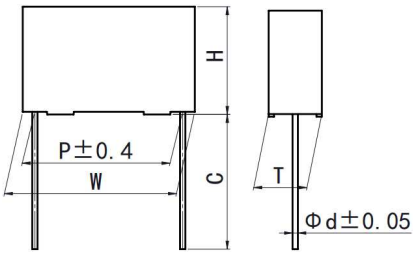
Version history

Current version	Date	Author	Change description

Box-type metallized polyester film capacitor (Stacked version)

■ Outline Drawing



W±0.4, H±0.4, T±0.4

■ Features

- Metallized polyester film, stacked construction
- Plastic case（UL94 V-0），Epoxy resin sealing
- High dv/dt ability

■ Typical Applications:

- By-passing, blocking, coupling, decoupling,
- Pulse logic, timing, compact fluorescent lamps.
- Inverter for LCD monitors, automotive DC motor suppression

■ Specifications

Reference Standard	GB 7332(IEC 60384-2)		
Climatic Category	55/125/56		
Rated temperature	85℃		
Operating temperature	-55℃~125℃ (+85℃ to +125℃: decreasing factor 1.25% per ℃ for U_R)		
Rated Voltage	50/63V, 100V, 250V, 400V, 500V, 630V,700V		
Capacitance Range	0.0010μF ~ 2.2μF		
Capacitance Tolerance	±5%(J), ±10%(K), ±20%(M)		
Voltage Proof	1.4U_R(5s)		
Dissipation Factor	Frequency	C_N ≤ 0.1μF	C_N > 0.1μF
	1kHz	≤1.0%	≤1.0%
	10kHz	≤1.5%	≤1.5%
	100kHz	≤3.0%	-
Insulation Resistance	U_R>100V	≥3 0000MΩ, C_N≤0.33μF ≥10 000s, C_N>0.33μF	(20℃,100V,1min)
	U_R≤100V	≥15 000MΩ, C_N≤0.33μF ≥5 000s, 0.33μF<C_N≤1μF ≥1 000s, C_N >1μF	(20℃,10V,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 multiplying the right value with U_R/U.	U_R (V)	dV/dt (V/μs)	
		pattern I	pattern II
	50/63	250	75
	100	300	85
	250	400	100
	400	600	150
	500	700	200
	630	800	
	700	-	250

■ Part number system

The 15 digits part number is formed as follow:

C24 Pattern I (High performance)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C	2	4							2	0				

C24 Pattern II (Reduced size)

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

Digit 1 to 3 Series code

C24=CL23B

Digit 4 to 5 DC rated voltage

1H=50V 1J=63V 2A=100V 2E=250V

2G=400V 2H=500V 2J=630V 1V=700V

Digit 6 to 8 Rated capacitance value

For example : 103=10×10^3pF=0.01uF

Digit 9 Capacitance tolerance

J=±5%,K=±10%, M=±20%

Digit 10 Lead pitch

2=5.0

Digit 11 Internal use

S=pattern II

Digit 12 to 15 Lead form and packaging code

Table 1 lead dimensions and packaging code

Digit 12		Digit 13		Digit 14		Digit 15	
code	explanation	code	explanation	code	explanation	code	explanation
A	ammo-pack	2	F=5.0mm	0	straight	1	each cap. among two consecutive holes P3=12.7mm,H=18.5mm (For pitch=5.0mm)
C	straight lead "C" in the figure above	code	explanation			0	Length tolerance ±0.5mm Or standard length
		00	standard lead length (16mm~22mm)				
		45	lead length 4.5mm				
Note: Recommend short lead due to long lead could deform easily.							

■ Dimensions(mm)

Capacitor Thickness: T	≤3.5	>3.5
Dimension Tolerance (W, H, T)	±0.2	±0.4

Pattern II (Reduced size)

50Vdc (30Vac) /63Vdc (40Vac) #						
C_N (μF)	W	H	T	P	d	Part number
0.15	7.2	6.5	2.5	5.0	0.5	C241J154-2S****
0.18	7.2	6.5	2.5	5.0	0.5	C241J184-2S****
0.22	7.2	6.5	2.5	5.0	0.5	C241J224-2S****
0.27	7.2	6.5	2.5	5.0	0.5	C241J274-2S****
0.33	7.2	7.5	3.5	5.0	0.5	C241J334-2S****
0.39	7.2	7.5	3.5	5.0	0.5	C241J394-2S****
0.47	7.2	7.5	3.5	5.0	0.5	C241J474-2S****
0.56	7.2	9.5	4.5	5.0	0.6	C241J564-2S****
0.68	7.2	9.5	4.5	5.0	0.6	C241J684-2S****
0.82	7.2	9.5	4.5	5.0	0.6	C241J824-2S****
1.0	7.2	10.0	5.0	5.0	0.6	C241J105-2S****
1.5	7.2	11.0	6.0	5.0	0.6	C241J155-2S****
2.2	7.2	11.0	6.0	5.0	0.6	C241J225-2S****

100Vdc(63Vac)						
C_N (μF)	W	H	T	P	d	Part number
0.10	7.2	6.5	2.5	5.0	0.5	C242A104-2S****
0.12	7.2	6.5	2.5	5.0	0.5	C242A124-2S****
0.15	7.2	7.5	3.5	5.0	0.5	C242A154-2S****
0.18	7.2	7.5	3.5	5.0	0.5	C242A184-2S****
0.22	7.2	7.5	3.5	5.0	0.5	C242A224-2S****
0.27	7.2	9.5	4.5	5.0	0.6	C242A274-2S****
0.33	7.2	9.5	4.5	5.0	0.6	C242A334-2S****
0.39	7.2	9.5	4.5	5.0	0.6	C242A394-2S****
0.47	7.2	10.0	5.0	5.0	0.6	C242A474-2S****
0.56	7.2	10.0	5.0	5.0	0.6	C242A564-2S****
0.68	7.2	11.0	6.0	5.0	0.6	C242A684-2S****
0.82	7.2	11.0	6.0	5.0	0.6	C242A824-2S****
1.0	7.2	11.0	6.0	5.0	0.6	C242A105-2S****

