0.09	0.340	315
	120	10×16	0.09	0.245	360
150	8×20	0.09	0.265	360	
180	10×20	0.09	0.165	470	
220	10×20	0.09	0.165	470	
270	12.5×20	0.09	0.125	700	
330	12.5×20	0.09	0.125	700	
390	12.5×25	0.09	0.095	930	
100 (2A)	15	6.3×11	0.08	0.95	120
		8×9	0.08	1.24	100
	27	8×11	0.08	0.51	235
		10×9	0.08	0.67	210
	39	8×16	0.08	0.36	300
	47	10×12	0.08	0.34	315
	56	8×20	0.08	0.265	360
	68	10×16	0.08	0.245	360
	82	10×20	0.08	0.165	470
	100	10×20	0.08	0.165	470
	120	12.5×20	0.08	0.125	700
	180	12.5×25	0.08	0.095	930
220	12.5×25	0.08	0.095	930	

# LF Series

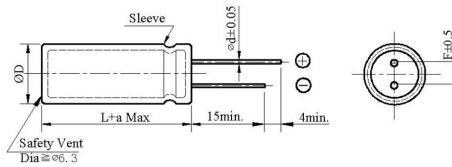
- High frequency, low impedance.
- Life time: +105°C 2000-3000 hours
- RoHS Compliant



## ◆ SPECIFICATIONS

Item	Performance Characteristics							
Temperature Range	-25 to +105°C (160 to 450Vdc)							
Working Voltage Range	160 to 450Vdc							
Capacitance Range	0.47 to 220 $\mu$ F							
Capacitance	$\pm 20\%$ (at 20°C and 120Hz)							
Dissipation Factor (tan $\delta$ )	Rated Voltage (V)	160	200	250	350	400	450	(at 20°C, 120Hz)
	Tan $\delta$ (Max)	0.15	0.15	0.15	0.20	0.20	0.20	
Low Temperature Characteristics (Max. Impedance Ratio)	Rate voltage (V)	160	200	250	350	400	450	( at 120Hz )
	Z (-25°C)/Z (+20°C)	3	5			6		
	Z (-40°C)/Z (+20°C)	4	7			-		
Leakage Current	160 to 450Vdc							(at 20°C after 2 minutes)
	$I \leq 0.02CV$ or 10uA whichever is greater							
Endurance	Where, I: Max. Leakage current (u A); C: Nominal capacitance (u F); V: Rated voltage (V).							
	The following specification shall be satisfied when the capacitor are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for the specified period of time at 105°C.							
	Capacitance change	$\leq \pm 20\%$ of the initial value					Case Dia	Life time (hours)
	Dissipation factor (tan $\delta$ )	$\leq 200\%$ of the specified value					$\leq \Phi 8$	2000
	Leakage current	$\leq$ specified value					$\geq \Phi 10$	3000
Shelf Life	The following specifications shall be satisfied when the capacitor are restored to 20°C after exposing them for 1000 hours at 105°C without voltage applied.							
	Capacitance change	$\leq \pm 20\%$ of the initial value						
	Dissipation factor (tan $\delta$ )	$\leq 200\%$ of the specified value						
	Leakage current	$\leq 200\%$ of the specified value						

## ◆ DIMENSIONS (mm)



ΦD	6.3	8	10	12.5	16	18
Φ d	0.5	0.5	0.6	0.6	0.6	0.8
F	2.5	3.5	3.5	5.0	5.0	7.5
a	+2max					

## ◆ RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current (Hz)

Freq. (Hz) \ CAP (uF)	120	1K	10K	100K
< 18	0.59	0.85	0.97	1.00
18 ≤ CAP < 100	0.62	0.89	0.97	1.00
≥ 100	0.72	0.90	0.98	1.00

