

# 规格書

## SPECIFICATION

Customer : \_\_\_\_\_

Part Name: \_\_\_\_\_ **E-CAP** \_\_\_\_\_

SPEC : \_\_\_\_\_ **RG Series** \_\_\_\_\_

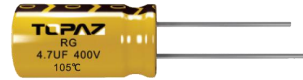
Part NO. : \_\_\_\_\_ **ALL** \_\_\_\_\_

Date : \_\_\_\_\_ **2017-11-22** \_\_\_\_\_

CUSTOMER SIGN		

TOPAZCON	
DRAWING	RATIFY
黃峰	陳慶

# RG Series

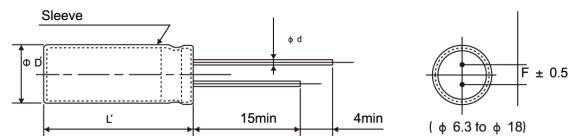


- Longer life, better performance
- life time, +130 °C 2,000hours, +105 °C 10,000hours
- suitable for electronic ballast; electronic energy saving lamp
- RoHS Compliant

## ● SPECIFICATIONS

Item	Characteristics							
Temperature Range	-25 to +105 °C (160-400Vdc)		-25 to +105 °C (450Vdc)			-25 to +105 °C (500Vdc)		
Rated Voltage Range	160 to 500Vdc							
Capacitance Tolerance	± 20%(M) (20 °C 120Hz)							
Leakage Current	160 ~ 400Vdc	450-500Vdc			I:leakage current(uA),C:Nominal capacitance (UF) V:Rated voltage(V) (at 20 °C 120Hz)			
	1 ≤ 0.02CV +10uA		1 ≤ 0.03CV +10uA		(20 °C ,2minutes)			
Dissipation Factor (tan δ)	Rated voltage(Vdc)	160	200	250	350	400	450	500
	tan δ (Max)	0.15	0.15	0.15	0.20	0.20	0.20	0.24
Temperature Characteristics (Max.Impedance Ratio)	Rate Voltage(Vdc)	160	200	250	350	400	450	500
	Z(-25 °C )/Z(+20 °C )	3	3	3	5	5	6	6
	Z(-40 °C )/Z(+20 °C )	6	6	6	6	6	-	-
Endurance	After application of the rated DC voltage at 130 °C 2,000 hours (WV.160 ~ 450Vdc) or application of DC voltage with rated ripple current(the voltage peak is not more than rated voltage) at 105 °C 10,000 hours(WV500V for 8,000 hours),measuring the parameters when the capacitors are restored to 20 °C , the capacitors shall meet the requirements as below							
	Capacitance change	≤ ± 20% of the initial value						
	D.F. (tan δ)	≤ 200% of the initial specified value						
	Leakage current	≤ The initial specified value						
Shelf Life	The following specification shall be satisfied when the capacitor are restored to 20 °C after exposing them for 1,000hours at 105 °C without voltage application.							
	Capacitance change	≤ ± 20% of the initial value						
	D.F. (tan δ)	≤ 200% of the initial specified value						
	Leakage current	≤ 200%of the initial specified value						

## ● DIMENSIONS[MM]



φ D	6.3	8	10	12.5	16	18
φ d	0.5	0.5	0.6	0.6	0.8	0.8
F	2.5	3.5	5.0	5.0	7.5	7.5
φ D'	φ D+0.5max					
L'	L+2max					

## ● RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

WV(Vdc)	Freq(Hz)			
	120	1K	10K	100K
160 ~ 450	0.50	0.80	0.90	1.00

# RG Series

● STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φ D × L(mm)	tan δ	Ripple current (mA rms/105 °C, 100kHz)
160V(2C)	1	6.3 × 9	0.15	40
		6.3 × 12	0.15	45
	1.5	6.3 × 12	0.15	50
		6.3 × 9	0.15	50
	1.8	6.3 × 12	0.15	55
		6.3 × 9	0.15	55
	2.2	6.3 × 12	0.15	61
		6.3 × 9	0.15	70
	2.8	6.3 × 12	0.15	78
		6.3 × 9	0.15	85
	3.3	6.3 × 12	0.15	92
		6.3 × 9	0.15	92
	4.7	8 × 12	0.15	100
		8 × 9	0.15	100
	5.6	8 × 12	0.15	107
		8 × 9	0.15	107
	6.8	8 × 16	0.15	115
		8 × 9	0.15	150
	8.2	8 × 16	0.15	189
		8 × 9	0.15	190
	10	8 × 16	0.15	275
		8 × 20	0.15	340
15	10 × 9	0.15	280	
	10 × 16	0.15	475	
33	10 × 20	0.15	650	
	10 × 20	0.15	750	
68	12.5 × 20	0.15	1180	
	12.5 × 20	0.15	1350	
100	12.5 × 25	0.15	1420	
	16 × 25	0.15	1890	
220	18 × 25	0.15	2370	
	1	6.3 × 9	0.15	50
1.2		6.3 × 12	0.15	58
	1.5	6.3 × 9	0.15	60
1.8		6.3 × 12	0.15	66
	2.2	6.3 × 9	0.15	72
2.8		6.3 × 12	0.15	81
	3.3	6.3 × 9	0.15	81
4.7		6.3 × 12	0.15	88
	5.6	6.3 × 12	0.15	105
6.8		6.3 × 12	0.15	112
	8.2	6.3 × 12	0.15	115
10		8 × 9	0.15	117
	15	8 × 12	0.15	120
22		8 × 9	0.15	120
	33	8 × 12	0.15	126
47		8 × 9	0.15	126
	68	8 × 16	0.15	140
100		8 × 16	0.15	260
	150	10 × 9	0.15	200
1		6.3 × 9	0.15	50
	1.2	6.3 × 12	0.15	58
1.5		6.3 × 9	0.15	60
	1.8	6.3 × 12	0.15	66
2.2		6.3 × 9	0.15	72
	2.8	6.3 × 12	0.15	81
3.3		6.3 × 9	0.15	81
	4.7	6.3 × 12	0.15	88
5.6		6.3 × 12	0.15	105
	6.8	6.3 × 12	0.15	112
8.2		6.3 × 12	0.15	115
	10	8 × 9	0.15	117
15		8 × 12	0.15	120
	22	8 × 9	0.15	120
33		8 × 12	0.15	126
	47	8 × 9	0.15	126
68		8 × 16	0.15	140
	100	8 × 16	0.15	260
150		10 × 9	0.15	200
	1	6.3 × 9	0.15	50
1.2		6.3 × 12	0.15	58
	1.5	6.3 × 9	0.15	60
1.8		6.3 × 12	0.15	66
	2.2	6.3 × 9	0.15	72
2.8		6.3 × 12	0.15	81
	3.3	6.3 × 9	0.15	81
4.7		6.3 × 12	0.15	88
	5.6	6.3 × 12	0.15	105
6.8		6.3 × 12	0.15	112
	8.2	6.3 × 12	0.15	115
10		8 × 9	0.15	117
	15	8 × 12	0.15	120
22		8 × 9	0.15	120
	33	8 × 12	0.15	126
47		8 × 9	0.15	126
	68	8 × 16	0.15	140
100		8 × 16	0.15	260
	150	10 × 9	0.15	200
1		6.3 × 9	0.15	50
	1.2	6.3 × 12	0.15	58
1.5		6.3 × 9	0.15	60
	1.8	6.3 × 12	0.15	66
2.2		6.3 × 9	0.15	72
	2.8	6.3 × 12	0.15	81
3.3		6.3 × 9	0.15	81
	4.7	6.3 × 12	0.15	88
5.6		6.3 × 12	0.15	105
	6.8	6.3 × 12	0.15	112
8.2		6.3 × 12	0.15	115
	10	8 × 9	0.15	117
15		8 × 12	0.15	120
	22	8 × 9	0.15	120
33		8 × 12	0.15	126
	47	8 × 9	0.15	126
68		8 × 16	0.15	140
	100	8 × 16	0.15	260
150		10 × 9	0.15	200