250Vdc(140Vac)						
C_N (μF)	W	H	T	P	d	Part number
0.022	7.2	6.5	2.5	5.0	0.5	C242E223-2S****
0.027	7.2	6.5	2.5	5.0	0.5	C242E273-2S****
0.033	7.2	6.5	2.5	5.0	0.5	C242E333-2S****
0.039	7.2	7.5	3.5	5.0	0.5	C242E393-2S****
0.047	7.2	7.5	3.5	5.0	0.5	C242E473-2S****
0.056	7.2	7.5	3.5	5.0	0.5	C242E563-2S****
0.068	7.2	7.5	3.5	5.0	0.5	C242E683-2S****
0.082	7.2	9.5	4.5	5.0	0.6	C242E823-2S****
0.10	7.2	9.5	4.5	5.0	0.6	C242E104-2S****
0.12	7.2	9.5	4.5	5.0	0.6	C242E124-2S****
0.15	7.2	10.0	5.0	5.0	0.6	C242E154-2S****
0.18	7.2	11.0	6.0	5.0	0.6	C242E184-2S****
0.22	7.2	11.0	6.0	5.0	0.6	C242E224-2S****

400Vdc (160Vac)						
C_N (μF)	W	H	T	P	d	Part number
0.0056	7.2	6.5	2.5	5.0	0.5	C242G562-2S****
0.0068	7.2	6.5	2.5	5.0	0.5	C242G682-2S****
0.0082	7.2	6.5	2.5	5.0	0.5	C242G822-2S****
0.010	7.2	6.5	2.5	5.0	0.5	C242G103-2S****
0.012	7.2	6.5	2.5	5.0	0.5	C242G123-2S****
0.015	7.2	7.5	3.5	5.0	0.5	C242G153-2S****
0.018	7.2	7.5	3.5	5.0	0.5	C242G183-2S****
0.022	7.2	7.5	3.5	5.0	0.5	C242G223-2S****
0.027	7.2	7.5	3.5	5.0	0.5	C242G273-2S****
0.033	7.2	9.5	4.5	5.0	0.6	C242G333-2S****
0.039	7.2	9.5	4.5	5.0	0.6	C242G393-2S****
0.047	7.2	9.5	4.5	5.0	0.6	C242G473-2S****
0.051	7.2	10.0	5.0	5.0	0.6	C242G513-2S****
0.056	7.2	11.0	6.0	5.0	0.6	C242G563-2S****
0.068	7.2	11.0	6.0	5.0	0.6	C242G683-2S****
0.082	7.2	11.0	6.0	5.0	0.6	C242G823-2S****
0.10	7.2	11.0	6.0	5.0	0.6	C242G104-2S****

500/630Vdc(220Vac) #						
C_N (μF)	W	H	T	P	d	Part number
0.0018	7.2	6.5	2.5	5.0	0.5	C242J182-2S****
0.0022	7.2	6.5	2.5	5.0	0.5	C242J222-2S****
0.0027	7.2	6.5	2.5	5.0	0.5	C242J272-2S****
0.0033	7.2	6.5	2.5	5.0	0.5	C242J332-2S****
0.0039	7.2	6.5	2.5	5.0	0.5	C242J392-2S****
0.0047	7.2	6.5	2.5	5.0	0.5	C242J472-2S****
0.0056	7.2	7.5	3.5	5.0	0.5	C242J562-2S****
0.0068	7.2	7.5	3.5	5.0	0.5	C242J682-2S****
0.0082	7.2	7.5	3.5	5.0	0.5	C242J822-2S****
0.010	7.2	7.5	3.5	5.0	0.5	C242J103-2S****
0.012	7.2	9.5	4.5	5.0	0.6	C242J123-2S****
0.015	7.2	9.5	4.5	5.0	0.6	C242J153-2S****
0.018	7.2	9.5	4.5	5.0	0.6	C242J183-2S****
0.022	7.2	10.0	5.0	5.0	0.6	C242J223-2S****
0.027	7.2	11.0	6.0	5.0	0.6	C242J273-2S****
0.033	7.2	11.0	6.0	5.0	0.6	C242J333-2S****

700V dc (250Vac)						
C_N (μF)	W	H	T	P	d	Part number
0.0010	7.2	6.5	2.5	5.0	0.5	C241V102-2S****
0.0012	7.2	6.5	2.5	5.0	0.5	C241V122-2S****
0.0015	7.2	6.5	2.5	5.0	0.5	C241V152-2S****
0.0018	7.2	6.5	2.5	5.0	0.5	C241V182-2S****
0.0022	7.2	6.5	2.5	5.0	0.5	C241V222-2S****
0.0027	7.2	6.5	2.5	5.0	0.5	C241V272-2S****
0.0033	7.2	7.5	3.5	5.0	0.5	C241V332-2S****
0.0039	7.2	7.5	3.5	5.0	0.5	C241V392-2S****
0.0047	7.2	7.5	3.5	5.0	0.5	C241V472-2S****
0.0056	7.2	7.5	3.5	5.0	0.5	C241V562-2S****
0.0068	7.2	7.5	3.5	5.0	0.5	C241V682-2S****
0.0082	7.2	9.5	4.5	5.0	0.6	C241V822-2S****
0.010	7.2	9.5	4.5	5.0	0.6	C241V103-2S****
0.012	7.2	9.5	4.5	5.0	0.6	C241V123-2S****
0.015	7.2	10.0	5.0	5.0	0.6	C241V153-2S****
0.018	7.2	11.0	6.0	5.0	0.6	C241V183-2S****
0.022	7.2	11.0	6.0	5.0	0.6	C241V223-2S****

Note: 1. "-" =capacitance tolerance code, M=±20%,K=±10%,J=±5%
2. "****" =lead form and packing code (refer to table 1).
3. "#" when the rated voltage is 50Vdc,the digit 4~5 is 1H.