# LF Series

◆ STANDARD RATINGS

WV (Vdc)	Cap (uF)	CaSe size ∅ D×L (mm)	Tan δ	Ripple current (mArms/105°C, 100KHz)
160 (2C)	2.2	6.3×11	0.12	54
	3.3	6.3×11	0.12	70
	4.7	8×12	0.12	82
	10	10×12	0.12	142
	22	10×16	0.12	206
	33	10×20	0.12	265
	47	12.5×20	0.12	332
	100	12.5×25	0.12	546
220	16×30	0.12	822	
200 (2D)	1	5×11	0.12	34
	2.2	6.3×11	0.12	52
	3.3	6.3×11	0.12	70
	4.7	8×12	0.12	82
	10	10×12	0.12	144
	22	10×16	0.12	206
		10×20	0.12	215
	33	10×20	0.12	288
		12.5×20	0.12	330
	47	12.5×20	0.12	366
	56	12.5×25	0.12	430
	68	12.5×25	0.12	488
	82	10×30	0.12	518
	100	16×25	0.12	720
	120	16×25	0.12	745
	150	18×25	0.12	845
180	12.5×35	0.12	882	
220	18×30	0.12	960	
250 (2E)	0.47	6.3×11	0.12	35
	1	6.3×11	0.12	40
	2.2	6.3×11	0.12	52
	3.3	8×12	0.12	72
	4.7	8×12	0.12	84
	10	10×12	0.12	144
	22	10×20	0.12	220
	33	12.5×20	0.12	335
	47	12.5×25	0.12	382
	56	12.5×25	0.12	426
	82	16×25	0.12	575
	100	16×30	0.12	740
220	18×35	0.12	1010	
350 (2V)	0.47	6.3×11	0.15	35
	1	6.3×11	0.15	40
	2.2	8×12	0.15	54
	3.3	8×12	0.15	74
	3.3	10×12	0.15	80
	4.7	10×16	0.15	104
	10	10×16	0.15	170
	22	12.5×25	0.15	285
	33	16×25	0.15	330
47	16×30	0.15	480	

WV (Vdc)	Cap (uF)	CaSe size ∅ D×L (mm)	Tan δ	Ripple current (mArms/105°C, 100KHz)
400 (2G)	1	8×12	0.15	40
	2.2	8×12	0.15	62
	3.3	8×12	0.15	85
		10×12	0.15	90
	4.7	10×12	0.15	106
	10	10×16	0.15	175
		10×20	0.15	200
	22	12.5×20	0.15	300
	27	10×30	0.15	385
	33	10×35	0.15	450
		16×20	0.15	440
	39	10×40	0.15	490
	47	12.5×30	0.15	595
		16×25	0.15	584
	56	10×45	0.15	655
		12.5×35	0.15	650
	68	12.5×40	0.15	815
		16×30	0.15	780
	82	12.5×40	0.15	850
		18×30	0.15	835
100	12.5×50	0.15	890	
	18×30	0.15	870	
450 (2W)	1	8×12	0.20	40
	2.2	10×12	0.20	65
	3.3	10×16	0.20	92
	4.7	10×20	0.20	108
	10	12.5×20	0.20	160
	18	10×30	0.20	200
	22	16×20	0.20	305
	27	10×30	0.20	385
	33	10×35	0.20	460
		16×25	0.20	455
	39	10×40	0.20	500
	47	10×45	0.20	635
		12.5×30	0.20	630
		18×25	0.20	620
	56	12.5×35	0.20	705
		18×25	0.20	695
	68	12.5×40	0.20	750
		18×30	0.20	730
	82	12.5×45	0.20	800
		18×30	0.20	770
100	18×35	0.20	860	
120	18×40	0.20	1050	

# PART NUMBER SYSTEM

## ◆ Aluminum Electrolytic Capacitors for Scerw-Mount Terminal TYPE

Category	Series	Rated Voltage	Capacitance	Tolerance	Size	Terminal Forming	Colour	Other or Special Request
①	②	③	④	⑤	⑥	⑦	⑧	⑨
□	□ □	□ □	□ □ □	□	□ □ □ □	□ □	□	□ □ □ □ □ □

