



SPECIFICATION FOR APPROVAL

File No.: Q/FRK 0.GS.E.C31-C11

Product Name Metallized polypropylene film capacitor(dipped)

Product Type: CBB21

Product Code C31

Customer

Customer Code

Issue Date

Xiamen Faratronic Co. Ltd.			Approved by Customer
Drafted	Checked	Approved	



厦门法拉电子股份有限公司

Xiamen Faratronic Co. Ltd.

地址: 中国厦门市海沧区新园路 99 号

Add: No.99 Xinyuan Road, Haicang District, Xiamen, China

Export business

HK office : **Faratronic (HK) Co. Ltd.**

TEL: 0086-592-6208609 6208608

0852-2898 9168

FAX: 0086-592-6208557

0852-2898 9683

Mail: Vivian@faratronic.com.cn

hkoffice@faratronic.com.hk

Donny@faratronic.com.cn

kolin@faratronic.com.hk

james@faratronic.com.cn

Http: www.faratronic.com.cn

www.faratronic.com

*.The specification are the property of Xiamen Faratronic Co.Ltd and shall not be copied or used as commercial purposes without permission.

Version history

Current version	Date	Author	Change description

Metallized polypropylene film capacitor(dipped)

■ Outline Drawing

	Forming Lead Shapes			
	I	II	III	IV
	P ≥ F		P < F	
	0mm ≤ P-F ≤ 3mm	3mm < P-F ≤ 8mm	3mm < F-P ≤ 5mm	0mm < F-P ≤ 3mm
F ± 0.8mm; A ≤ 5.0mm; B = 4.5 ± 0.5mm				

■ Features

- Metallized polypropylene structure
- Low loss at high frequency
- Small inherent temperature rise
- Flame retardant epoxy resin powder coating (UL94/V-0)

■ Typical application

- Widely used in high frequency, DC, AC and pulse circuits
- Suitable for S-correction circuits of large screen monitor
- Suitable for the situation where applies high frequency and high current pulse

■ Specifications

Reference Standard	GB/T 10190(IEC 60384-16)				
Climatic Category	40/105/21				
Rated temperature	85°C				
Operating temperature	-40°C~105°C (+85°C to +105°C: decreasing factor 1.25% per °C for U _R)				
Rated Voltage	100V, 250V, 400V, 630V, 1000V, 1250V				
Capacitance Range	0.0010 ~ 3.3μF				
Capacitance Tolerance	±5%(J), ±10%(K), ±20%(M)				
Voltage Proof	1.6U _R (5s)				
Dissipation Factor	≤10 × 10 ⁻⁴ (20°C, 1kHz)				
Insulation Resistance	R ≥ 100 000MΩ, C _N ≤ 0.33μF RC _N ≥ 30 000s, C _N > 0.33μF (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 multiplying the right value with U _R /U.	Pattern II				
	U _R (V)	dV/dt(V/us)			
		P=7.5	P=10.0	P=15.0	P=22.5
	100/250	660	560	310	130
	400	900	780	600	300
630	1 500	1 200	900	400	
1 000/1 250	2 500	2 200	--	--	

■ Part number system

The 18 digits part number is formed as follow

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
C	3	1															

Digit 1 to 3 Series code

C31= CBB21

Digit 4 to 5 D.C. rated voltage

2A=100V 2D=200V 2E=250V 2G=400V

2J=630V 3A=1000V 3B=1250V

Digit 6 to 8 Rated capacitance value

 For example: 103=10×10³pF=0.01μF

Digit 9 Capacitance tolerance

J=±5%, K=±10%, M=±20%

Digit 10 Pitch

3=7.5mm 4=10mm 5=12.5mm 6=15mm

8=20mm 9=22.5mm A=25mm C=30mm

Digit 11 Internal use

S= PatternII

Digit 12 to 15 Lead form and packaging code

Digit 16 to 18 Internal use

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	1	kinked	A	each cap. between two consecutive holes P3=12.7mm,H=20.0mm (For pitch=7.5mm)
		4	F=10.0mm			E	P3=25.4mm;H=20.0mm (For pitch=10.0/15.0mm)
F	lead kinked	6	F=15.0mm	0	B=4.5mm The length of B	0	B Length tolerance ±0.5mm
		7	F=17.5mm				
		8	F=20.0mm				
		9	F=22.5mm				
Y	straight lead "Y" in the figure above			0		0	Length tolerance ±0.5mm
		45	lead length 4.5mm				
		35	lead length 3.5mm				
		32	lead length 3.2mm				