WV (Vdc)	Cap (μF)	Case size φ D × L(mm)	tan δ	Ripple current (mA rms/105 °C, 100kHz)
250V(2E)	1	6.3 × 9	0.15	50
		6.3 × 12	0.15	58
	1.2	6.3 × 9	0.15	55
		6.3 × 9	0.15	60
	1.5	6.3 × 12	0.15	66
		6.3 × 9	0.15	70
	1.8	6.3 × 12	0.15	77
		6.3 × 9	0.15	72
	2.2	6.3 × 12	0.15	81
		6.3 × 9	0.15	81
	2.8	6.3 × 12	0.15	88
		6.3 × 12	0.15	112
	3.3	8 × 9	0.15	114
		8 × 9	0.15	116
	4.7	8 × 12	0.15	120
		8 × 9	0.15	120
	5.6	8 × 12	0.15	126
		8 × 9	0.15	145
	6.8	8 × 16	0.15	160
		10 × 9	0.15	150
	8.2	8 × 16	0.15	260
		10 × 9	0.15	200
10	8 × 16	0.15	275	
	8 × 20	0.15	378	
15	10 × 16	0.15	480	
	10 × 20	0.15	500	
22	12.5 × 16	0.15	600	
	12.5 × 20	0.15	660	
33	12.5 × 16	0.15	880	
	12.5 × 20	0.15	980	
47	16 × 25	0.15	1320	
	16 × 30	0.15	1500	
68	16 × 35	0.15	2000	
	6.3 × 9	0.20	55	
100	6.3 × 12	0.20	60	
	6.3 × 12	0.20	60	
150	6.3 × 9	0.20	65	
	6.3 × 12	0.20	70	
1	6.3 × 9	0.20	72	
	6.3 × 12	0.20	80	
1.2	8 × 9	0.20	82	
	8 × 9	0.20	86	
1.5	8 × 12	0.20	90	
	8 × 9	0.20	88	
1.8	8 × 12	0.20	95	
	8 × 9	0.20	100	
2.2	8 × 12	0.20	108	
	8 × 16	0.20	128	
2.8	10 × 9	0.20	120	
	8 × 16	0.20	162	
3.3	10 × 9	0.20	145	
	8 × 20	0.20	215	
4.7	8 × 20	0.20	220	
	8 × 20	0.20	260	
5.6	10 × 20	0.20	380	
	12.5 × 20	0.20	525	
6.8	12.5 × 20	0.20	600	
	16 × 20	0.20	650	
8.2	16 × 20	0.20	700	
	18 × 20	0.20	780	
10	18 × 25	0.20	850	
	18 × 25	0.20	1000	

