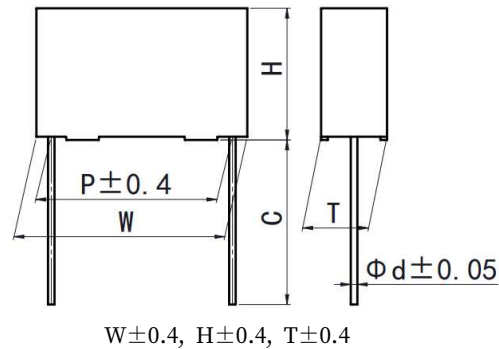


Metallized polypropylene film capacitor (Box-type)

■ Outline Drawing



■ Features

- Low loss at high frequency
- Small inherent temperature rise, high temperature rang
- Plastic case (UL94 V-0), epoxy resin sealing

■ Typical application

- Pulse applications with high A.C. voltage and high current
- Electric lighting (i.e. Electric ballast, E-HID)
- High-frequency A.C. loads

■ Specifications

Reference Standard	GB/T 14579 (IEC 60384-17)				
Climatic Category	55/125/56				
Rated temperature	105°C				
Operating temperature range	-55°C~125°C (+105°C to +125°C: decreasing factor 1.25% per °C for U_R)				
Capacitance Range	0.00047μF ~ 0.15μF				
Capacitance Tolerance	±3%(H), ±5%(J), ±10%(K)				
Voltage Proof	1.6 U_R (5s)				
Dissipation Factor	≤10 × 10 ⁻⁴ (20°C, 1kHz)				
Insulation Resistance	≥100 000MΩ (20°C, 100V, 1min)				
Maximum Pulse Rise Time(dV/dt) If the working voltage(U) is lower than the rated voltage(U_R),the capacitor can be worked at a higher dV/dt. In this case, the maximum allowed dV/dt is obtain by multipling the right value with U_R/U .	U_R (Vac)	dV/dt(V/us)			
		P=7.5	P=10.0	P=15.0	P=22.5
	400	3 000	2 200	2 000	800
	500	4 000	3 000	2 500	1 200
	600	6 500	6 000	4 500	1 800
	700	--	9 800	9 500	4 500
	900	--	--	10 000	6 000

Rated Voltage	400Vac		500Vac		600Vac		700Vac		900Vac
Pitch(mm)	7.5	>7.5	7.5	>7.5	≤10.0	>10.0	10.0	>10.0	---
VDC(V)	1000	1300	1300	1400	1400	1600	1600	2000	2500

■ Part number system

The 15 digits part number is formed as follow:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

C	3	3												
---	---	---	--	--	--	--	--	--	--	--	--	--	--	--

Digit 1 to 3 Series code

C33=MKP23

Digit 4 to 5 AC rated voltage

G2=400V H2=500V U1=600V

V1=700V X1=900V

Digit 6 to 8 Rated capacitance value

For example: 103=10×10³pF=0.01uF

Digit 9 Capacitance tolerance

H=±3%,J=±5%,K=±10%,

Digit 10 Pitch

3=7.5mm 4=10mm 6=15mm 9=22.5mm

Digit 11 Internal use

Digit 12 to 15 Lead form and packing code

Table 1 lead form and packing code

Digit 12		Digit 13		Digit 14		Digit 15	
code	explanation	code	explanation	code	explanation	code	explanation
A	ammo-pack	3	F=7.5mm	0	straight		
		4	F=10.0mm			1	each cap. among two consecutive holes P3=12.7mm,H=18.5mm (For pitch=5.0/7.5mm)
		6	F=15.0mm			5	P3=25.4mm;H=18.5mm (For pitch=10/15mm)
C	straight lead “ C ” in the figure above	code	explanation		0	Length tolerance ±0.5mm (or standard length)	
		00	standard lead length (18mm~26mm)				
		45	lead length 4.5mm				

Note: Recommend short lead due to long lead could deform easily.

Dimensions(mm)

400Vac						
C _N (μF)	W	H	T	P	d	Part number
0.00082	10.5	9.0	4.0	7.5	0.6	C33G2821-30****
0.0010	10.5	9.0	4.0	7.5	0.6	C33G2102-30****
0.0012	10.5	9.0	4.0	7.5	0.6	C33G2122-30****
0.0015	10.5	9.0	4.0	7.5	0.6	C33G2152-30****
0.0018	10.5	9.0	4.0	7.5	0.6	C33G2182-30****
0.0022	10.5	9.0	4.0	7.5	0.6	C33G2222-30****
0.0027	10.5	9.0	4.0	7.5	0.6	C33G2272-30****
0.0033	10.5	9.0	4.0	7.5	0.6	C33G2332-30****
0.0036	10.5	9.0	4.0	7.5	0.6	C33G2362-30****
0.0039	10.5	9.0	4.0	7.5	0.6	C33G2392-30****
0.0047	10.5	9.0	4.0	7.5	0.6	C33G2472-30****
0.0056	10.5	11.0	5.0	7.5	0.6	C33G2562-30****
0.0068	10.5	11.0	5.0	7.5	0.6	C33G2682-30****
0.0082	10.5	11.0	5.0	7.5	0.6	C33G2822-30****
0.010	10.5	12.0	6.0	7.5	0.6	C33G2103-30****
0.012	10.5	12.0	6.0	7.5	0.6	C33G2123-30****
0.0010	13.0	9.0	4.0	10.0	0.6	C33G2102-40****
0.0012	13.0	9.0	4.0	10.0	0.6	C33G2122-40****
0.0015	13.0	9.0	4.0	10.0	0.6	C33G2152-40****
0.0018	13.0	9.0	4.0	10.0	0.6	C33G2182-40****
0.0022	13.0	9.0	4.0	10.0	0.6	C33G2222-40****
0.0027	13.0	9.0	4.0	10.0	0.6	C33G2272-40****
0.0033	13.0	9.0	4.0	10.0	0.6	C33G2332-40****
0.0039	13.0	9.0	4.0	10.0	0.6	C33G2392-40****
0.0047	13.0	11.0	5.0	10.0	0.6	C33G2472-40****
0.0056	13.0	11.0	5.0	10.0	0.6	C33G2562-40****
0.0068	13.0	11.0	5.0	10.0	0.6	C33G2682-40****
0.0082	13.0	12.0	6.0	10.0	0.6	C33G2822-40****
0.010	13.0	12.0	6.0	10.0	0.6	C33G2103-40****