Digit12-15 code "C000"means standard lead length (20mm ~ 30mm)



■ Dimensions(mm)

Pattern II (Reduced sizes)

100Vdc(63Vac)/250Vdc(160Vac) [#]							400Vdc(200Vac)						
C _N (μF)	W max	H max	T max	P	d	Part number	C _N (μF)	W max	H max	T max	P	d	Part number
0.010	9.8	7.7	4.0	7.5	0.6	C312A103-3S****+++	0.010	9.8	7.8	4.1	7.5	0.6	C312G103-3S****+++
0.011	9.8	7.8	4.2	7.5	0.6	C312A113-3S****+++	0.011	9.8	7.9	4.2	7.5	0.6	C312G113-3S****+++
0.012	9.8	7.9	4.3	7.5	0.6	C312A123-3S****+++	0.012	9.8	8.0	4.4	7.5	0.6	C312G123-3S****+++
0.013	9.8	8.0	4.4	7.5	0.6	C312A133-3S****+++	0.013	9.8	8.1	4.5	7.5	0.6	C312G133-3S****+++
0.015	9.8	7.8	4.2	7.5	0.6	C312A153-3S****+++	0.015	9.8	8.4	4.7	7.5	0.6	C312G153-3S****+++
0.016	9.8	7.9	4.3	7.5	0.6	C312A163-3S****+++	0.016	9.8	8.5	4.8	7.5	0.6	C312G163-3S****+++
0.018	9.8	8.1	4.4	7.5	0.6	C312A183-3S****+++	0.018	9.8	8.7	5.0	7.5	0.6	C312G183-3S****+++
0.020	9.8	8.2	4.6	7.5	0.6	C312A203-3S****+++	0.020	9.8	8.9	5.3	7.5	0.6	C312G203-3S****+++
0.022	9.8	8.4	4.8	7.5	0.6	C312A223-3S****+++	0.022	9.8	9.1	5.5	7.5	0.6	C312G223-3S****+++
0.024	9.8	8.6	4.9	7.5	0.6	C312A243-3S****+++	0.024	12.3	8.0	4.3	10.0	0.6	C312G243-4S****+++
0.027	9.8	7.6	4.0	7.5	0.6	C312A273-3S****+++	0.027	12.3	8.1	4.5	10.0	0.6	C312G273-4S****+++
0.030	9.8	7.7	4.1	7.5	0.6	C312A303-3S****+++	0.030	12.3	8.3	4.7	10.0	0.6	C312G303-4S****+++
0.033	9.8	7.9	4.2	7.5	0.6	C312A333-3S****+++	0.033	12.3	8.5	4.8	10.0	0.6	C312G333-4S****+++
0.036	9.8	8.0	4.4	7.5	0.6	C312A363-3S****+++	0.036	12.3	8.6	5.0	10.0	0.6	C312G363-4S****+++
0.039	9.8	8.1	4.5	7.5	0.6	C312A393-3S****+++	0.039	12.3	8.7	5.0	10.0	0.6	C312G393-4S****+++
0.043	9.8	8.3	4.7	7.5	0.6	C312A433-3S****+++	0.043	12.3	8.8	5.2	10.0	0.6	C312G433-4S****+++
0.047	9.8	8.5	4.8	7.5	0.6	C312A473-3S****+++	0.047	12.3	9.0	5.4	10.0	0.6	C312G473-4S****+++
0.051	12.3	8.0	4.3	10.0	0.6	C312A513-4S****+++	0.051	12.3	9.2	5.6	10.0	0.6	C312G513-4S****+++
0.056	12.3	8.1	4.5	10.0	0.6	C312A563-4S****+++	0.056	12.3	9.4	5.8	10.0	0.6	C312G563-4S****+++
0.062	12.3	8.3	4.6	10.0	0.6	C312A623-4S****+++	0.062	12.3	8.9	5.2	10.0	0.6	C312G623-4S****+++
0.068	12.3	8.5	4.8	10.0	0.6	C312A683-4S****+++	0.068	12.3	9.1	5.4	10.0	0.6	C312G683-4S****+++
0.075	12.3	8.6	5.0	10.0	0.6	C312A753-4S****+++	0.075	12.3	9.3	5.7	10.0	0.6	C312G753-4S****+++
0.082	12.3	8.8	5.2	10.0	0.6	C312A823-4S****+++	0.082	12.3	9.5	5.9	10.0	0.6	C312G823-4S****+++
0.091	12.3	8.1	4.5	10.0	0.6	C312A913-4S****+++	0.091	12.3	9.8	6.1	10.0	0.6	C312G913-4S****+++
0.10	12.3	8.3	4.7	10.0	0.6	C312A104-4S****+++	0.10	12.3	10.0	6.4	10.0	0.6	C312G104-4S****+++
0.11	12.3	8.5	4.8	10.0	0.6	C312A114-4S****+++	0.11	12.3	10.3	6.6	10.0	0.6	C312G114-4S****+++
0.12	12.3	8.6	5.0	10.0	0.6	C312A124-4S****+++	0.12	17.5	10.7	5.5	15.0	0.6	C312G124-6S****+++