Pattern I (High performance)

50Vdc (30Vac) /63Vdc (40Vac) #						
C_N (μF)	W	H	T	P	d	Part number
0.0010	7.2	6.5	2.5	5.0	0.5	C241J102-20****
0.0012	7.2	6.5	2.5	5.0	0.5	C241J122-20****
0.0015	7.2	6.5	2.5	5.0	0.5	C241J152-20****
0.0018	7.2	6.5	2.5	5.0	0.5	C241J182-20****
0.0022	7.2	6.5	2.5	5.0	0.5	C241J222-20****
0.0027	7.2	6.5	2.5	5.0	0.5	C241J272-20****
0.0033	7.2	6.5	2.5	5.0	0.5	C241J332-20****
0.0039	7.2	6.5	2.5	5.0	0.5	C241J392-20****
0.0047	7.2	6.5	2.5	5.0	0.5	C241J472-20****
0.0056	7.2	6.5	2.5	5.0	0.5	C241J562-20****
0.0068	7.2	6.5	2.5	5.0	0.5	C241J682-20****
0.0082	7.2	6.5	2.5	5.0	0.5	C241J822-20****
0.010	7.2	6.5	2.5	5.0	0.5	C241J103-20****
0.012	7.2	6.5	2.5	5.0	0.5	C241J123-20****
0.015	7.2	6.5	2.5	5.0	0.5	C241J153-20****
0.018	7.2	6.5	2.5	5.0	0.5	C241J183-20****
0.022	7.2	6.5	2.5	5.0	0.5	C241J223-20****
0.027	7.2	6.5	2.5	5.0	0.5	C241J273-20****
0.033	7.2	6.5	2.5	5.0	0.5	C241J333-20****
0.039	7.2	6.5	2.5	5.0	0.5	C241J393-20****
0.047	7.2	6.5	2.5	5.0	0.5	C241J473-20****
0.056	7.2	6.5	2.5	5.0	0.5	C241J563-20****
0.068	7.2	6.5	2.5	5.0	0.5	C241J683-20****
0.082	7.2	6.5	2.5	5.0	0.5	C241J823-20****
0.10	7.2	6.5	2.5	5.0	0.5	C241J104-20****
0.12	7.2	6.5	2.5	5.0	0.5	C241J124-20****
0.15	7.2	7.5	3.5	5.0	0.5	C241J154-20****
0.18	7.2	7.5	3.5	5.0	0.5	C241J184-20****
0.22	7.2	7.5	3.5	5.0	0.5	C241J224-20****
0.27	7.2	9.5	4.5	5.0	0.6	C241J274-20****
0.33	7.2	9.5	4.5	5.0	0.6	C241J334-20****
0.39	7.2	9.5	4.5	5.0	0.6	C241J394-20****
0.47	7.2	10.0	5.0	5.0	0.6	C241J474-20****
0.56	7.2	10.0	5.0	5.0	0.6	C241J564-20****
0.68	7.2	11.0	6.0	5.0	0.6	C241J684-20****
0.82	7.2	11.0	6.0	5.0	0.6	C241J824-20****
1.0	7.2	11.0	6.0	5.0	0.6	C241J105-20****

100Vdc (63Vac)						
C_N (μF)	W	H	T	P	d	Part number
0.0010	7.2	6.5	2.5	5.0	0.5	C242A102-20****
0.0012	7.2	6.5	2.5	5.0	0.5	C242A122-20****
0.0015	7.2	6.5	2.5	5.0	0.5	C242A152-20****
0.0018	7.2	6.5	2.5	5.0	0.5	C242A182-20****
0.0022	7.2	6.5	2.5	5.0	0.5	C242A222-20****
0.0027	7.2	6.5	2.5	5.0	0.5	C242A272-20****
0.0033	7.2	6.5	2.5	5.0	0.5	C242A332-20****
0.0039	7.2	6.5	2.5	5.0	0.5	C242A392-20****
0.0047	7.2	6.5	2.5	5.0	0.5	C242A472-20****
0.0056	7.2	6.5	2.5	5.0	0.5	C242A562-20****
0.0068	7.2	6.5	2.5	5.0	0.5	C242A682-20****
0.0082	7.2	6.5	2.5	5.0	0.5	C242A822-20****
0.010	7.2	6.5	2.5	5.0	0.5	C242A103-20****
0.012	7.2	6.5	2.5	5.0	0.5	C242A123-20****
0.015	7.2	6.5	2.5	5.0	0.5	C242A153-20****
0.018	7.2	6.5	2.5	5.0	0.5	C242A183-20****
0.022	7.2	6.5	2.5	5.0	0.5	C242A223-20****
0.027	7.2	6.5	2.5	5.0	0.5	C242A273-20****
0.033	7.2	6.5	2.5	5.0	0.5	C242A333-20****
0.039	7.2	6.5	2.5	5.0	0.5	C242A393-20****
0.047	7.2	6.5	2.5	5.0	0.5	C242A473-20****
0.056	7.2	6.5	2.5	5.0	0.5	C242A563-20****
0.068	7.2	6.5	2.5	5.0	0.5	C242A683-20****
0.082	7.2	6.5	2.5	5.0	0.5	C242A823-20****
0.10	7.2	7.5	3.5	5.0	0.5	C242A104-20****
0.12	7.2	9.5	4.5	5.0	0.6	C242A124-20****
0.15	7.2	9.5	4.5	5.0	0.6	C242A154-20****
0.18	7.2	9.5	4.5	5.0	0.6	C242A184-20****
0.22	7.2	10.0	5.0	5.0	0.6	C242A224-20****
0.27	7.2	10.0	5.0	5.0	0.6	C242A274-20****
0.33	7.2	11.0	6.0	5.0	0.6	C242A334-20****
0.39	7.2	11.0	6.0	5.0	0.6	C242A394-20****
0.47	7.2	11.0	6.0	5.0	0.6	C242A474-20****
0.56	7.2	11.0	6.0	5.0	0.6	C242A564-20****