### ① Category

Type	Code
Aluminum Electrolytic Capaction	1 E

### ② Series

Series name	Code	
	2	3
CS	C	S
CR	C	R
CX	C	X
CE	C	E
CK	C	K

### ③ Rated Voltage

WV (Vdc)	Code	
	4	5
6.3	0	J
10	1	A
16	1	C
25	1	E
35	1	V
40	1	G
50	1	H
63	1	J
70	1	L
80	1	K
100	2	A
160	2	C
180	2	Q
200	2	D
250	2	E
300	2	S
350	2	V
400	2	G
420	2	T
450	2	W
500	2	H

### ④ Capacitance

Cap (uF)	Code		
	6	7	8
47	4	7	0
56	5	6	0
68	6	8	0
82	8	2	0
100	1	0	1
220	2	2	1
330	3	3	1
470	4	7	1
1000	1	0	2
2200	2	2	2
4700	4	7	2
6800	6	8	2
8200	8	2	2
10000	1	0	3
12000	1	2	3
22000	2	2	3

### ⑤ Capacitance Tolerance

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

### ⑥ Size

ΦD*L (mm)	Code			
	10	11	12	13
51×80	5	1	8	0
51×100	5	1	A	0
51×105	5	1	A	5
51×110	5	1	B	0
51×120	5	1	C	0
64×100	6	4	A	0
64×120	6	4	B	0
76×143	7	6	E	3
76×215	7	6	L	5
90×150	9	0	F	0
90×170	9	0	H	0
90×190	9	0	J	0
90×205	9	0	K	5
90×230	9	0	N	0

### ⑦ Terminal Forming

Terminal Forming	Code
	14~15
M5×10	LS
M5×13	LA
M6×17	LB

### ⑧ Colour

Colour	Code
	16
Black	B
Yellow	Y

### ⑨ Other or Special Request

Special Request	Code
	17~22
ON/OFF& Over Voltage	A
Low Dissipation Factor	D
Low Impedance&ESR	E
Endurance	F
High Temperature	H
Material Limit	M
High Ripple Current	R
Convex Rubber Cover	U
CP wire	W
Special Foot Distance	X
Two pin snap ring	K1
Three pin snap ring	K2
Bottom with screws	N