0.13	12.3	8.6	4.9	10.0	0.6	C312A134-4S****+++	0.13	17.5	10.9	5.7	15.0	0.6	C312G134-6S****+++
0.15	12.3	8.9	5.2	10.0	0.6	C312A154-4S****+++	0.15	17.5	11.2	6.0	15.0	0.6	C312G154-6S****+++
0.16	12.3	9.0	5.4	10.0	0.6	C312A164-4S****+++	0.16	17.5	11.3	6.1	15.0	0.6	C312G164-6S****+++
0.18	12.3	9.3	5.6	10.0	0.6	C312A184-4S****+++	0.18	17.5	11.6	6.4	15.0	0.6	C312G184-6S****+++
0.20	12.3	9.5	5.9	10.0	0.6	C312A204-4S****+++	0.20	17.5	11.9	6.7	15.0	0.6	C312G204-6S****+++
0.22	12.3	9.8	6.1	10.0	0.6	C312A224-4S****+++	0.22	17.5	12.2	7.0	15.0	0.6	C312G224-6S****+++
0.24	12.3	10.0	6.4	10.0	0.6	C312A244-4S****+++	0.24	17.5	12.5	7.3	15.0	0.6	C312G244-6S****+++
0.27	17.5	10.5	5.3	15.0	0.6	C312A274-6S****+++	0.27	17.5	12.9	7.6	15.0	0.8	C312G274-6S****+++
0.30	17.5	10.8	5.5	15.0	0.6	C312A304-6S****+++	0.30	17.5	13.7	8.0	15.0	0.8	C312G304-6S****+++
0.33	17.5	11.0	5.8	15.0	0.6	C312A334-6S****+++	0.33	17.5	14.1	8.4	15.0	0.8	C312G334-6S****+++
0.36	17.5	11.2	6.0	15.0	0.6	C312A364-6S****+++	0.36	17.5	14.4	8.7	15.0	0.8	C312G364-6S****+++
0.39	17.5	11.4	6.2	15.0	0.6	C312A394-6S****+++	0.39	17.5	14.7	9.0	15.0	0.8	C312G394-6S****+++
0.43	17.5	11.6	6.4	15.0	0.6	C312A434-6S****+++	0.43	17.5	15.1	9.4	15.0	0.8	C312G434-6S****+++
0.47	17.5	11.9	6.6	15.0	0.6	C312A474-6S****+++	0.47	17.5	15.5	9.8	15.0	0.8	C312G474-6S****+++
0.51	17.5	12.1	6.9	15.0	0.6	C312A514-6S****+++	0.51	25.2	14.8	7.6	22.5	0.8	C312G514-9S****+++
0.56	17.5	12.4	7.2	15.0	0.6	C312A564-6S****+++	0.56	25.2	15.2	7.9	22.5	0.8	C312G564-9S****+++
0.62	17.5	12.7	7.5	15.0	0.8	C312A624-6S****+++	0.62	25.2	15.6	8.3	22.5	0.8	C312G624-9S****+++
0.68	17.5	13.5	7.8	15.0	0.8	C312A684-6S****+++	0.68	25.2	15.9	9.1	22.5	0.8	C312G684-9S****+++
0.75	17.5	13.9	8.2	15.0	0.8	C312A754-6S****+++	0.75	25.2	16.3	9.6	22.5	0.8	C312G754-9S****+++
0.82	17.5	14.2	8.5	15.0	0.8	C312A824-6S****+++	0.82	25.2	16.7	10.0	22.5	0.8	C312G824-9S****+++
0.91	17.5	14.9	8.9	15.0	0.8	C312A914-6S****+++	0.91	25.2	17.2	10.5	22.5	0.8	C312G914-9S****+++
1.0	17.5	15.0	9.3	15.0	0.8	C312A105-6S****+++	1.0	25.2	17.7	10.9	22.5	0.8	C312G105-9S****+++
1.1	17.5	15.5	9.7	15.0	0.8	C312A115-6S****+++							
1.2	25.2	14.8	7.5	22.5	0.8	C312A125-9S****+++							
1.3	25.2	15.1	7.8	22.5	0.8	C312A135-9S****+++							
1.5	25.2	15.6	8.3	22.5	0.8	C312A155-9S****+++							
1.6	25.2	15.9	8.6	22.5	0.8	C312A165-9S****+++							
1.8	25.2	16.4	9.1	22.5	0.8	C312A185-9S****+++							
2.0	25.2	16.9	10.1	22.5	0.8	C312A205-9S****+++							
2.2	25.2	18.3	9.9	22.5	0.8	C312A225-9S****+++							
2.4	25.2	18.7	10.4	22.5	0.8	C312A245-9S****+++							
2.7	25.2	19.3	10.9	22.5	0.8	C312A275-9S****+++							
3.0	25.2	19.9	11.6	22.5	0.8	C312A305-9S****+++							
3.3	25.2	20.5	12.1	22.5	0.8	C312A335-9S****+++							