250V dc (160Vac)						
C_N (μF)	W	H	T	P	d	Part number
0.0010	7.2	6.5	2.5	5.0	0.5	C242E102-20****
0.0012	7.2	6.5	2.5	5.0	0.5	C242E122-20****
0.0015	7.2	6.5	2.5	5.0	0.5	C242E152-20****
0.0018	7.2	6.5	2.5	5.0	0.5	C242E182-20****
0.0022	7.2	6.5	2.5	5.0	0.5	C242E222-20****
0.0027	7.2	6.5	2.5	5.0	0.5	C242E272-20****
0.0033	7.2	6.5	2.5	5.0	0.5	C242E332-20****
0.0039	7.2	6.5	2.5	5.0	0.5	C242E392-20****
0.0047	7.2	6.5	2.5	5.0	0.5	C242E472-20****
0.0056	7.2	6.5	2.5	5.0	0.5	C242E562-20****
0.0068	7.2	6.5	2.5	5.0	0.5	C242E682-20****
0.0082	7.2	6.5	2.5	5.0	0.5	C242E822-20****
0.010	7.2	6.5	2.5	5.0	0.5	C242E103-20****
0.012	7.2	6.5	2.5	5.0	0.5	C242E123-20****
0.015	7.2	6.5	2.5	5.0	0.5	C242E153-20****
0.018	7.2	6.5	2.5	5.0	0.5	C242E183-20****
0.022	7.2	7.5	3.5	5.0	0.5	C242E223-20****
0.027	7.2	7.5	3.5	5.0	0.5	C242E273-20****
0.033	7.2	7.5	3.5	5.0	0.5	C242E333-20****
0.039	7.2	7.5	3.5	5.0	0.5	C242E393-20****
0.047	7.2	9.5	4.5	5.0	0.6	C242E473-20****
0.056	7.2	9.5	4.5	5.0	0.6	C242E563-20****
0.068	7.2	9.5	4.5	5.0	0.6	C242E683-20****
0.082	7.2	10.0	5.0	5.0	0.6	C242E823-20****
0.10	7.2	10.0	5.0	5.0	0.6	C242E104-20****
0.12	7.2	11.0	6.0	5.0	0.6	C242E124-20****
0.15	7.2	11.0	6.0	5.0	0.6	C242E154-20****

Note: 1. "-" =capacitance tolerance code, M=±20%,K=±10%,J=±5%
2. "****" =lead form and packing code (refer to table 1).
3. "#" when the rated voltage is 50Vdc,the digit 4~5 is 1H.

Pattern I (High performance)

400Vdc (200Vac)						
C_N (μF)	W	H	T	P	d	Part number
0.0010	7.2	6.5	2.5	5.0	0.5	C242G102-20****
0.0012	7.2	6.5	2.5	5.0	0.5	C242G122-20****
0.0015	7.2	6.5	2.5	5.0	0.5	C242G152-20****
0.0018	7.2	6.5	2.5	5.0	0.5	C242G182-20****
0.0022	7.2	6.5	2.5	5.0	0.5	C242G222-20****
0.0027	7.2	6.5	2.5	5.0	0.5	C242G272-20****
0.0033	7.2	6.5	2.5	5.0	0.5	C242G332-20****
0.0039	7.2	6.5	2.5	5.0	0.5	C242G392-20****
0.0047	7.2	6.5	2.5	5.0	0.5	C242G472-20****
0.0056	7.2	7.5	3.5	5.0	0.5	C242G562-20****
0.0068	7.2	7.5	3.5	5.0	0.5	C242G682-20****
0.0082	7.2	7.5	3.5	5.0	0.5	C242G822-20****
0.010	7.2	7.5	3.5	5.0	0.5	C242G103-20****
0.012	7.2	9.5	4.5	5.0	0.6	C242G123-20****
0.015	7.2	9.5	4.5	5.0	0.6	C242G153-20****
0.018	7.2	9.5	4.5	5.0	0.6	C242G183-20****
0.022	7.2	10.0	5.0	5.0	0.6	C242G223-20****
0.027	7.2	11.0	6.0	5.0	0.6	C242G273-20****
0.033	7.2	11.0	6.0	5.0	0.6	C242G333-20****
0.039	7.2	11.0	6.0	5.0	0.6	C242G393-20****
0.047	7.2	11.0	6.0	5.0	0.6	C242G473-20****

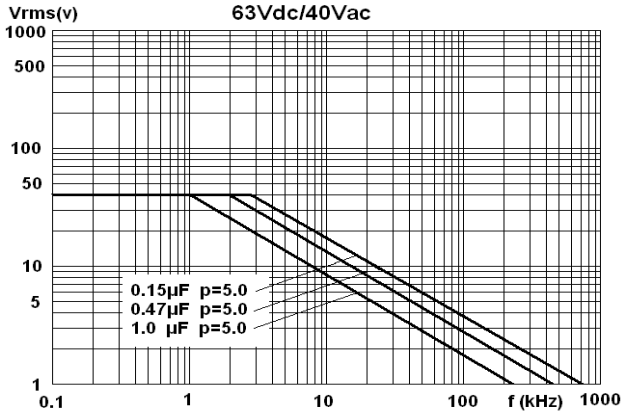
500Vdc (220Vac)						
C_N (μF)	W	H	T	P	d	Part number
0.0010	7.2	6.5	2.5	5.0	0.5	C242H102-20****
0.0012	7.2	6.5	2.5	5.0	0.5	C242H122-20****
0.0015	7.2	6.5	2.5	5.0	0.5	C242H152-20****
0.0018	7.2	6.5	2.5	5.0	0.5	C242H182-20****
0.0022	7.2	6.5	2.5	5.0	0.5	C242H222-20****
0.0027	7.2	6.5	2.5	5.0	0.5	C242H272-20****
0.0033	7.2	7.5	3.5	5.0	0.5	C242H332-20****
0.0039	7.2	7.5	3.5	5.0	0.5	C242H392-20****
0.0047	7.2	7.5	3.5	5.0	0.5	C242H472-20****
0.0056	7.2	7.5	3.5	5.0	0.5	C242H562-20****
0.0068	7.2	9.5	4.5	5.0	0.6	C242H682-20****
0.0082	7.2	9.5	4.5	5.0	0.6	C242H822-20****
0.010	7.2	9.5	4.5	5.0	0.6	C242H103-20****
0.012	7.2	9.5	4.5	5.0	0.6	C242H123-20****
0.015	7.2	10.0	5.0	5.0	0.6	C242H153-20****
0.018	7.2	11.0	6.0	5.0	0.6	C242H183-20****
0.022	7.2	11.0	6.0	5.0	0.6	C242H223-20****
0.027	7.2	11.0	6.0	5.0	0.6	C242H273-20****