400Vac						
C _N (μF)	W	H	T	P	d	Part number
0.0022	17.5	11.0	5.0	15.0	0.8	C33G2222-60****
0.0027	17.5	11.0	5.0	15.0	0.8	C33G2272-60****
0.0033	17.5	11.0	5.0	15.0	0.8	C33G2332-60****
0.0039	17.5	11.0	5.0	15.0	0.8	C33G2392-60****
0.0047	17.5	11.0	5.0	15.0	0.8	C33G2472-60****
0.0056	17.5	11.0	5.0	15.0	0.8	C33G2562-60****
0.0068	17.5	11.0	5.0	15.0	0.8	C33G2682-60****
0.0082	17.5	11.0	5.0	15.0	0.8	C33G2822-60****
0.010	17.5	11.0	5.0	15.0	0.8	C33G2103-60****
0.012	17.5	11.0	5.0	15.0	0.8	C33G2123-60****
0.015	17.5	12.0	6.0	15.0	0.8	C33G2153-60****
0.018	17.5	12.0	6.0	15.0	0.8	C33G2183-60****
0.022	17.5	13.5	7.5	15.0	0.8	C33G2223-60****
0.027	17.5	13.5	7.5	15.0	0.8	C33G2273-60****
0.033	17.5	14.5	8.5	15.0	0.8	C33G2333-60****
0.039	17.5	16.0	10.0	15.0	0.8	C33G2393-60****
0.047	17.5	16.0	10.0	15.0	0.8	C33G2473-60****
0.056	17.5	19.0	11.0	15.0	0.8	C33G2563-60****
0.068	17.5	19.0	11.0	15.0	0.8	C33G2683-60****
0.018	26.5	15.0	6.0	22.5	0.8	C33G2183-90****
0.022	26.5	15.0	6.0	22.5	0.8	C33G2223-90****
0.027	26.5	15.0	6.0	22.5	0.8	C33G2273-90****
0.033	26.5	15.0	6.0	22.5	0.8	C33G2333-90****
0.039	26.5	15.0	6.0	22.5	0.8	C33G2393-90****
0.047	26.5	16.0	7.0	22.5	0.8	C33G2473-90****
0.056	26.5	16.0	7.0	22.5	0.8	C33G2563-90****
0.068	26.5	17.0	8.5	22.5	0.8	C33G2683-90****
0.082	26.5	17.0	8.5	22.5	0.8	C33G2823-90****
0.10	26.5	18.5	10.0	22.5	0.8	C33G2104-90****
0.12	26.5	22.0	12.0	22.5	0.8	C33G2124-90****
0.15	26.5	22.0	12.0	22.5	0.8	C33G2154-90****

- Note: 1. “-” =capacitance tolerance code, K=±10%,J=±5%, H=±3%
2. “****” =lead form and packing code (refer to table 1)



■ Dimensions(mm)

500Vac						
C _N (μF)	W	H	T	P	d	Part number
0.00056	10.5	9.0	4.0	7.5	0.6	C33H2561-3S****
0.00062	10.5	9.0	4.0	7.5	0.6	C33H2621-3S****
0.00068	10.5	9.0	4.0	7.5	0.6	C33H2681-3S****
0.00082	10.5	9.0	4.0	7.5	0.6	C33H2821-3S****
0.0010	10.5	9.0	4.0	7.5	0.6	C33H2102-3S****
0.0012	10.5	9.0	4.0	7.5	0.6	C33H2122-3S****
0.0015	10.5	9.0	4.0	7.5	0.6	C33H2152-3S****
0.0018	10.5	9.0	4.0	7.5	0.6	C33H2182-3S****
0.0022	10.5	11.0	5.0	7.5	0.6	C33H2222-3S****
0.0027	10.5	11.0	5.0	7.5	0.6	C33H2272-3S****
0.0033	10.5	11.0	5.0	7.5	0.6	C33H2332-3S****
0.0036	10.5	12.0	6.0	7.5	0.6	C33H2362-3S****
0.0039	10.5	12.0	6.0	7.5	0.6	C33H2392-3S****
0.0047	10.5	12.0	6.0	7.5	0.6	C33H2472-3S****
0.0056	10.5	12.0	6.0	7.5	0.6	C33H2562-3S****
0.0010	13.0	9.0	4.0	10.0	0.6	C33H2102-4S****
0.0012	13.0	9.0	4.0	10.0	0.6	C33H2122-4S****
0.0015	13.0	9.0	4.0	10.0	0.6	C33H2152-4S****
0.0018	13.0	9.0	4.0	10.0	0.6	C33H2182-4S****
0.0022	13.0	9.0	4.0	10.0	0.6	C33H2222-4S****
0.0027	13.0	9.0	4.0	10.0	0.6	C33H2272-4S****
0.0030	13.0	9.0	4.0	10.0	0.6	C33H2302-4S****
0.0033	13.0	9.0	4.0	10.0	0.6	C33H2332-4S****
0.0039	13.0	11.0	5.0	10.0	0.6	C33H2392-4S****
0.0047	13.0	11.0	5.0	10.0	0.6	C33H2472-4S****
0.0056	13.0	11.0	5.0	10.0	0.6	C33H2562-4S****
0.0068	13.0	12.0	6.0	10.0	0.6	C33H2682-4S****
0.0082	13.0	12.0	6.0	10.0	0.6	C33H2822-4S****
0.010	13.0	13.0	7.0	10.0	0.6	C33H2103-4S****
0.012	13.0	14.0	8.0	10.0	0.6	C33H2123-4S****