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 250Vdc,the digit 4~5 is 2E.



■ Dimensions(mm)

Pattern II (Reduced sizes)

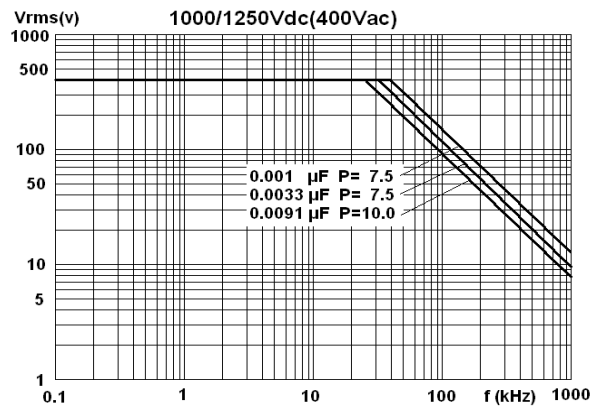
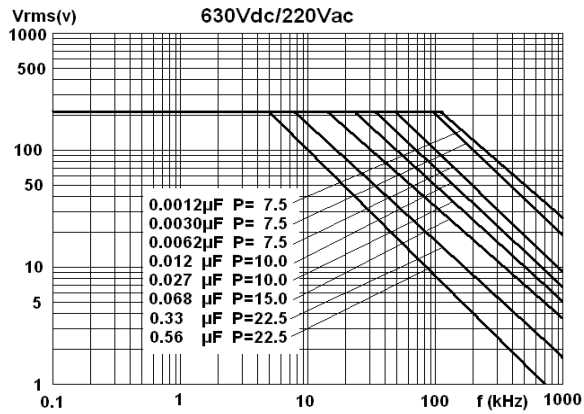
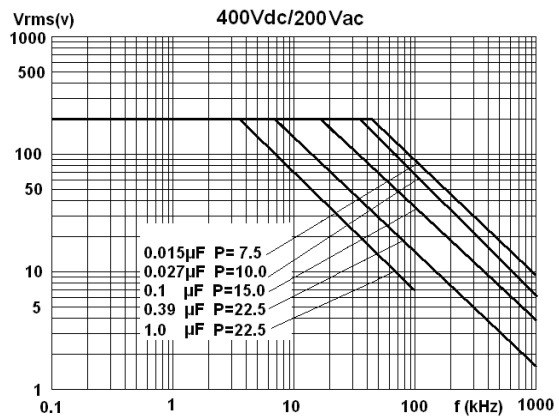
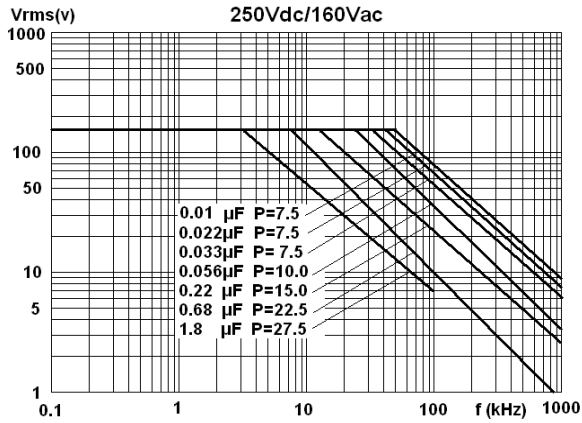
630Vdc(220Vac) [@]							630Vdc(220Vac) [@]							1 000/1 250Vdc [#] (400Vac)						
C _N (μF)	W max	H max	T max	P	d	Part number	C _N (μF)	W max	H max	T max	P	d	Part number	C _N (μF)	W max	H max	T max	P	d	Part number
0.0010	10.0	7.9	4.3	7.5	0.6	C312J102-3S****++	0.027	12.3	9.4	5.7	10.0	0.6	C312J273-4S****++	0.0010	10.0	7.9	4.3	7.5	0.6	C313A102-3S****++
0.0011	10.0	8.1	4.4	7.5	0.6	C312J112-3S****++	0.030	12.3	9.6	6.0	10.0	0.6	C312J303-4S****++	0.0011	10.0	8.1	4.4	7.5	0.6	C313A112-3S****++
0.0012	10.0	8.2	4.5	7.5	0.6	C312J122-3S****++	0.033	12.3	9.9	6.2	10.0	0.6	C312J333-4S****++	0.0012	10.0	8.2	4.5	7.5	0.6	C313A122-3S****++
0.0013	10.0	8.3	4.7	7.5	0.6	C312J132-3S****++	0.036	12.3	10.1	6.4	10.0	0.6	C312J363-4S****++	0.0013	10.0	8.3	4.7	7.5	0.6	C313A132-3S****++
0.0015	10.0	8.1	4.4	7.5	0.6	C312J152-3S****++	0.039	12.3	10.3	6.7	10.0	0.6	C312J393-4S****++	0.0015	10.0	8.1	4.4	7.5	0.6	C313A152-3S****++
0.0016	10.0	8.2	4.5	7.5	0.6	C312J162-3S****++	0.043	17.5	10.7	5.4	15.0	0.6	C312J433-6S****++	0.0016	10.0	8.2	4.5	7.5	0.6	C313A162-3S****++
0.0018	10.0	7.8	4.2	7.5	0.6	C312J182-3S****++	0.047	17.5	10.8	5.6	15.0	0.6	C312J473-6S****++	0.0018	10.0	7.8	4.2	7.5	0.6	C313A182-3S****++
0.0020	10.0	8.0	4.3	7.5	0.6	C312J202-3S****++	0.051	17.5	11.0	5.8	15.0	0.6	C312J513-6S****++	0.0020	10.0	8.0	4.3	7.5	0.6	C313A202-3S****++