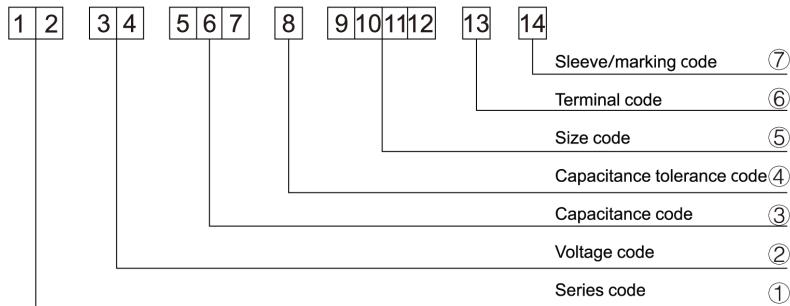
# RG Series

● STANDARD RATINGS

WV (Vdc)	Cap (μ F)	Case size φ D × L(mm)	tan δ	Ripple current (mAmps/105 °C ,100kHz)
400V(2G)	1	6.3 × 9	0.20	65
		8 × 12	0.20	70
	1.2	6.3 × 12	0.20	68
		8 × 9	0.20	72
	1.5	8 × 12	0.20	76
		8 × 9	0.20	76
	1.8	8 × 12	0.20	85
		8 × 9	0.20	85
	2.2	8 × 12	0.20	90
		8 × 9	0.20	90
	2.8	8 × 16	0.20	99
		8 × 9	0.20	100
	3.3	8 × 16	0.20	108
		8 × 20	0.20	130
	4.7	10 × 9	0.20	120
		8 × 20	0.20	175
	6.8	10 × 16	0.20	215
	8.2	10 × 20	0.20	240
	10	10 × 20	0.20	275
	12	12.5 × 20	0.20	300
	15	12.5 × 16	0.20	324
		12.5 × 20	0.20	360
	22	12.5 × 25	0.20	500
		16 × 20	0.20	500
33	16 × 25	0.20	620	
47	16 × 30	0.20	756	
56	16 × 40	0.20	800	
68	18 × 30	0.20	900	
100	18 × 40	0.20	1200	
450V(2W)	1	6.3 × 9	0.20	76
		8 × 12	0.20	82
1.2	8 × 9	0.20	80	

WV (Vdc)	Cap (μ F)	Case size φ D × L(mm)	tan δ	Ripple current (mAmps/105 °C ,100kHz)
450V(2W)	1.5	8 × 9	0.20	82
		8 × 12	0.20	85
	1.8	8 × 12	0.20	88
		10 × 9	0.20	90
	2.2	8 × 16	0.20	95
		10 × 9	0.20	92
	2.8	8 × 16	0.20	99
		10 × 9	0.20	95
	3.3	8 × 16	0.20	100
		10 × 9	0.20	98
	3.9	10 × 9	0.20	115
	4.7	10 × 16	0.20	130
	5.6	10 × 20	0.20	177
	6.8	10 × 20	0.20	215
	8.2	10 × 20	0.20	230
	10	10 × 25	0.20	300
		12.5 × 16	0.20	280
	15	12.5 × 20	0.20	410
	22	12.5 × 25	0.20	530
		16 × 20	0.20	530
	33	16 × 25	0.20	670
	47	16 × 35	0.20	850
	56	18 × 30	0.20	1080
	68	18 × 35	0.20	1300
100	18 × 40	0.20	1530	
500V(2H)	10	12.5 × 20	0.24	288
		12.5 × 25	0.24	302
	15	12.5 × 25	0.24	396
		16 × 20	0.24	396
	22	12.5 × 35	0.24	504
		16 × 25	0.24	504
	33	18 × 25	0.24	630
47	18 × 30	0.24	792	

## Part Number System



### ① Series code

Series name	Code	
	1	2
SM	S	M
SS	S	S
SH	S	H
SP	S	P
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

### ② Voltage code

WV (V <sub>dc</sub> )	Code	
	3	4
4	0	G
6.3	0	J
10	1	A
16	1	C
25	1	E
35	1	V
50	1	H
63	1	J
80	1	K
100	2	A
160	2	C
200	2	D
250	2	E
350	2	V
400	2	G
450	2	W
500	2	H

### ③ Capacitance code

Cap (uF)	Code		
	5	6	7
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

### ④ Capacitance tolerance code

Tol. (%)	Code
	8
-5 ~ +5	J
-10 ~ +10	K
-20 ~ +20	M

### ⑤ Size code

ΦD × L (mm)	Code			
	9	10	11	12
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

### ⑦ Sleeve/Marking code

Sleeve/Marking	Code 14
PET	T
Black	B
Yellow	Y
Ink Green	I
Pea Green	P
Orange	O

### ⑥ Terminal code

Specification	Code 13	
Bulk packing	0	
Φ4-8Taping	T1	
	T2	
	T2	
Φ10-18Taping	T3	
	Lesd Cut	F
		C
R		
L		
M		
S		
B		
K		