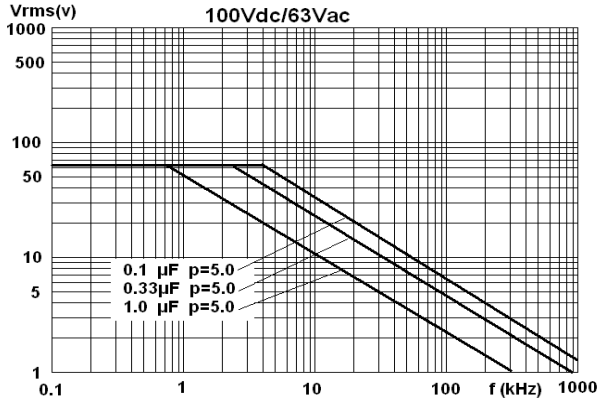
630V dc (220Vac)						
C_N (μF)	W	H	T	P	d	Part number
0.0010	7.2	6.5	2.5	5.0	0.5	C242J102-20****
0.0012	7.2	6.5	2.5	5.0	0.5	C242J122-20****
0.0015	7.2	6.5	2.5	5.0	0.5	C242J152-20****
0.0018	7.2	7.5	3.5	5.0	0.5	C242J182-20****
0.0022	7.2	7.5	3.5	5.0	0.5	C242J222-20****
0.0027	7.2	7.5	3.5	5.0	0.5	C242J272-20****
0.0033	7.2	7.5	3.5	5.0	0.5	C242J332-20****
0.0039	7.2	7.5	3.5	5.0	0.5	C242J392-20****
0.0047	7.2	9.5	4.5	5.0	0.6	C242J472-20****
0.0056	7.2	9.5	4.5	5.0	0.6	C242J562-20****
0.0068	7.2	9.5	4.5	5.0	0.6	C242J682-20****
0.0082	7.2	9.5	4.5	5.0	0.6	C242J822-20****
0.010	7.2	10.0	5.0	5.0	0.6	C242J103-20****
0.012	7.2	11.0	6.0	5.0	0.6	C242J123-20****
0.015	7.2	11.0	6.0	5.0	0.6	C242J153-20****
0.018	7.2	11.0	6.0	5.0	0.6	C242J183-20****

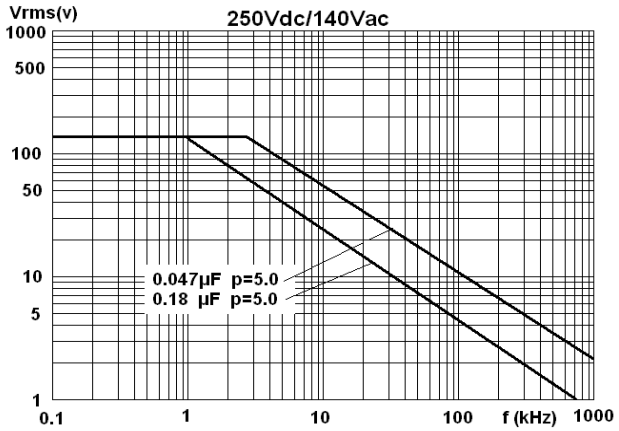
Note: 1. "-" =capacitance tolerance code, M=±20%,K=±10%,J=±5%
2. "****" =lead form and packing code (refer to table 1).

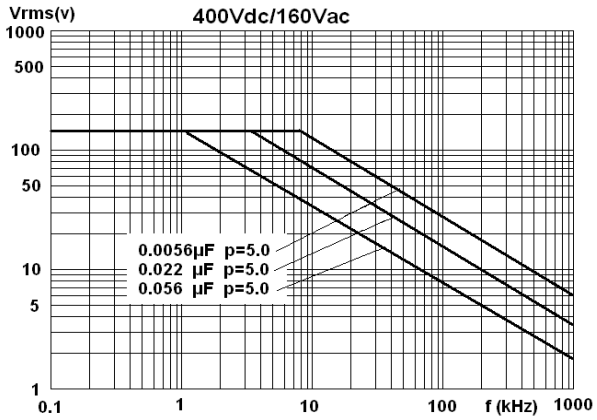
■ MAX. VOLTAGE(Vr.m.s) VERSUS FREQUENCY

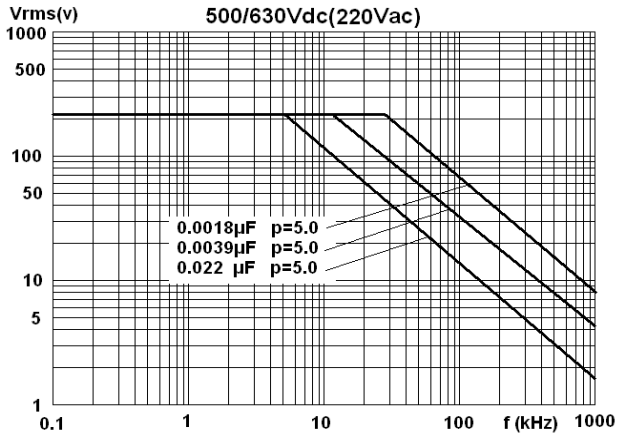
Pattern II (Reduced sized)