500Vac						
C _N (μF)	W	H	T	P	d	Part number
0.0033	17.5	11.0	5.0	15.0	0.8	C33H2332-6S****
0.0036	17.5	11.0	5.0	15.0	0.8	C33H2362-6S****
0.0039	17.5	11.0	5.0	15.0	0.8	C33H2392-6S****
0.0047	17.5	11.0	5.0	15.0	0.8	C33H2472-6S****
0.0056	17.5	11.0	5.0	15.0	0.8	C33H2562-6S****
0.0068	17.5	11.0	5.0	15.0	0.8	C33H2682-6S****
0.0082	17.5	11.0	5.0	15.0	0.8	C33H2822-6S****
0.010	17.5	11.0	5.0	15.0	0.8	C33H2103-6S****
0.012	17.5	12.0	6.0	15.0	0.8	C33H2123-6S****
0.015	17.5	12.0	6.0	15.0	0.8	C33H2153-6S****
0.018	17.5	13.5	7.5	15.0	0.8	C33H2183-6S****
0.022	17.5	13.5	7.5	15.0	0.8	C33H2223-6S****
0.027	17.5	13.5	7.5	15.0	0.8	C33H2273-6S****
0.030	17.5	14.5	8.5	15.0	0.8	C33H2303-6S****
0.033	17.5	16.0	10.0	15.0	0.8	C33H2333-6S****
0.036	17.5	16.0	10.0	15.0	0.8	C33H2363-6S****
0.039	17.5	16.0	10.0	15.0	0.8	C33H2393-6S****
0.047	17.5	19.0	11.0	15.0	0.8	C33H2473-6S****
0.056	17.5	19.0	11.0	15.0	0.8	C33H2563-6S****
0.010	26.5	15.0	6.0	22.5	0.8	C33H2103-9S****
0.012	26.5	15.0	6.0	22.5	0.8	C33H2123-9S****
0.015	26.5	15.0	6.0	22.5	0.8	C33H2153-9S****
0.018	26.5	15.0	6.0	22.5	0.8	C33H2183-9S****
0.022	26.5	15.0	6.0	22.5	0.8	C33H2223-9S****
0.027	26.5	15.0	6.0	22.5	0.8	C33H2273-9S****
0.033	26.5	16.0	7.0	22.5	0.8	C33H2333-9S****
0.036	26.5	16.0	7.0	22.5	0.8	C33H2363-9S****
0.039	26.5	16.0	7.0	22.5	0.8	C33H2393-9S****
0.047	26.5	17.0	8.5	22.5	0.8	C33H2473-9S****
0.056	26.5	17.0	8.5	22.5	0.8	C33H2563-9S****
0.068	26.5	18.5	10.0	22.5	0.8	C33H2683-9S****
0.082	26.5	18.5	10.0	22.5	0.8	C33H2823-9S****
0.10	26.5	22.0	12.0	22.5	0.8	C33H2104-9S****
0.12	26.5	22.0	12.0	22.5	0.8	C33H2124-9S****

Note: 1. “-” =capacitance tolerance code, K=±10%,J=±5%, H=±3%
2. “****” =lead form and packing code (refer to table 1)



■ Dimensions(mm)

600Vac						
C _N (μF)	W	H	T	P	d	Part number
0.00047	10.5	9.0	4.0	7.5	0.6	C33U1471-30****
0.00056	10.5	9.0	4.0	7.5	0.6	C33U1561-30****
0.00062	10.5	9.0	4.0	7.5	0.6	C33U1621-30****
0.00068	10.5	9.0	4.0	7.5	0.6	C33U1681-30****
0.00082	10.5	9.0	4.0	7.5	0.6	C33U1821-30****
0.0010	10.5	9.0	4.0	7.5	0.6	C33U1102-30****
0.0012	10.5	9.0	4.0	7.5	0.6	C33U1122-30****
0.0015	10.5	9.0	4.0	7.5	0.6	C33U1152-30****
0.0018	10.5	11.0	5.0	7.5	0.6	C33U1182-30****
0.0022	10.5	11.0	5.0	7.5	0.6	C33U1222-30****
0.0027	10.5	11.0	5.0	7.5	0.6	C33U1272-30****
0.0033	10.5	12.0	6.0	7.5	0.6	C33U1332-30****
0.0036	10.5	12.0	6.0	7.5	0.6	C33U1362-30****
0.0039	10.5	12.0	6.0	7.5	0.6	C33U1392-30****
0.0047	10.5	12.0	6.0	7.5	0.6	C33U1472-30****
0.00056	13.0	9.0	4.0	10.0	0.6	C33U1561-40****
0.00062	13.0	9.0	4.0	10.0	0.6	C33U1621-40****
0.00068	13.0	9.0	4.0	10.0	0.6	C33U1681-40****
0.00082	13.0	9.0	4.0	10.0	0.6	C33U1821-40****
0.0010	13.0	9.0	4.0	10.0	0.6	C33U1102-40****
0.0011	13.0	9.0	4.0	10.0	0.6	C33U1112-40****
0.0012	13.0	9.0	4.0	10.0	0.6	C33U1122-40****
0.0013	13.0	9.0	4.0	10.0	0.6	C33U1132-40****
0.0015	13.0	9.0	4.0	10.0	0.6	C33U1152-40****
0.0017	13.0	9.0	4.0	10.0	0.6	C33U1172-40****
0.0018	13.0	9.0	4.0	10.0	0.6	C33U1182-40****
0.0020	13.0	9.0	4.0	10.0	0.6	C33U1202-40****
0.0022	13.0	9.0	4.0	10.0	0.6	C33U1222-40****
0.0027	13.0	9.0	4.0	10.0	0.6	C33U1272-40****
0.0030	13.0	9.0	4.0	10.0	0.6	C33U1302-40****
0.0033	13.0	9.0	4.0	10.0	0.6	C33U1332-40****
0.0036	13.0	11.0	5.0	10.0	0.6	C33U1362-40****
0.0039	13.0	11.0	5.0	10.0	0.6	C33U1392-40****
0.0047	13.0	11.0	5.0	10.0	0.6	C33U1472-40****
0.0056	13.0	11.0	5.0	10.0	0.6	C33U1562-40****
0.0068	13.0	12.0	6.0	10.0	0.6	C33U1682-40****

600Vac						
C _N (μF)	W	H	T	P	d	Part number
0.0082	13.0	12.0	6.0	10.0	0.6	C33U1822-40****
0.010	13.0	13.0	7.0	10.0	0.6	C33U1103-40****
0.012	13.0	14.0	8.0	10.0	0.6	C33U1123-40****
0.0010	17.5	11.0	5.0	15.0	0.8	C33U1102-60****
0.0012	17.5	11.0	5.0	15.0	0.8	C33U1122-60****
0.0015	17.5	11.0	5.0	15.0	0.8	C33U1152-60****
0.0018	17.5	11.0	5.0	15.0	0.8	C33U1182-60****
0.0022	17.5	11.0	5.0	15.0	0.8	C33U1222-60****
0.0027	17.5	11.0	5.0	15.0	0.8	C33U1272-60****
0.0033	17.5	11.0	5.0	15.0	0.8	C33U1332-60****
0.0039	17.5	11.0	5.0	15.0	0.8	C33U1392-60****
0.0047	17.5	11.0	5.0	15.0	0.8	C33U1472-60****
0.0056	17.5	11.0	5.0	15.0	0.8	C33U1562-60****
0.0068	17.5	11.0	5.0	15.0	0.8	C33U1682-60****
0.0082	17.5	12.0	6.0	15.0	0.8	C33U1822-60****
0.010	17.5	12.0	6.0	15.0	0.8	C33U1103-60****
0.012	17.5	12.0	6.0	15.0	0.8	C33U1123-60****
0.015	17.5	13.5	7.5	15.0	0.8	C33U1153-60****
0.018	17.5	13.5	7.5	15.0	0.8	C33U1183-60****
0.022	17.5	14.5	8.5	15.0	0.8	C33U1223-60****
0.027	17.5	16.0	10.0	15.0	0.8	C33U1273-60****
0.033	17.5	16.0	10.0	15.0	0.8	C33U1333-60****
0.039	17.5	19.0	11.0	15.0	0.8	C33U1393-60****
0.047	17.5	19.0	11.0	15.0	0.8	C33U1473-60****
0.015	26.5	15.0	6.0	22.5	0.8	C33U1153-90****
0.018	26.5	15.0	6.0	22.5	0.8	C33U1183-90****
0.022	26.5	15.0	6.0	22.5	0.8	C33U1223-90****
0.027	26.5	16.0	7.0	22.5	0.8	C33U1273-90****
0.033	26.5	16.0	7.0	22.5	0.8	C33U1333-90****
0.039	26.5	17.0	8.5	22.5	0.8	C33U1393-90****
0.047	26.5	18.5	10.0	22.5	0.8	C33U1473-90****
0.056	26.5	18.5	10.0	22.5	0.8	C33U1563-90****
0.068	26.5	22.0	12.0	22.5	0.8	C33U1683-90****
0.082	26.5	22.0	12.0	22.5	0.8	C33U1823-90****
0.10	26.5	22.0	12.0	22.5	0.8	C33U1104-90****

