

SPECIFICATIONS FOR APPROVAL

Metallized Polypropylene Film Capacitor (Box-type)

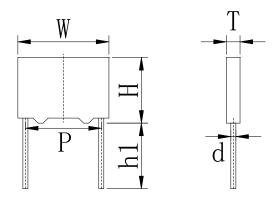
Series/Type: CBB24

Part No.: CB24334J2G90B500U



CBB24 type metallized Polypropylene Film Capacitor(Box-type)

1, Outline Drawing



2. Application and Feature:

High-voltage proof, high insulation resistance, Small inherent temperature rise, is suitable for the high frequency, DC, AC, pulse circuits, electronic lighting.

3, Specification:

Reference standard	IEC 60384-16、GB 10190	
Climatic category	40/105/56	① The frequency of the
Rated temperature	85℃	alternating current in the rated voltage is
Operation Temperature Range	-40°C~110°C	50Hz(working frequency), the working voltage of the capacitor decreases as the
Rated voltage	160Vdc/90Vac、250Vdc/160Vac、400Vdc/220Vac、630Vdc/250Vac、1000Vdc/1250Vdc/400Vac、1600Vdc/600Vac、2000Vdc/700Vac	frequency increases. ② The working voltage of the capacitor decreases as the
Capacitance range	$0.00047 \mu F \sim 15.0 \mu F$	temperature rises. between 85~110°C,take
Capacitance tolerance	$\pm 5\%$ (J)、 $\pm 10\%$ (K) 、 $\pm 20\%$ (M) (20°C, 1kHz)	85°C as the base, the temperature rises
Voltage proof Between terminations	U=1.6U _R , 5s(20°C)	1°C, the rated working voltage of the capacitor decreases 1.25%. ③ The working voltage of the capacitance
Insulation resistance	$\begin{array}{c} C_R \!\! \leq \!\! 0.33 \mu F , IR \!\! \geq \!\! 100 000 M \Omega \\ C_R \!\! > \!\! 0.33 \mu F , IR \! \times \! C \!\! \geqslant \!\! 30 000 s \\ (20 ^{\circ}\!\! C , 100 Vdc , 1 min) \end{array}$	decreases as the capacitance increases. 4 Above mentioned instructions shall be
Dissipation factor	1kHz: tgδ≤0.0010 10kHz: tgδ≤0.0020 (C _R ≤1μF)	fully considered when using the capacitor.
2 issipation inviol	10Κ112. 150_0.0020 (ΟΚ_1μ1 /	
Special requirement		



4. Outline of shaping

Outline Drawings of Shaping CC Shaping CC Shaping Picture S-4 Outline Drawings of Shaping Outline Drawings of Shaping Outline Drawings of Shaping	Code of Shaping	CT Shaping Picture S-1	CK Shaping Picture S-2	CY Shaping Picture S-3
Outline Drawings of Shaping Picture S-4 Picture S-5 Outline Drawings F F F	_		₽ F	ニţÛUU
Outline Drawings of Shaping		CC Shaping	CX Shaping	
of Shaping F F F F F F F F F F F F F	Code of Shaping	Picture S-4	Picture S-5	
1 (Umm\r-r\3mm) 2.3mm\r-r\8mm)	_	∄	[

1, 2.5mm

/"F" indicates the pitch of Shaping products, Integer times of 2.5mm;

2. $2.5 mm \le |$ P-F $| \le 3 mm$ /Choosing the specific crimping method according to the requirement of customer.

3. $h1:3.0\sim10.0$ mm; $h2: \leq 5$ mm(CK Shaping-Picture S-2; CX Shaping-Picture S-5)

≤3mm (CY Shaping-Picture S-3):

≤6mm (CC Shaping-Picture S-4).