Lead Forming

Taping Specifications

Fig.1 Code:T1

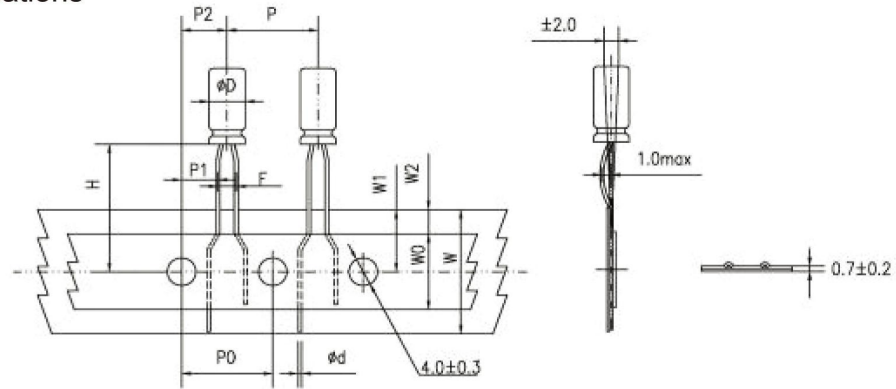


Fig.2 Code:T2

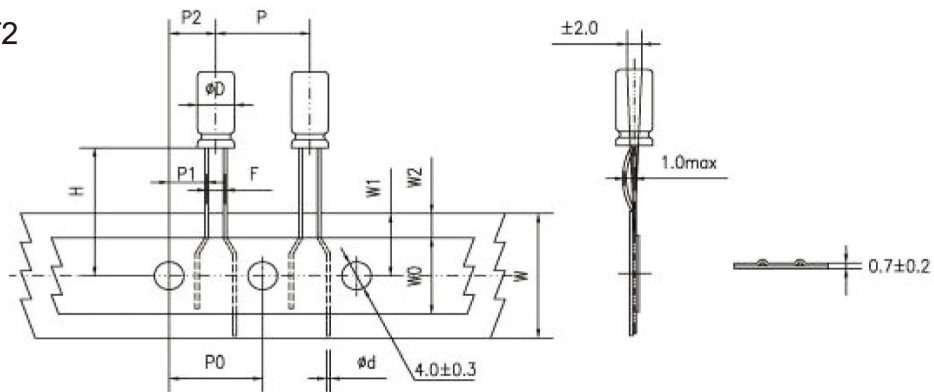


Fig.3 Code:T2

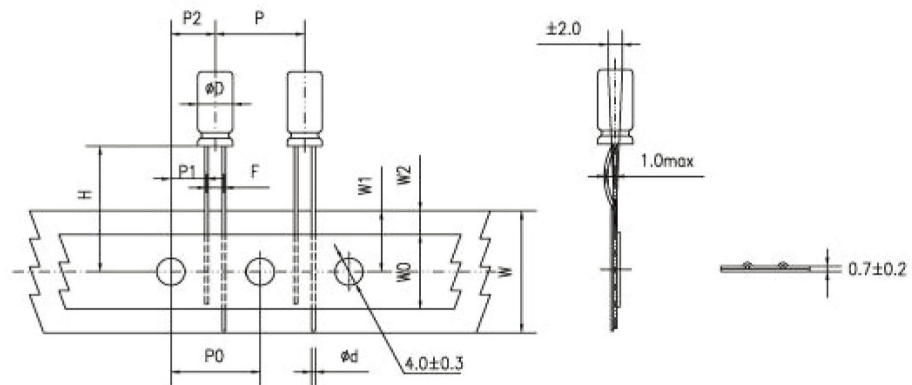
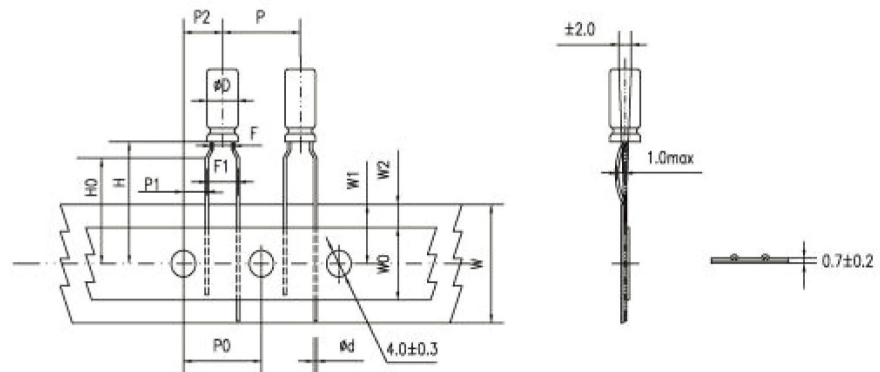