- Note: 1. “-” =capacitance tolerance code, K=±10%,J=±5%, H=±3%
2. “****” =lead form and packing code (refer to table 1)



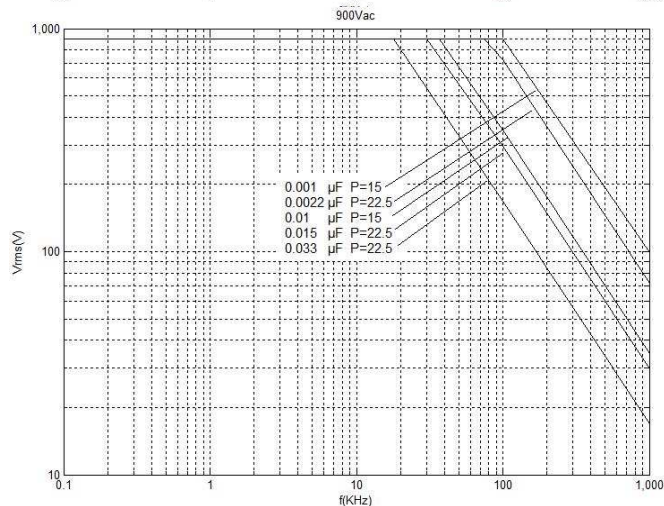
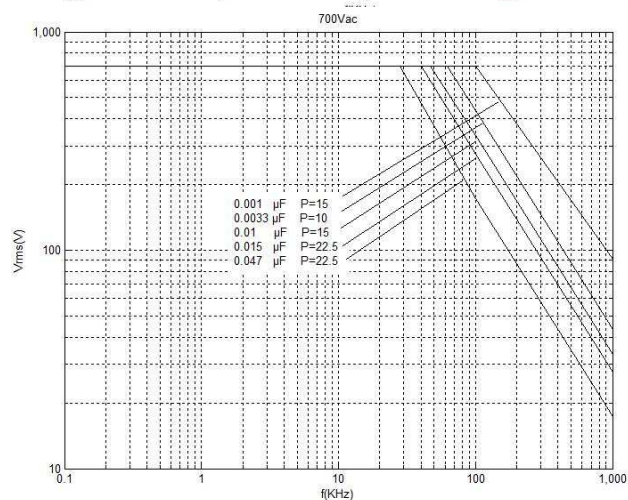
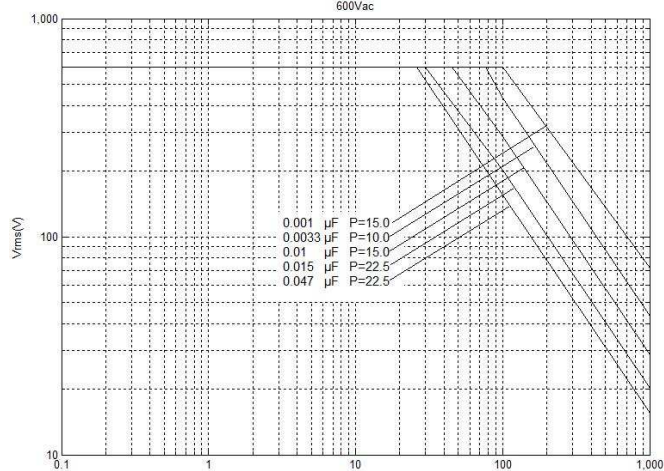
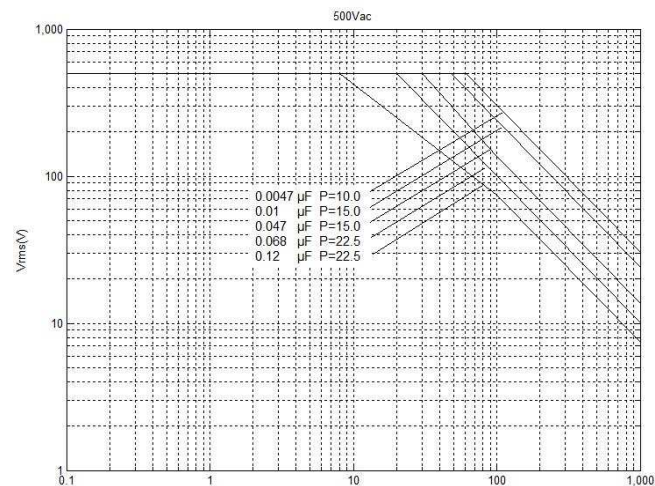
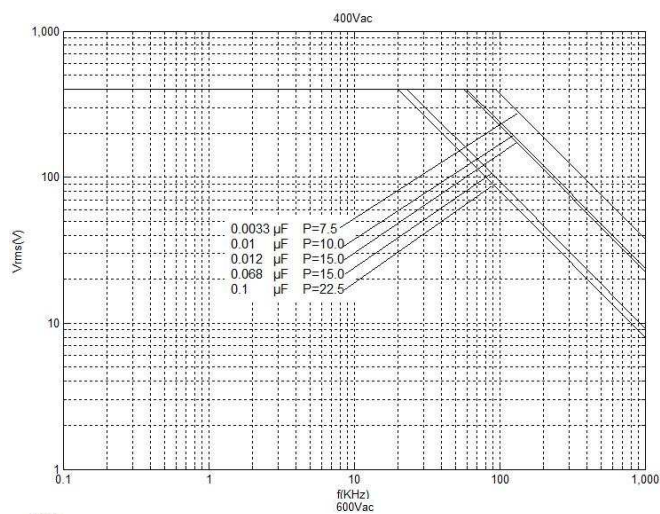
■ Dimensions(mm)