Lead Forming

Taping Specifications

Fig.1 Code:T1

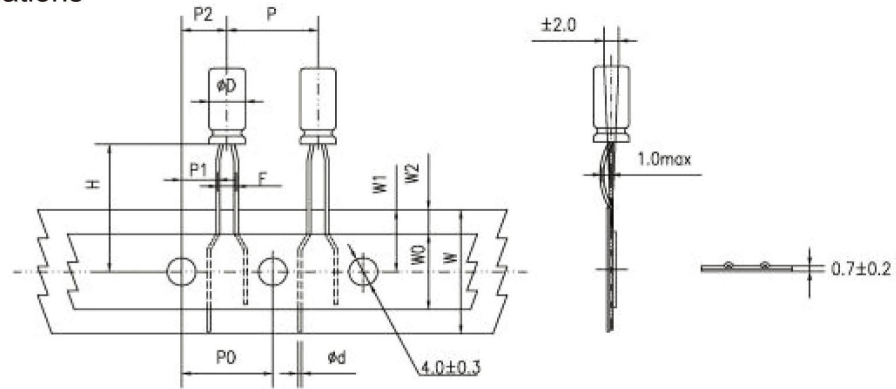


Fig.2 Code:T2

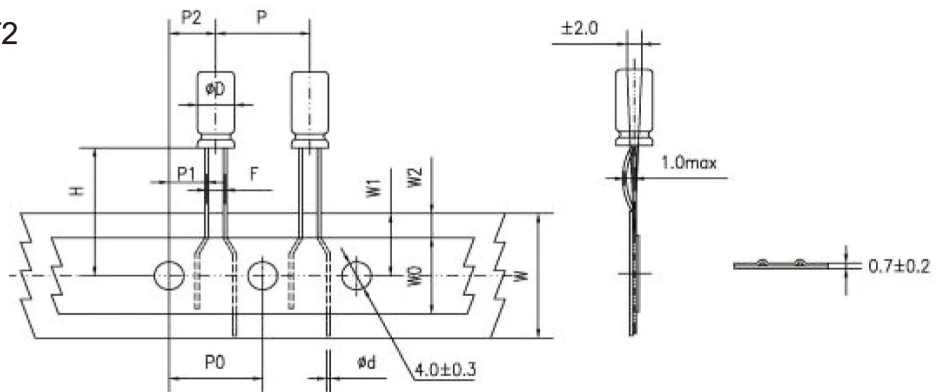


Fig.3 Code:T2

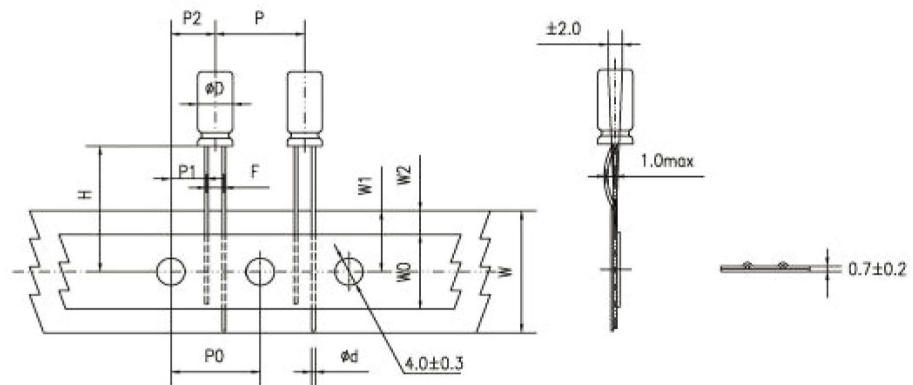
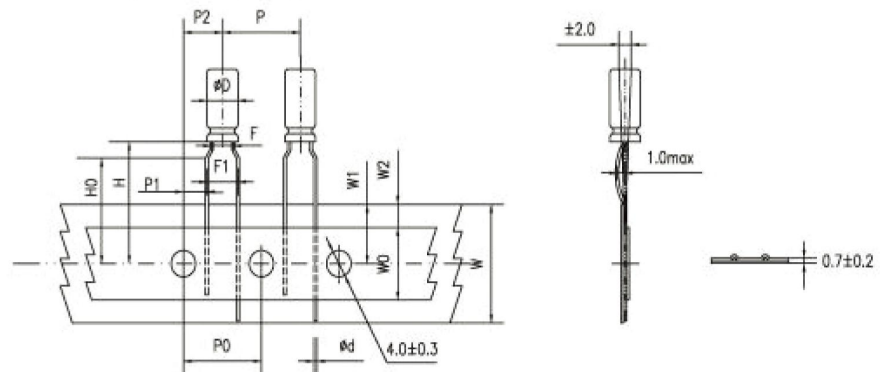