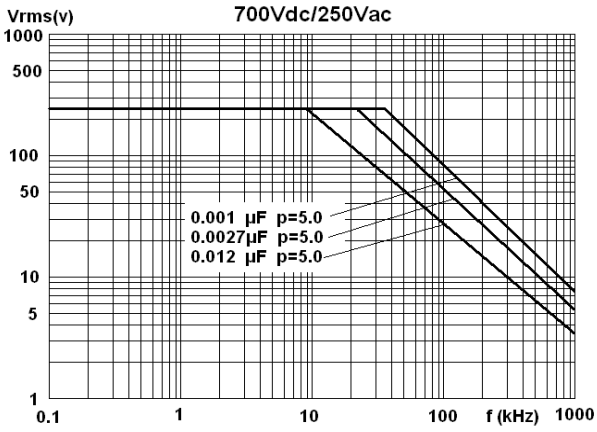








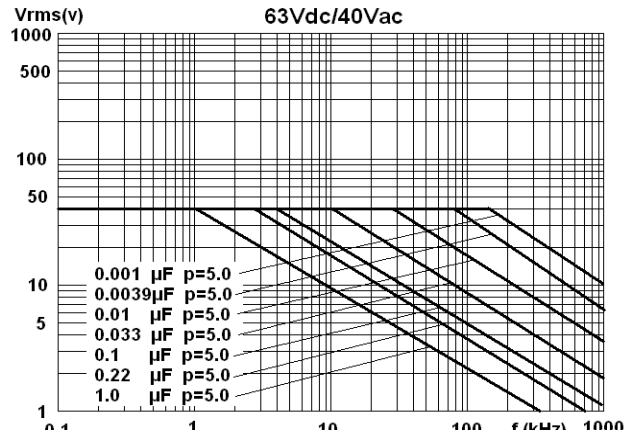


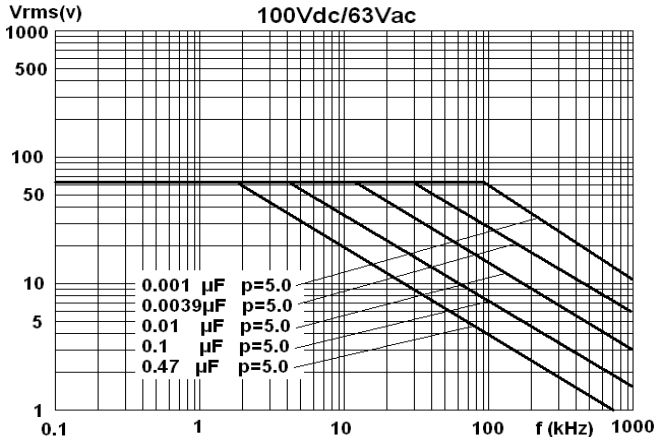


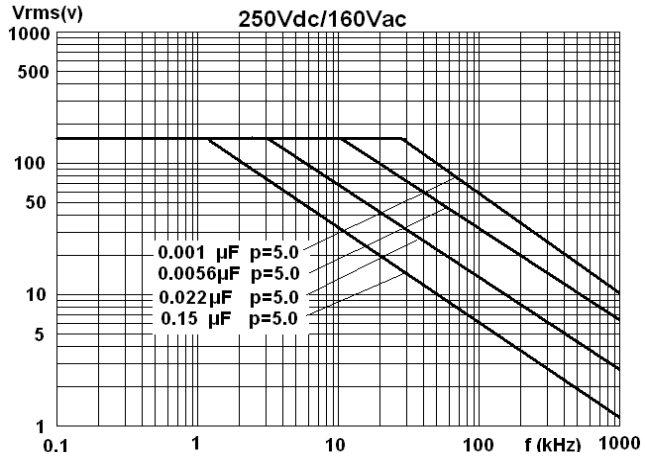
Note: sinusoidal wave-form、 environment temperature ≤ 85 ℃,internal temperature rise △T=15 ℃, p (pitch) in mm..

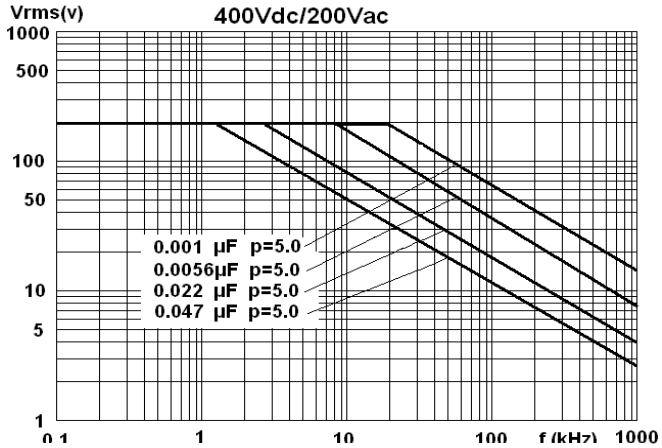
■ MAX. VOLTAGE(Vr.m.s) VERSUS FREQUENCY

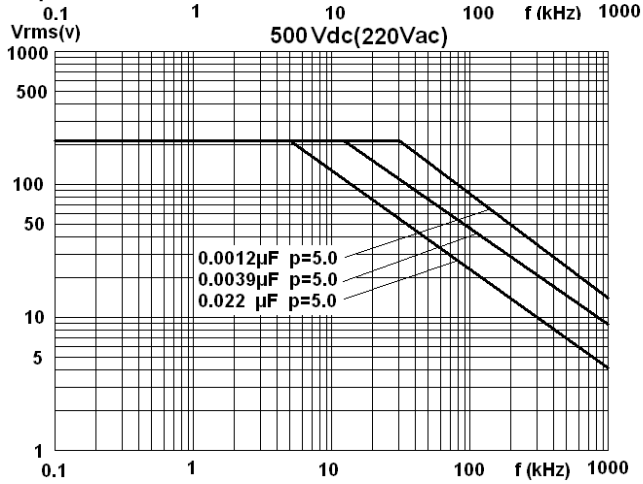
Pattern I (High performance)