0.0022	10.0	8.1	4.5	7.5	0.6	C312J222-3S****++	0.056	17.5	11.2	6.0	15.0	0.6	C312J563-6S****++	0.0022	10.0	8.1	4.5	7.5	0.6	C313A222-3S****++
0.0024	9.8	8.0	4.3	7.5	0.6	C312J242-3S****++	0.062	17.5	11.4	6.2	15.0	0.6	C312J623-6S****++	0.0024	10.0	7.7	4.0	7.5	0.6	C313A242-3S****++
0.0027	9.8	8.1	4.5	7.5	0.6	C312J272-3S****++	0.068	17.5	11.7	6.5	15.0	0.6	C312J683-6S****++	0.0027	10.0	7.8	4.2	7.5	0.6	C313A272-3S****++
0.0030	9.8	8.3	4.7	7.5	0.6	C312J302-3S****++	0.075	17.5	11.9	6.7	15.0	0.6	C312J753-6S****++	0.0030	10.0	8.0	4.4	7.5	0.6	C313A302-3S****++
0.0033	9.8	8.5	4.8	7.5	0.6	C312J332-3S****++	0.082	17.5	12.2	7.0	15.0	0.6	C312J823-6S****++	0.0033	10.0	8.2	4.5	7.5	0.6	C313A332-3S****++
0.0036	9.8	8.0	4.4	7.5	0.6	C312J362-3S****++	0.091	17.5	12.5	7.3	15.0	0.6	C312J913-6S****++	0.0036	10.0	8.3	4.7	7.5	0.6	C313A362-3S****++
0.0039	9.8	8.2	4.5	7.5	0.6	C312J392-3S****++	0.10	17.5	12.8	7.6	15.0	0.8	C312J104-6S****++	0.0039	10.0	8.4	4.8	7.5	0.6	C313A392-3S****++
0.0043	9.8	8.3	4.7	7.5	0.6	C312J432-3S****++	0.11	17.5	13.6	7.9	15.0	0.8	C312J114-6S****++	0.0043	10.0	8.2	4.5	7.5	0.6	C313A432-3S****++
0.0047	9.8	8.5	4.9	7.5	0.6	C312J472-3S****++	0.12	17.5	13.9	8.2	15.0	0.8	C312J124-6S****++	0.0047	10.0	8.3	4.7	7.5	0.6	C313A472-3S****++
0.0051	9.8	8.6	5.0	7.5	0.6	C312J512-3S****++	0.13	17.5	14.2	8.5	15.0	0.8	C312J134-6S****++	0.0051	10.0	8.5	4.8	7.5	0.6	C313A512-3S****++
0.0056	9.8	8.8	5.2	7.5	0.6	C312J562-3S****++	0.15	17.5	14.7	9.0	15.0	0.8	C312J154-6S****++	0.0056	10.0	8.7	5.0	7.5	0.6	C313A562-3S****++
0.0062	9.8	9.0	5.4	7.5	0.6	C312J622-3S****++	0.16	17.5	15.0	9.3	15.0	0.8	C312J164-6S****++	0.0062	10.0	8.7	5.0	7.5	0.6	C313A622-3S****++