700Vac						
C _N (μF)	W	H	T	P	d	Part number
0.00056	13.0	9.0	4.0	10.0	0.6	C33V1561-40****
0.00062	13.0	9.0	4.0	10.0	0.6	C33V1621-40****
0.00068	13.0	9.0	4.0	10.0	0.6	C33V1681-40****
0.00082	13.0	9.0	4.0	10.0	0.6	C33V1821-40****
0.0010	13.0	9.0	4.0	10.0	0.6	C33V1102-40****
0.0012	13.0	9.0	4.0	10.0	0.6	C33V1122-40****
0.0015	13.0	11.0	5.0	10.0	0.6	C33V1152-40****
0.0018	13.0	11.0	5.0	10.0	0.6	C33V1182-40****
0.0022	13.0	11.0	5.0	10.0	0.6	C33V1222-40****
0.0027	13.0	11.0	5.0	10.0	0.6	C33V1272-40****
0.0033	13.0	12.0	6.0	10.0	0.6	C33V1332-40****
0.0036	13.0	12.0	6.0	10.0	0.6	C33V1362-40****
0.0039	13.0	12.0	6.0	10.0	0.6	C33V1392-40****
0.0047	13.0	13.0	7.0	10.0	0.6	C33V1472-40****
0.0056	13.0	13.0	7.0	10.0	0.6	C33V1562-40****
0.0068	13.0	14.0	8.0	10.0	0.6	C33V1682-40****
0.0082	13.0	14.0	8.0	10.0	0.6	C33V1822-40****
0.00056	17.5	11.0	5.0	15.0	0.8	C33V1561-60****
0.00062	17.5	11.0	5.0	15.0	0.8	C33V1621-60****
0.00068	17.5	11.0	5.0	15.0	0.8	C33V1681-60****
0.00082	17.5	11.0	5.0	15.0	0.8	C33V1821-60****
0.0010	17.5	11.0	5.0	15.0	0.8	C33V1102-60****
0.0012	17.5	11.0	5.0	15.0	0.8	C33V1122-60****
0.0015	17.5	11.0	5.0	15.0	0.8	C33V1152-60****
0.0018	17.5	11.0	5.0	15.0	0.8	C33V1182-60****
0.0022	17.5	11.0	5.0	15.0	0.8	C33V1222-60****
0.0027	17.5	11.0	5.0	15.0	0.8	C33V1272-60****
0.0033	17.5	11.0	5.0	15.0	0.8	C33V1332-60****
0.0039	17.5	11.0	5.0	15.0	0.8	C33V1392-60****
0.0047	17.5	11.0	5.0	15.0	0.8	C33V1472-60****
0.0056	17.5	12.0	6.0	15.0	0.8	C33V1562-60****
0.0068	17.5	12.0	6.0	15.0	0.8	C33V1682-60****
0.0082	17.5	13.5	7.5	15.0	0.8	C33V1822-60****
0.010	17.5	13.5	7.5	15.0	0.8	C33V1103-60****
0.012	17.5	14.5	8.5	15.0	0.8	C33V1123-60****
0.015	17.5	14.5	8.5	15.0	0.8	C33V1153-60****
0.018	17.5	16.0	10.0	15.0	0.8	C33V1183-60****
0.022	17.5	19.0	11.0	15.0	0.8	C33V1223-60****
0.0068	26.5	15.0	6.0	22.5	0.8	C33V1682-90****
0.0082	26.5	15.0	6.0	22.5	0.8	C33V1822-90****
0.010	26.5	15.0	6.0	22.5	0.8	C33V1103-90****
0.012	26.5	15.0	6.0	22.5	0.8	C33V1123-90****
0.015	26.5	15.0	6.0	22.5	0.8	C33V1153-90****
0.018	26.5	16.0	7.0	22.5	0.8	C33V1183-90****
0.022	26.5	17.0	8.5	22.5	0.8	C33V1223-90****
0.027	26.5	17.0	8.5	22.5	0.8	C33V1273-90****
0.033	26.5	18.5	10.0	22.5	0.8	C33V1333-90****
0.039	26.5	18.5	10.0	22.5	0.8	C33V1393-90****
0.047	26.5	22.0	12.0	22.5	0.8	C33V1473-90****
0.056	26.5	22.0	12.0	22.5	0.8	C33V1563-90****

900Vac						
C _N (μF)	W	H	T	P	d	Part number
0.00056	17.5	11.0	5.0	15.0	0.8	C33X1561-60****
0.00068	17.5	11.0	5.0	15.0	0.8	C33X1681-60****
0.00082	17.5	11.0	5.0	15.0	0.8	C33X1821-60****
0.0010	17.5	11.0	5.0	15.0	0.8	C33X1102-60****
0.0012	17.5	11.0	5.0	15.0	0.8	C33X1122-60****
0.0015	17.5	11.0	5.0	15.0	0.8	C33X1152-60****
0.0018	17.5	11.0	5.0	15.0	0.8	C33X1182-60****
0.0022	17.5	11.0	5.0	15.0	0.8	C33X1222-60****
0.0027	17.5	11.0	5.0	15.0	0.8	C33X1272-60****
0.0033	17.5	11.0	5.0	15.0	0.8	C33X1332-60****
0.0039	17.5	12.0	6.0	15.0	0.8	C33X1392-60****
0.0047	17.5	12.0	6.0	15.0	0.8	C33X1472-60****
0.0056	17.5	12.0	6.0	15.0	0.8	C33X1562-60****
0.0068	17.5	13.5	7.5	15.0	0.8	C33X1682-60****
0.0082	17.5	13.5	7.5	15.0	0.8	C33X1822-60****
0.010	17.5	14.5	8.5	15.0	0.8	C33X1103-60****
0.012	17.5	16.0	10.0	15.0	0.8	C33X1123-60****
0.015	17.5	16.0	10.0	15.0	0.8	C33X1153-60****
0.018	17.5	19.0	11.0	15.0	0.8	C33X1183-60****
0.0022	26.5	15.0	6.0	22.5	0.8	C33X1222-90****
0.0027	26.5	15.0	6.0	22.5	0.8	C33X1272-90****
0.0033	26.5	15.0	6.0	22.5	0.8	C33X1332-90****
0.0039	26.5	15.0	6.0	22.5	0.8	C33X1392-90****
0.0047	26.5	15.0	6.0	22.5	0.8	C33X1472-90****
0.0056	26.5	15.0	6.0	22.5	0.8	C33X1562-90****
0.0068	26.5	15.0	6.0	22.5	0.8	C33X1682-90****
0.0082	26.5	15.0	6.0	22.5	0.8	C33X1822-90****
0.010	26.5	16.0	7.0	22.5	0.8	C33X1103-90****
0.012	26.5	16.0	7.0	22.5	0.8	C33X1123-90****
0.015	26.5	17.0	8.5	22.5	0.8	C33X1153-90****
0.018	26.5	18.5	10.0	22.5	0.8	C33X1183-90****
0.022	26.5	18.5	10.0	22.5	0.8	C33X1223-90****
0.027	26.5	22.0	12.0	22.5	0.8	C33X1273-90****
0.033	26.5	22.0	12.0	22.5	0.8	C33X1333-90****