5, Part number code system

The 17 digits part number is formed as follow:

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

Digit 1 to 4 Series code of film capacitor

CB24=CBB24

Digit 5 to 7 Rated capacitance value code

For example: $103=10\times10^{-3}$ pF=0.01 μ F

Digit 8 Capacitance tolerance code

 $J=\pm 5\%$ $K=\pm 10\%$ $M=\pm 20\%$

Digit 9 to 10 DC rated voltage code

2A=100V 2C=160V 2E=250V

2G=400V 2S=450V 2J=630V

3A=1000V 3B=1250V 3C=1600V

3D=2000V

Digit 11 Pitch code

2=5.0 3=7.5 4=10.0

6=15.0 9=22.5 B=27.5

Digit 12 Internal use

Digit 13~16 Lead form and packing code

Digit 17 Special code

Table 1 Lead form and packing code

	Digit13		Digit14		Digit15		Digit16		
Code	explanation	Code	explanation	Code	explanation	Code	explanation		
		0	P=5.0mm	0	Straight	0	each capacitor between two consecutive holes, hole space is 12.7mm		
A		1	P=7.5mm	K	CK弯脚	1	consecutive hole between two leads of the capacitor, hole space is 12.7mm		
or R	ammo-pack or reel-pack	2	P=10.0mm		CK kinked	2	each capacitor between two consecutive holes, hole space is 15.0mm		
	·		P=15.0mm	Y	CY弯脚 CY kinked	3	consecutive hole between two leads of the capacitor, hole space is 15.0mm		
К		0	F=5.0mm						
or		1	F=7.5mm	0	h1=3.5mm	0			
Y	lead kinked	2	F=10.0mm	U	111-3.311111	U	\pm 0.5mm		
•	(in bulk)	3	F=15.0mm						
В	bagged	00	-4 ddl dl		(i)				
Р	box		standard lead leng	jtn 15mm	(min)	0			
F	arrangement						Length tolerance±0.5mm		
Q	insert foam	35	lead length 3.5mm	า					



7. Max dV/dt (V/ μ s)

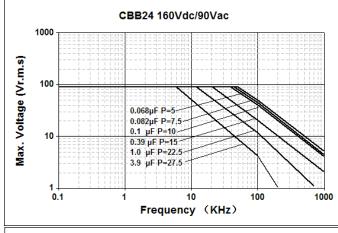
额定电压			Max dV	'dt (V/μs)		
(Vdc)	P=5.0	P=7.5	P=10.0	P=15.0	P=22.5	P=27.5
160	110	310	190	110	65	55
250	270	660	560	310	130	110
400/450	440	900	780	600	300	130
630	550	1500	1200	900	400	200
1000/1250	975	2 300	2200	2000	800	300
1600	/	/	6 000	4 500	1800	/
2000	/	/	/	9500	4500	/

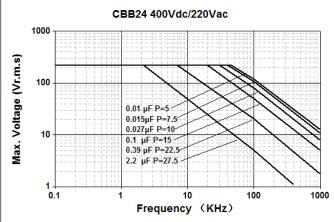
Rated voltage pulse slope (dV/dt)R at rated voltage.

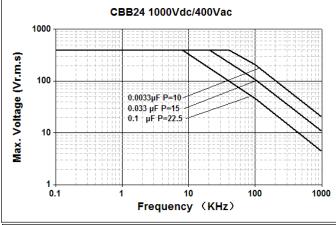
If the working voltage (U) is lower than the rated voltage (UR), the capacitor can be worked at a higher dV/dt. In this case, the maximum allowed dV/dt is obtain by multiplying the up value with UR/U.

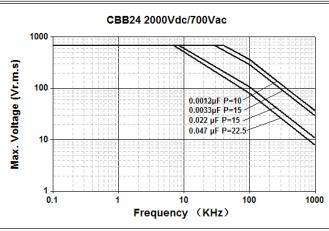


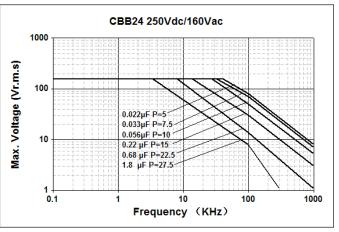
8, Max. Voltage (Vr.m.s) versus Frequency