0.0068	12.3	8.0	4.4	10.0	0.6	C312J682-4S****++	0.18	17.5	15.5	9.8	15.0	0.8	C312J184-6S****++	0.0068	12.0	8.9	5.2	10.0	0.6	C313A682-4S****++
0.0075	12.3	8.2	4.5	10.0	0.6	C312J752-4S****++	0.20	17.5	16.0	10.3	15.0	0.8	C312J204-6S****++	0.0075	12.0	9.1	5.4	10.0	0.6	C313A752-4S****++
0.0082	12.3	8.3	4.7	10.0	0.6	C312J822-4S****++	0.22	25.2	15.2	7.9	22.5	0.8	C312J224-9S****++	0.0082	12.0	9.3	5.6	10.0	0.6	C313A822-4S****++
0.0091	12.3	8.5	4.9	10.0	0.6	C312J912-4S****++	0.24	25.2	15.5	8.2	22.5	0.8	C312J244-9S****++	0.0091	12.0	9.5	5.9	10.0	0.6	C313A912-4S****++
0.010	12.3	7.8	4.1	10.0	0.6	C312J103-4S****++	0.27	25.2	15.9	9.2	22.5	0.8	C312J274-9S****++	0.010	12.0	9.9	6.3	10.0	0.6	C313A103-4S****++
0.011	12.3	7.9	4.2	10.0	0.6	C312J113-4S****++	0.30	25.2	16.4	9.6	22.5	0.8	C312J304-9S****++							
0.012	12.3	8.0	4.4	10.0	0.6	C312J123-4S****++	0.33	25.2	16.8	10.0	22.5	0.8	C312J334-9S****++							
0.013	12.3	8.1	4.5	10.0	0.6	C312J133-4S****++	0.36	25.2	17.2	10.4	22.5	0.8	C312J364-9S****++							
0.015	12.3	8.3	4.7	10.0	0.6	C312J153-4S****++	0.39	25.2	17.6	10.8	22.5	0.8	C312J394-9S****++							
0.016	12.3	8.5	4.8	10.0	0.6	C312J163-4S****++	0.43	25.2	18.1	11.3	22.5	0.8	C312J434-9S****++							
0.018	12.3	8.6	4.9	10.0	0.6	C312J183-4S****++	0.47	25.2	18.6	11.8	22.5	0.8	C312J474-9S****++							
0.020	12.3	8.8	5.1	10.0	0.6	C312J203-4S****++	0.51	25.2	19.0	12.2	22.5	0.8	C312J514-9S****++							
0.022	12.3	8.9	5.3	10.0	0.6	C312J223-4S****++	0.56	25.2	19.6	12.8	22.5	0.8	C312J564-9S****++							
0.024	12.3	9.1	5.5	10.0	0.6	C312J243-4S****++														