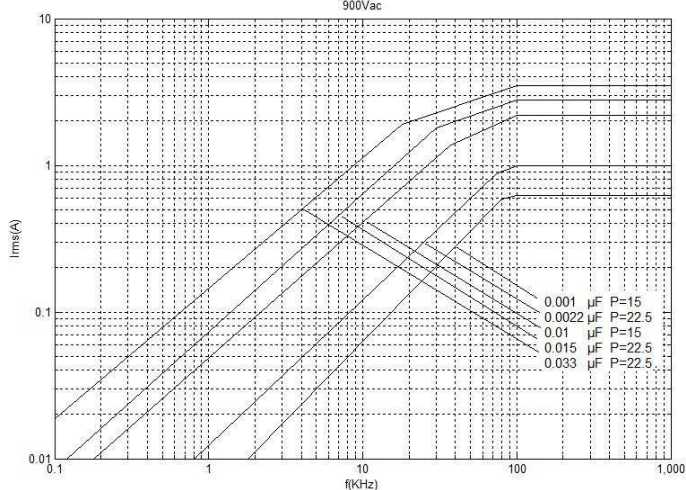
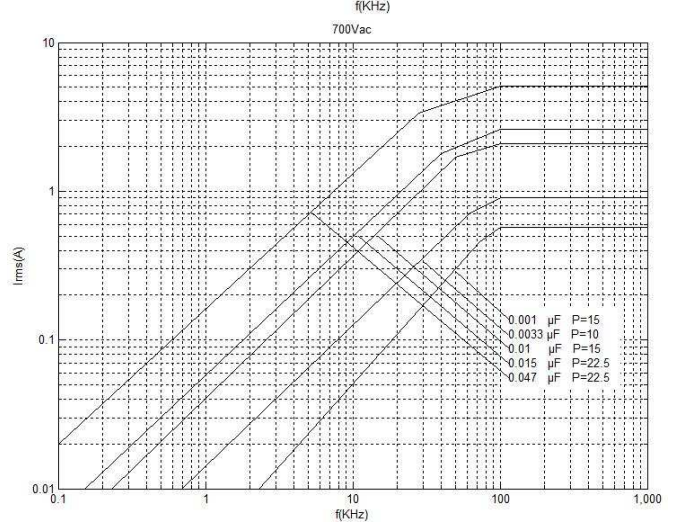
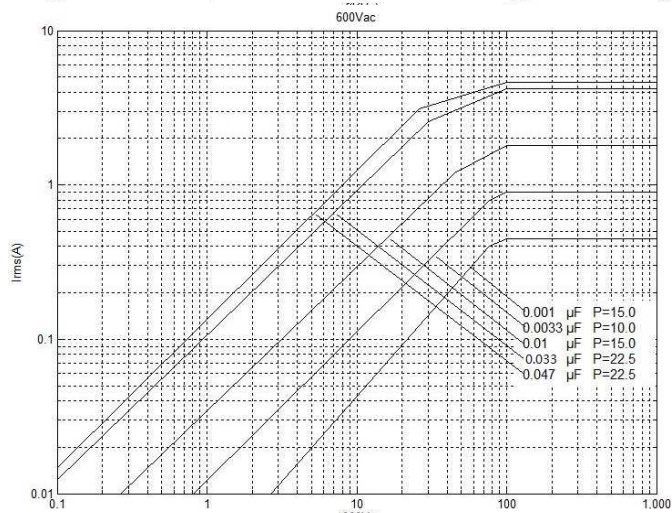
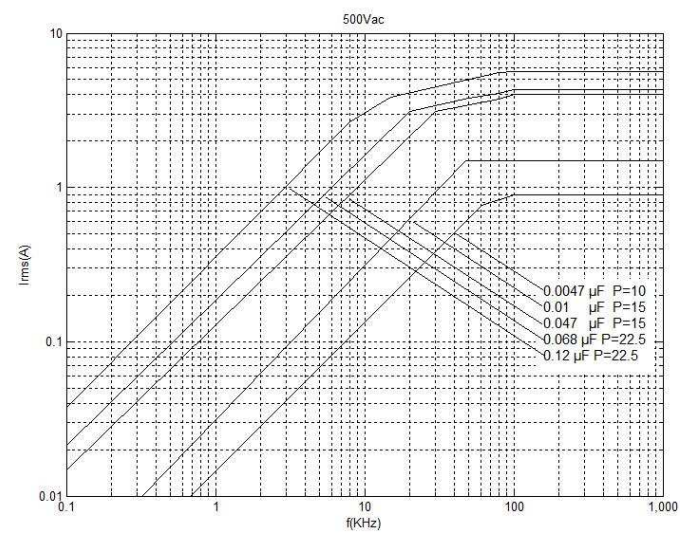
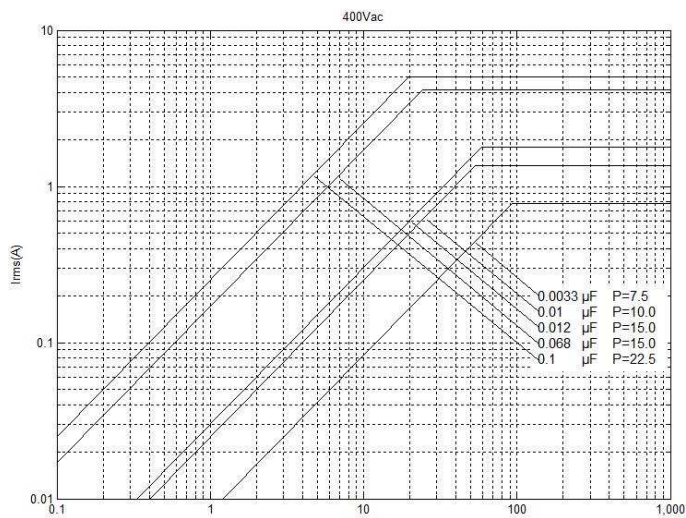
Note: 1. “-” =capacitance tolerance code, K=±10%,J=±5%, H=±3%
2. “****” =lead form and packing code (refer to table 1)

■ Max voltage(Vr.m.s)versus frequency



Note: sinusoidal wave-form, environment temperature $\leq 85^{\circ}\text{C}$, internal temperature rise $\Delta T=10^{\circ}\text{C}$, p (pitch) in mm..