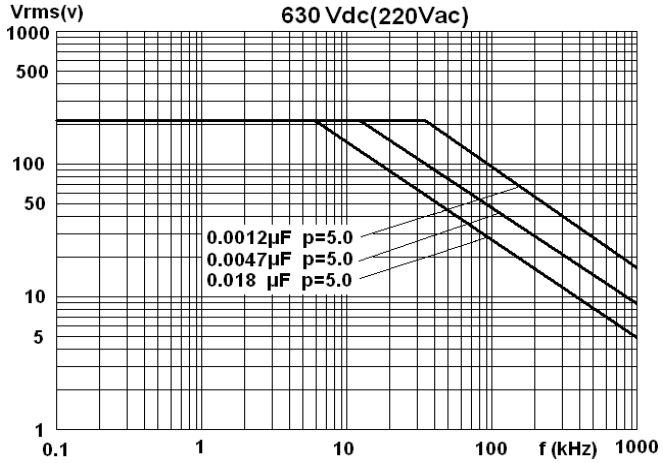












Note: sinusoidal wave-form、 environment temperature ⩽85℃,internal temperature rise △T=15℃, p (pitch) in mm..

■ Test Method And Performance

No.	Item		Performance	Test method GB/T 7332 (IEC60384-2)
1	Capacitance tolerance		J(±5%), K(±10%), M(±20%)	1kHz, 3%U_R(Vrms)max.
2	Tangent of the loss angle		tanδ≤0.010(1kHz) tanδ≤0.015(10kHz) tanδ≤0.030(100kHz, C<0.1μF)	1kHz or 10 kHz or 100 kHz ≤3%U_R(Vrms) or 1 Vrms(whichever is the minor)
3	Dielectric strength		There shall be no breakdown or flashover.	1.4U_R, 5s
4	Insulation resistance		U_R≤100V ≥15 000MΩ, C_N≤0.33μF ≥5 000s, 0.33μF<C_N≤1μF ≥1 000s, C_N >1μF U_R>100V ≥3 0000MΩ, C_N≤0.33μF ≥10 000s , C_N>0.33μF,	U_R≤100V, Charging voltage 10V U_R>100V, Charging voltage 100V 20℃, measuring after applying voltage for 1 minute
5	Solderability		Good quality of tinning	Solder temperature:245℃±5℃ Immersion time: 2.0s±0.5s
6	Initial measurement		Capacitance, Tanδ(10kHz)	
	Terminal Strength (straight lead)		There shall be no visible damage	Tension Ua1: Pull: ϕd=0.5mm,5N; ϕd=0.6mm,10N Bend Ub: The pull of bend: ϕd=0.5mm, 2.5N ϕd=0.6mm, 5N The terminals shall be bent 2 times in each direction.
	Resistance to solder heat		There shall be no visible damage	Solder temperature:260℃±5℃ Immersion time: 10s±1s
	Final measurement		ΔC/C ≤±2%(relative to the initial value) Increase of tanδ:≤0.003(10kHz)	
7	Component’s resistance of solvents		The dimensions shall reach the requirement of Table 1, and the change of capacitor weight shall not beyond 1%.	Solvent: Industrial isopropanol. Solvent temperature:23℃±5℃ Immersion time:5min±0.5min Reverting time:48h
8	Initial measurement		Capacitance, Tanδ(10kHz)	
	Rapid change of temperature		There shall be no evidence of deterioration.	θ_A=-55℃, θ_B =+125℃ 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 foreach 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		ΔC/C ≤±5%(relative to the initial value) Increase of tanδ: ≤0.003 (10kHz) IR: ≥ 50% of the rated value	
9	climate sequence	Initial measurement	Capacitance, Tanδ(10kHz)	
		Dry heat		+125℃,16h

No.	Item		Performance	Test method GB/T 7332 (IEC60384-2)
9	climate sequence (continue)	Damp heat, Cyclic		Test Db, Severity: b, the first cycle
		Cold		-55℃, 2h
		Low air pressure	There shall be no permanent break down, flashover or other harmful deformation when applying U_R at the last 1 minute.	15℃~35℃,8.5kPa, 1h,
		Damp heat, cyclic other		Test Db, Severity b, the other cycles, Applying U_R for 1 minute after the test finished.
		Final measurement	There shall be no evidence of deterioration and the marking shall be legible. ΔC/C≤ ±5%(relative to the initial value) Increase of tanδ: ≤0.005(10kHz) IR: ≥50% of the rated value	
10	Damp heat steady state		There shall be no evidence of deterioration and the marking shall be legible. ΔC/C ≤ ±5%(relative to the initial value) Increase of tanδ ≤0.005(10kHz) IR: ≥50% of the rated value	Temperature:40℃ ±2℃ Humidity: 93^{+2}_{-3} %RH Duration: 56 days
11	Endurance		There shall be no evidence of deterioration and the marking shall be legible. ΔC/C ≤ ±5%(relative to the initial value) Increase of tanδ: ≤0.003 (10kHz) IR: ≥50% of the rated value	Temperature: +85℃ Voltage: 1.25× U_R Duration: 2 000h or Temperature: +125℃ Voltage: 1.25×Uc (Uc=0.5U_R) Duration: 2 000h
12	Temperature characteristic		Measuring capacitance at test point b, d, f: Characteristic at lower category temperature -55℃: $-10\%\leq(C_b-C_d)/C_d\leq 0\%$ Characteristic at upper category temperature +125℃: $0\%\leq(C_f-C_d)/C_d\leq+18\%$ I.R. (test at point f): U_R≤100V: ≥15MΩ (C≤0.33μF) ≥5s (C>0.33μF) U_R>100V: ≥30MΩ (C≤0.33μF) ≥10s (C>0.33μF)	Static method:The Capacitors should be kept at the following temperature in turn: a(20±2) ℃, b(–55±3) ℃, d(20±2) ℃, f(+125±2) ℃, g(20±2) ℃
13	Charging and discharging		ΔC/C≤±5%(relative to the initial value) Increase of tanδ: ≤0.003 (10kHz, C≤1.0μF) ≤0.002 (1kHz, C>1.0μF) IR: ≥ 50% of the rated value	Times: 10 000 Duration of charging: 0.5s Duration of discharging: 0.5s Charging voltage: rated voltage Charging resistance: 220/C_N(Ω) Discharging resistance: R=10/C_N(Ω) or 20Ω(whichever is the greater) C_N: rated capacitance (μF)