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 1250Vdc,the digit 4~5 is 3B.

4. “@”Not suitable for across-the-line applications. Pls refer to interference Suppression Capacitors.

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.

■ Test Method And Performance

No.	Item	Performance	Test method(IEC 60384-16)
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	There shall be no visible damage	Tension: 0.6≤φd≤0.8mm, 10N φd=1.0mm, 20N Bend: 0.6≤φd≤0.8mm, 5N φd=1.0mm, 10N The terminals shall be bent 2 times in each direction.
	Resistance to solder heat	There shall be no visible damage	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 =-40°C, θ _B =+105°C 5 cycles, Duration: t=30min
3	Vibration	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	There shall be no evidence of deterioration.	4 000 times, Acceleration: 390m/s ² ,Pulse duration, 6ms
	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) IR: ≥ 50% of the rated value	
4	climate sequence	Initial measurement	Capacitance Tgδ:1kHz, C>1.0μF 10kHz, C≤1.0μF
		Dry heat	+105°C, 16h
		Damp heat, Cyclic	Test Db, Severity: b, the first cycle
		Cold	-40°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,

No.	Item		Performance	Test method(IEC 60384-16)
4	climate sequence (continue)	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. $\Delta C/C \leq \pm 5\%$ (relative to the initial value) Increase of $\text{tg}\delta$: ≤ 0.005 (10kHz, $C \leq 1.0\mu\text{F}$) ≤ 0.005 (1kHz, $C > 1.0\mu\text{F}$) IR: $\geq 50\%$ of the rated value	
5	Damp heat steady state		There shall be no evidence of deterioration and the marking shall be legible. $\Delta C/C \leq \pm 5\%$ (relative to the initial value) Increase of $\text{tg}\delta \leq 0.002$ IR: $\geq 50\%$ of the rated value	Temperature: $40^\circ\text{C} \pm 2^\circ\text{C}$ Humidity: $93 \pm 3\%$ RH Duration: 21 days
6	Endurance		$\Delta C/C \leq \pm 5\%$ (relative to the initial value) Increase of $\text{tg}\delta$: ≤ 0.004 (10kHz, $C \leq 1.0\mu\text{F}$) ≤ 0.004 (1kHz, $C > 1.0\mu\text{F}$) IR: $\geq 50\%$ of the rated value	Temperature: $+85^\circ\text{C}$ Voltage: $1.25 \times U_R$ (50Hz) Duration: 1 000h
7	Temperature characteristic		Measuring capacitance at test point b, d, f: Characteristic at lower category temperature -40°C : $0 \leq (C_b - C_d)/C_d \leq +3\%$ Characteristic at upper category temperature $+85^\circ\text{C}$: $-3.25\% \leq (C_f - C_d)/C_d \leq 0$	Static method: The capacitors should be kept at the following temperature in turn: a. $(+20 \pm 2)^\circ\text{C}$ b. $(-40 \pm 2)^\circ\text{C}$ d. $(20 \pm 2)^\circ\text{C}$ f. $(+85 \pm 2)^\circ\text{C}$ g. $(+20 \pm 2)^\circ\text{C}$
8	Charging and discharging		$\Delta C/C \leq \pm 5\%$ (relative to the initial value) Increase of $\text{tg}\delta$: ≤ 0.005 (10kHz, $C \leq 1.0\mu\text{F}$) ≤ 0.005 (1kHz, $C > 1.0\mu\text{F}$) IR: $\geq 50\%$ of the rated value	Times: 10 000 Duration of charging: 0.5s Duration of discharging: 0.5s Charging voltage: rated voltage Charging resistance: $220/C_R(\Omega)$ Discharging resistance: $R = 10/C_R(\Omega)$ or 20Ω (whichever is the greater) C_R : rated capacitance (μF)

Quality ensuring test (before shipment):

Inspection item (each batch)	Inspection level (GB 2828)	
	IL	AQL
Appearance inspection	S-4	1.5%
Dimensions		
Capacitance	II	0.65%
Tangent of the loss angle		
Dielectric strength		
Insulation resistance		
Solderability	S-3	2.5%