■ Max current(Ir.m.s)versus frequency



Note: sinusoidal wave-form, environment temperature $\leq 85^{\circ}\text{C}$, internal temperature rise $\Delta T=10^{\circ}\text{C}$, p (pitch) in mm.

■ Test Method And Performance

No.	Item		Performance	Test method(IEC 60384-17)
1	Solderability		Good quality of tinning	Solder temperature: 245°C ±5°C Immersion time: 2.0s±0.5s
2	Initial measurement		Capacitance Tgδ: 1kHz, C>1.0μF 10kHz, C≤1.0μF	
	Terminal strength (straight lead)		There shall be no visible damage	Tense: 0.50<d≤0.80, 10N 0.80<d≤1.25, 20N Bend: 0.50<d≤0.80, 5N 0.80<d≤1.25, 10N The terminals shall be bent 2 times in each direction
	Resistance to solder heat		There shall be no visible damage, legible marking	Solder temperature: 260°C±5°C Immersion time: 10s±1s
	Final measurement		ΔC/C ≤±3%(relative to the initial value) Increase of tgδ: ≤0.004 (10kHz, C≤1.0μF) ≤0.004 (1kHz, C>1.0μF)	
3	Initial measurement		Capacitance Tgδ: 1kHz, C>1.0μF 10kHz, C≤1.0μF	
	Rapid change of temperature		There shall be no evidence of deterioration.	θ _A =-55°C, θ _B =+125°C 5 cycles Duration: t=30min
	Vibration(straight lead)		There shall be no evidence of deterioration.	Amplitude 0.75mm or acceleration 98m/s ² (whichever is the smaller severity), f: 10Hz to 500Hz. Three directions, 2h for each direction, total 6h.
	Bump(straight lead)		There shall be no evidence of deterioration.	4 000 times, Acceleration: 390m/s ² , Pulse duration, 6ms
	Final measurement		There shall be no visible damage ΔC/C ≤±3%(relative to the initial value) Increase of tgδ: ≤0.004 (10kHz, C≤1.0μF) ≤0.004 (1kHz, C>1.0μF)	
4	climate sequence	Initial measurement	Capacitance Tgδ: 1kHz, C>1.0μF 10kHz, C≤1.0μF	
		Dry heat		+125°C, 16h
		Damp heat, Cyclic		Test Db, Severity: b, the first cycle
		Cold		-55°C, 2h
		Low air pressure	There shall be no permanent breakdown, flashover or other harmful deformation when applying U _R at the last 1 minute.	15°C~35°C, 8.5kPa, 1h
		Damp heat, cyclic other	Applying U _R for 1 minute after 15 minutes the test finished .	Test Db, Severity b, the other cycles,

No.	Item		Performance	Test method(IEC 60384-17)
4	climate sequence (continue)	Final measurement	There shall be no visible damage, legible marking $\Delta C/C \leq \pm 5\%$ (relative to the initial value) Increase of $\tan \delta$: ≤ 0.005 (10kHz, $C \leq 1.0 \mu F$) ≤ 0.005 (1kHz, $C > 1.0 \mu F$) I.R.: $\geq 50\%$ of the rated value	
5	Damp heat steady state		There shall be no visible damage, legible marking $\Delta C/C \leq \pm 5\%$ (relative to the initial value) Increase of $\tan \delta$: ≤ 0.002 (1kHz) I.R.: $\geq 50\%$ of the rated value IR: $\geq 50\%$ of the rated value	Temperature: $40^\circ C \pm 2^\circ C$ Humidity: $93 \pm 3\% RH$ Duration: 56 days
6	Endurance		There shall be no visible damage, legible marking $\Delta C/C \leq \pm 5\%$ (relative to the initial value) Increase of $\tan \delta$: ≤ 0.0015 (10kHz, $C \leq 1.0 \mu F$) ≤ 0.0015 (1kHz, $C > 1.0 \mu F$) I.R.: $\geq 50\%$ of the rated value	$105^\circ C$, 2 000h, $1.25 \times U_C$ at 50Hz, $U_C = U_R$ or $125^\circ C$, 2000h, $1.25 \times U_C$ at 50Hz, $U_C = 0.75 U_R$
7	Charging and discharging		$\Delta C/C \leq \pm 5\%$ (relative to the initial value) Increase of $\tan \delta$: ≤ 0.005 (10kHz, $C \leq 1.0 \mu F$) ≤ 0.005 (1kHz, $C > 1.0 \mu F$) I.R.: $\geq 50\%$ of the rated value	Times: 10 000 Duration of charging: 0.5s Duration of discharging: 0.5s Charging voltage: rated voltage U_R Charging resistance: $220/C_N (\Omega)$ Discharging resistance: $U_R \div C_N \div dv/dt (\Omega)$ C_N : rated capacitance (μF) dv/dt value: see dimensions table

■ Marking (For example):

 102J 600~

 MKP23
103J 600~

$P \leq 10mm$

$P > 10mm$

Marking Introduction:

	Brand	MKP23	Type
600~	Rated voltage	102 103	Rated capacitance
J	Tolerance	-	-

■ Taping specification for box-type capacitors

▲ Outline Drawing

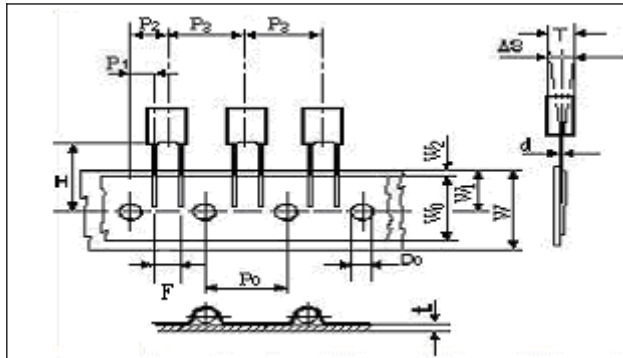


Fig.1 P=5.0/7.5mm

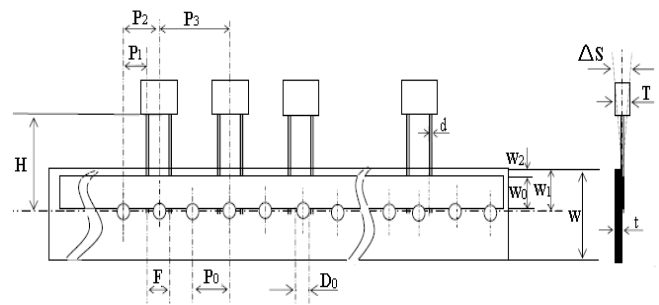


Fig.2 P=10.0/15.0mm

▲ Taping Dimensions(mm)