Fig.4 Code:T3



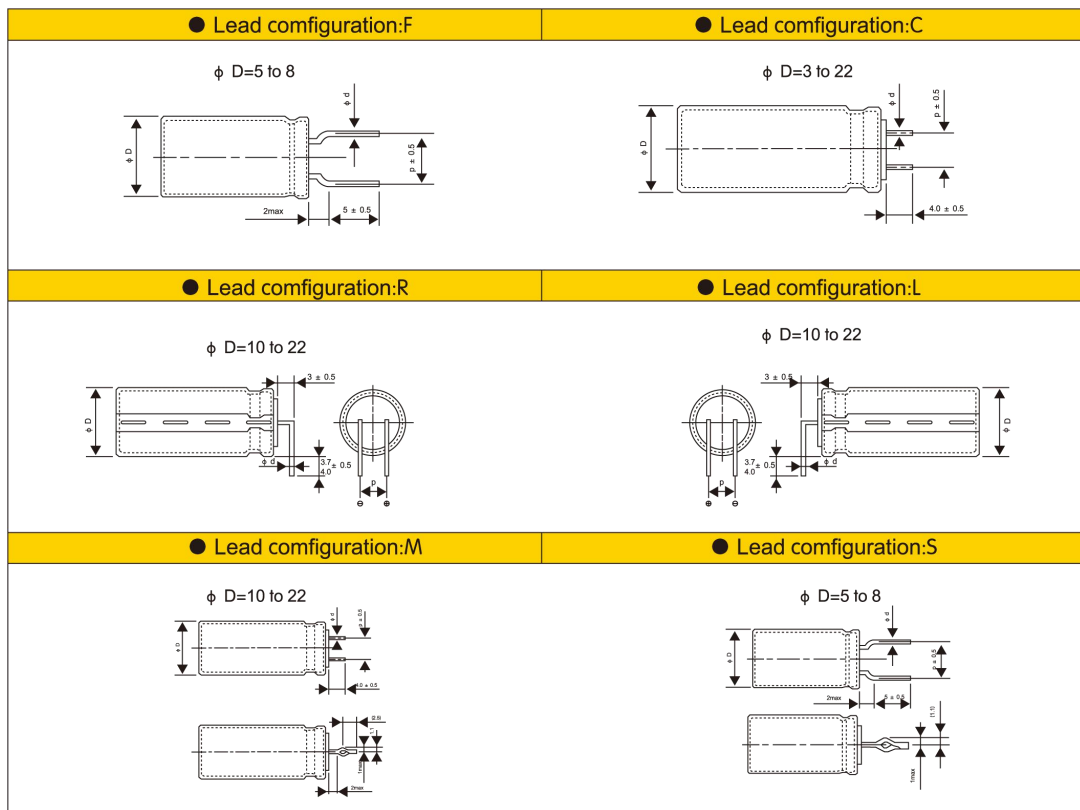
**Specification Fig.1 & Fig.2 & Fig.3**

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	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	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	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	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	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	11.0	min
Hole positron	W1	9.0		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	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:



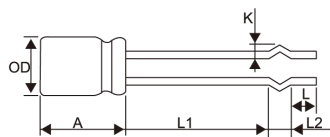
● LEAD SPACING & RECOMMENDED PCB DIMENSIONS

(mm)

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

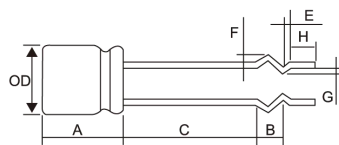


● Lead configuration: B



∅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			
	± 1.0	± 0.5	0.3	± 1.0		± 1.0

● Lead configuration: K



∅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		
	± 1.0	± 0.5	± 0.3	± 0.3	± 0.3	± 1.0	± 1.0