■ Marking（For example）

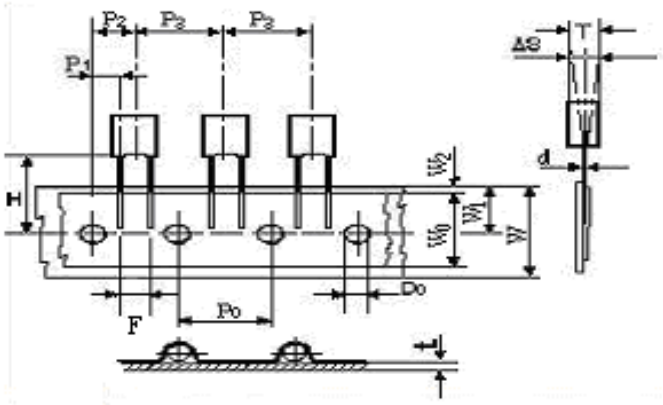
104K 100

Marking Introduction:

100	Rated voltage	104	Rated capacitance
K	Tolerance	–	-

■ Taping specification for box-type capacitor

▲Outline Drawing



▲ Taping Dimensions(mm)

Technology index title	Code	Dimensions	
		P=5.0	Tolerance
Taping type	—	Fig 1	——
Part number Digit12-15	Ammo-pack	A201	
Taping pitch	P_3	12.7	±1.0
Feed hole pitch	P_0	12.7	±0.3
Center of wire	P_1	3.85	±0.7
Center of body	P_2	6.35	±1.3
Pitch of taping wire	F	5.0	+0.6 -0.1
Component alignment	△S	0	±2.0
Height of component from tape center	H	18.5	±0.5
Carrier tape width	W	18.0	+1.0 -0.5
Hold down tape width	W_0	6min	——
Hole position	W_1	9.0	±0.5
Hold down tape sition	W_2	3max	——
Feed hole dia.	D_0	4.0	±0.2
Tape thickness	t	0.7	±0.2

■ Soldering suggestions

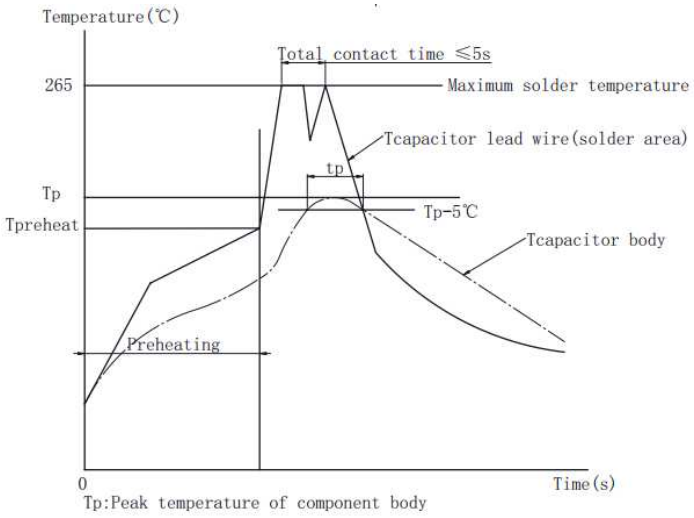
▲ Manual soldering

Max. temperature: 350℃, time: 3s

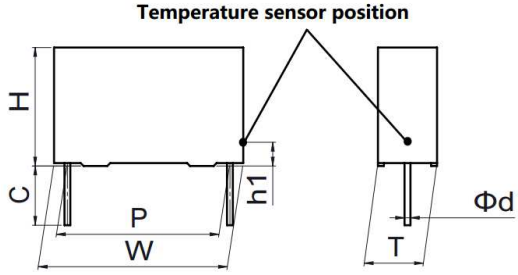
▲ Wave soldering

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.

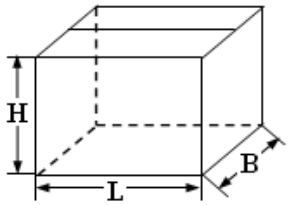


Note: If re-working or dipping twice is necessary, it should be done after the capacitor returns to the normal temperature.

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(℃)	OPP film P≤15mm	OPP film P>15mm	PET film
	115	120	125
Maximum capacitor lead wire temperature(℃)	265	265	265
Maximum capacitor body heating time tp=Tp-5℃	30s		

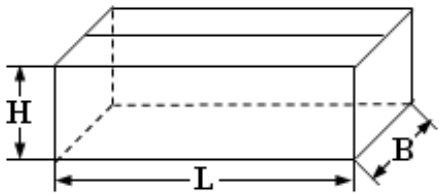
■ Packing box sizes(mm)(example)

1. Out packing box for bulk



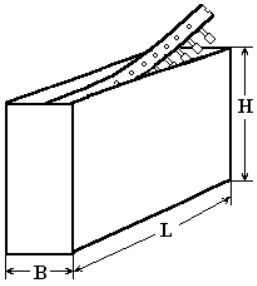
L:375±5
B:375±5
H:265±5

2. Inner packing box for bulk



L:355±3
B:175±3
H:118±3

3. Box sizes for Ammo-pack



L:350±3
B:50±3
H:260±3

■ 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 ℃ to 35 ℃

Humidity：Average per year≤70%RH;

For 30 full days randomly distributed throughout the year≤80%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