Technology index title	Code	Dimensions				Tolerance
		P=5.0	P=7.5	P=10.0	P=15.0	
Taping type	—	Fig 1	Fig 1	Fig2	Fig 2	—
Part number Digit12-15	Ammo-pack	A201	A301	A405	A605	
Taping pitch	P_3	12.7	12.7	25.4	25.4	± 1.0
Feed hole pitch	P_0	12.7	12.7	12.7	12.7	± 0.3
Center of wire	P_1	3.85	2.6	7.7	5.2	± 0.7
Center of body	P_2	6.35	6.35	12.7	12.7	± 1.3
Pitch of taping wire	F^{**}	5.0	7.5	10.0	15.0	+0.6 -0.1
Component alignment	ΔS	0	0	0	0	± 2.0
Height of component from tape center	H^{***}	18.5	18.5	18.5	18.5	± 0.5
Carrier tape width	W	18.0	18.0	18.0	18.0	+1.0 -0.5
Hold down tape width	W_0	6min	10min	10min	10min	—
Hole position	W_1	9.0	9.0	9.0	9.0	± 0.5
Hold down tape position	W_2	3max	3max	3max	3max	—
Feed hole dia.	D_0	4.0	4.0	4.0	4.0	± 0.2
Tape thickness	t	0.7	0.7	0.7	0.7	± 0.2

Note: * $P_0=15\text{mm}$ is also available;

**F can be other lead spacing;

***H=16.5mm is available;

■ Soldering suggestions

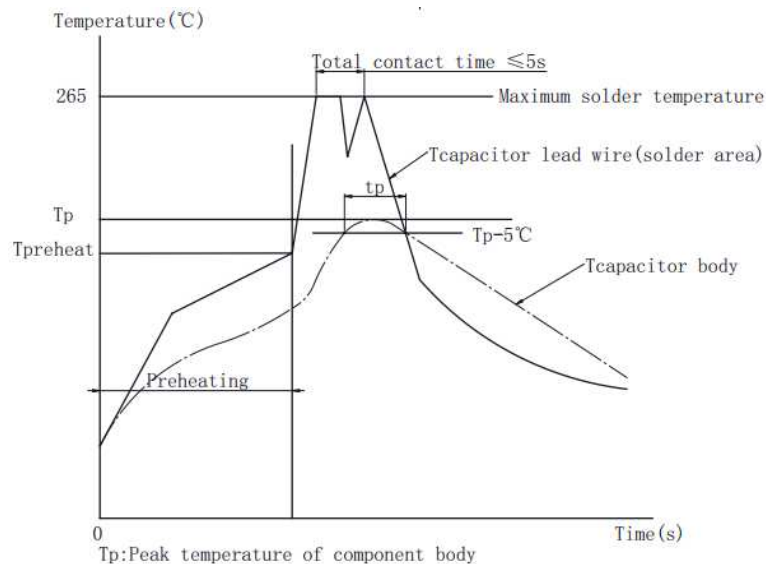
▲ Manual soldering

Max. temperature: 350°C, time: 3s

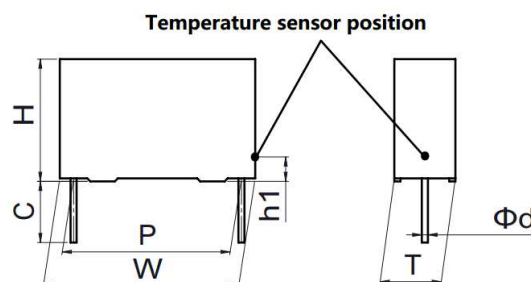
▲ Wave soldering

There are many factors affecting the heating of film capacitor during the wave soldering process, such as: preheating temperature, preheating time, soldering temperature, soldering time, other heat sources influence and so on.

The typical soldering profile is as below:



▲ Because overheating could damage the capacitor, we recommend paying attention to the maximum capacitor temperature and heating time, use temperature sensor to detect the maximum capacitor body temperature.

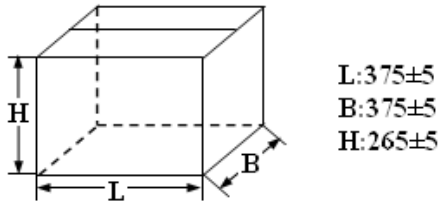


Note: If re-working or dipping twice is necessary, it should be done after the capacitor returns to the normal temperature.

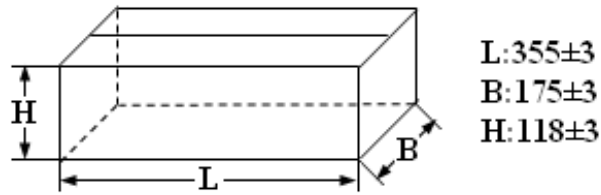
Temperature sensor position (Tcapacitor body)	The capacitor body surface of lead side, capacitor height position from PCB: h1=2~3mm		
Maximum capacitor body temperature Tp(°C)	OPP film P≤15mm	OPP film P>15mm	PET film
	115	120	125
Maximum capacitor lead wire temperature (°C)	265	265	265
Maximum capacitor body heating time tp=Tp-5°C	30s		

Packing box sizes(mm)(example)

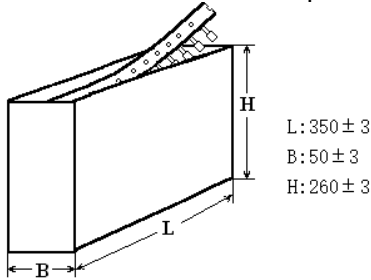
1. Out packing box for bulk



2. Inner packing box for bulk



3. Box sizes for Ammo-pack



Storage conditions

▲ It must be noted that the solderability of the terminals may be deteriorated when stored in an atmosphere filled with moisture, dust, or a reactive oxidizing gas.(hydrogen chloride, hydrogen sulfide, sulfuric acid,etc.)

▲ It shouldn't be located in particularly high temperature and high humidity, it must submit to the following conditions(unchanging primal package):

Temperature: -40°C to 35°C

Humidity: Average per year $\leq 70\% \text{RH}$;

For 30 full days randomly distributed throughout the year $\leq 80\% \text{RH}$

Storage time for tinned lead wire: (from the date marked on the capacitor's body or the label glued to the package) :

Bulk(packed with plastic bag): ≤ 24 months ;

Taping and line up: ≤ 12 months