Fig.4 Code:T3





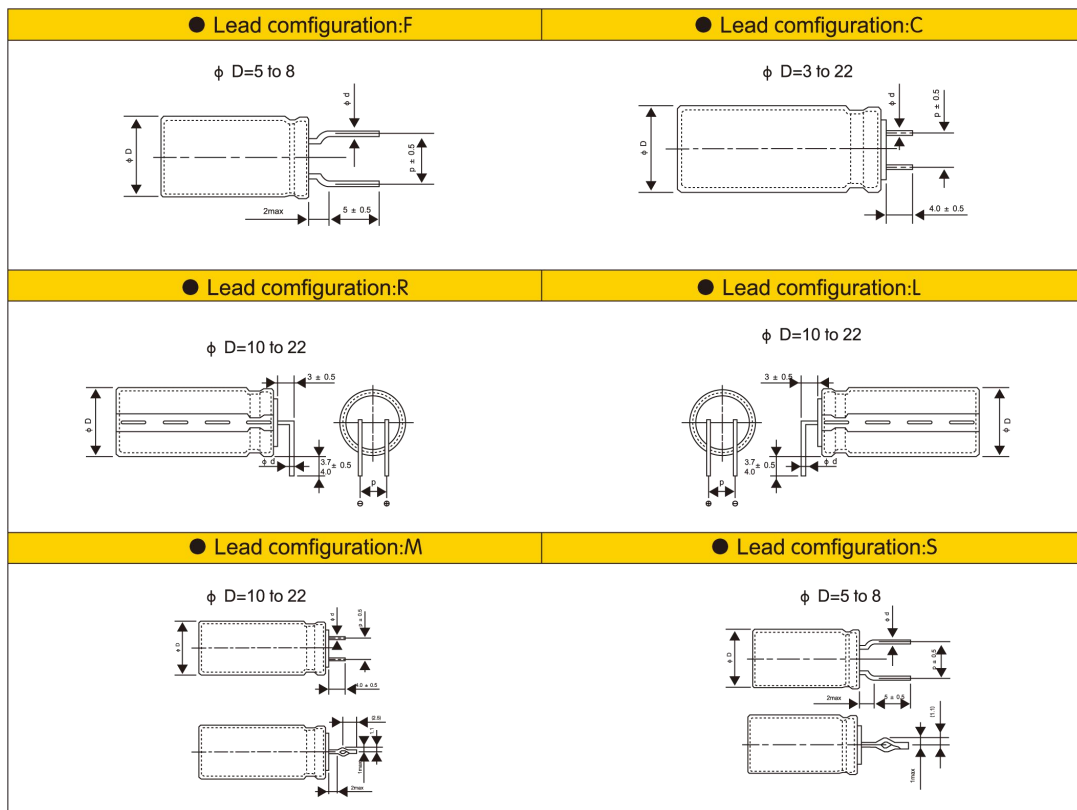
**Specification Fig.1 & Fig.2 & Fig.3**

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 <sub>1</sub>	T <sub>2</sub>	T <sub>1</sub>	T <sub>2</sub>	T <sub>1</sub>		T <sub>2</sub>	T <sub>2</sub>	T <sub>2</sub>	T <sub>2</sub>	T <sub>2</sub>	T <sub>2</sub>		
Lead wire diameter	φd	0.45		0.45		0.5		0.45	0.5	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	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	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 <sub>3</sub>	T <sub>3</sub>	T <sub>3</sub>	T <sub>3</sub>	T <sub>3</sub>	T <sub>3</sub>	T <sub>3</sub>	T <sub>3</sub>	T <sub>3</sub>	
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:

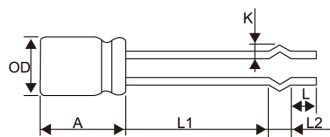


● LEAD SPACING & RECOMMENDED PCB DIMENSIONS

(mm)

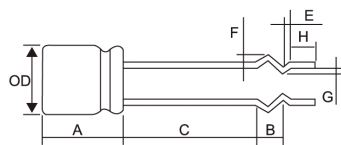
Dimension	φD	φd	p	PC Board		Lead Configuration
				Hole diameter	Thickness	
5		0.5	5.0	0.8	1.6	F C S
6.3		0.5	5.0	0.8		
8		0.5/0.6	5.0	1.0		
10		0.6	5.0	1.0	1.6	C M R L
12.5		0.6	5.0	1.0		
16		0.8	7.5	1.2		
18		0.8	7.5	1.2		
20		0.8	7.5	1.2		
22		0.8	10.0	1.2		

● Lead configuration:B



$\phi D$	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	10.0-25.0		
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			
	$\pm 1.0$	$\pm 0.5$	0.3	$\pm 1.0$		$\pm 1.0$

● Lead configuration:K



$\phi D$	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		
	$\pm 1.0$	$\pm 0.5$	$\pm 0.3$	$\pm 0.3$	$\pm 0.3$	$\pm 1.0$	$\pm 1.0$