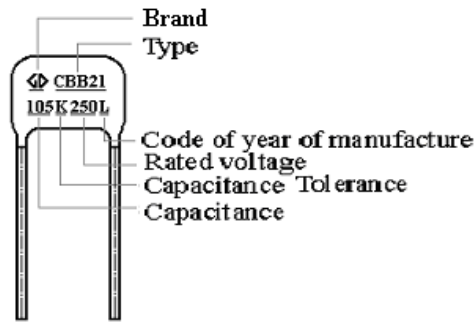
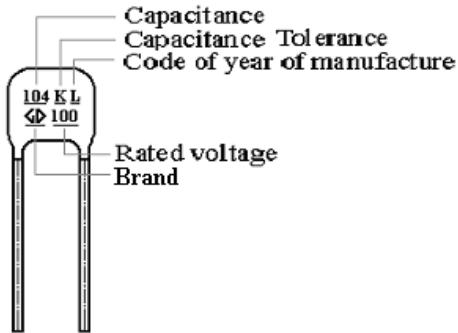
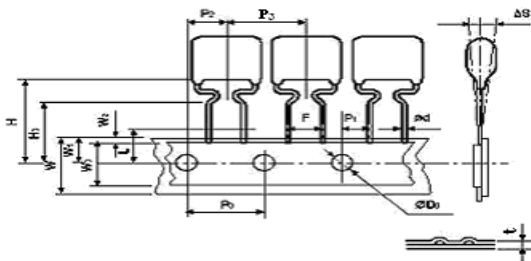
■ Marking
 $P \leq 10.0\text{mm}$
 $P > 10.0\text{mm}$

■ Taping for dipped-type capacitor
▲ Outline Drawing


Fig.1

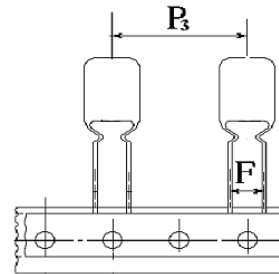


Fig 2

▲ Taping Dimensions(mm)

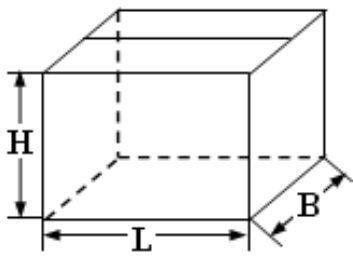
Technology index title	Code	Dimensions (mm)				Tolerance
		P=5.0	P=7.5	P=10.0	P=15.0	
Taping type	—	Fig 1	Fig 1	Fig 2	Fig 2	—
Part number Digit 12-15	Ammo-pack	A21A	A31A	A41E	A61E	
Taping pitch	P ₃	12.7	12.7	25.4	25.4	±1.0
Feed hole pitch	P ₀	12.7	12.7	12.7	12.7	±0.3
Center of wire	P ₁	3.85	2.60	7.7	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	+0.8 -0.2
Component alignment	ΔS	0	0	0	0	±2.0
Height of crangle from tape center	H	20.0	20.0	20.0	20.0	±1.0
Height of component from tape center	H ₀	16.0	16.0	16.0	16.0	±0.5
Carrier tape width	W	18.0	18.0	18.0	18.0	+1.0 -0.5
Hold down tape width	W ₀	10min	10min	10min	10min	—
Hole position	W ₁	9.0	9.0	9.0	9.0	+0.75 -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	±0.3
Tape thickness	t	0.7	0.7	0.7	0.7	±0.2

Note: * P₀=15mm is also available;

** F can be other lead spacing;

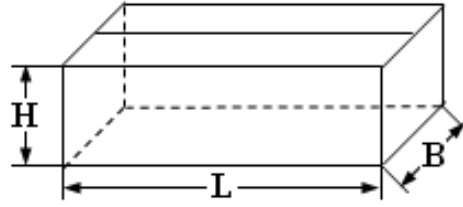
■ Packing box sizes(mm)

1. Out packing box for bulk



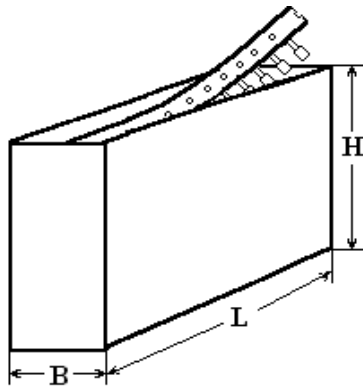
L:375±5
B:375±5
H:265±5

2. Inner packing box for bulk



L:355±3
B:175±3
H:118±3

3. Box sizes for Ammo-pack



L:330±3
B:48±3
H:260±3