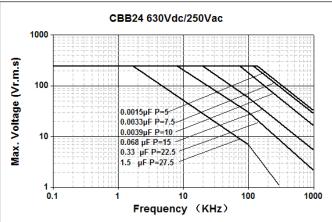


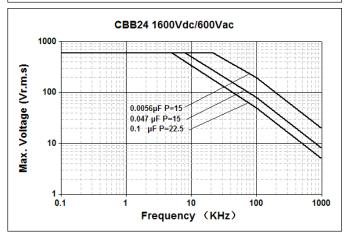






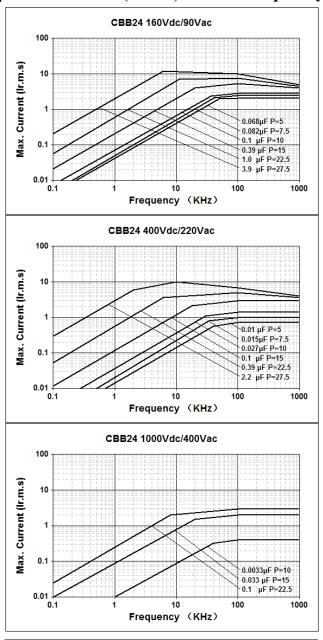


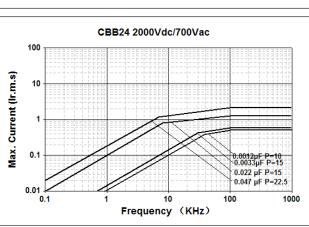


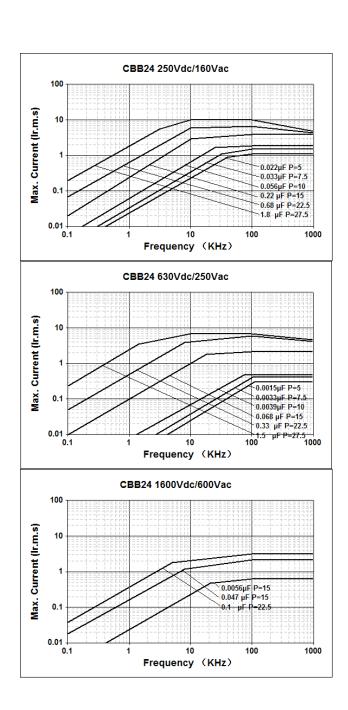




9 Max. Current (Ir.m.s) versus Frequency









10, Test Method And Performance

No.	Item	Performance	Test method(GB2693-2001)
1	Solderability	After solderability, good quality of tinning, there shall no continuous part of uncoated pin	Solder temperature: 235°C±5°C Immersion time: 2.0s±0.5s
2	Terminal strength	There shall be no visible damage	Tense: 0.50≤d≤0.80, 10N 0.80 < d≤1.25, 20N The terminals shall be bent 2 times in each direction
3		There shall be no visible damage $\Delta C/C$: $\leq 3\%$ (relative to the initial value) Increase of $tg\delta$: ≤ 0.004	Solder temperature:260°C±5°C Immersion time: 10s±0.5s
	Initial measurement	Capacitance tgδ C _R ≤1μF: Test frequency , 10kHz C _R >1μF: Test frequency , 1kHz	
	Rapid change of temperature	There shall be no evidence of deterioration.	θ_{A} =-40°C, θ_{B} =+105°C 5 cycles Duration: t=30min
4	Vibration		Amplitude 0.75mm or acceleration 98m/s ² (whichever is the smaller severity), f:10Hz to 500Hz.Three perpendicular directions, 2h for each direction, total 6h.
	Bump	II here chall he no evidence of deferioration	4000 times,Acceleration:390m/s2, Pulse duration,6ms
		There shall be no visible damage $\Delta C/C$: $\leq 3\%$ (relative to the initial value) Increase of $tg\delta$: ≤ 0.004 IR: $\geq 50\%$ of the rated value	



No.	Item		Performance	Test method(GB2693-2001)
		Initial measurement		
		Dry heat		+105℃, 16h
		Damp heat, Cyclic		Test Db, he first cycle
		Cold		-40°C, 2h
5	climate sequence	Low air pressure	There shall be no permanent breakdown, flashover or other harmful deformation.	8.5kPa(85mbar), 1h
		Damp heat, cyclic other		Test Db, the other cycles
		measurement	There shall be no visible damage, legible marking $\Delta C/C \le 5\%$ (relative to the initial value) Increase of $tg\delta$: ≤ 0.005 IR: $\ge 50\%$ of the rated value	
6	Damp heat steady state	legible marking (relative to the Increase of	ne initial value)	Temperature:40°C±2°C Humidity: 93± ² ₃ %RH Duration: 56days
7	Endurance	ΔC/C≤5%(re. Increase of t	e no visible damage, legible marking lative to the initial value) $g\delta\colon \le 0.004$ of the rated value	T=85°C,1000h, Applied Voltage: 1.25×U _R



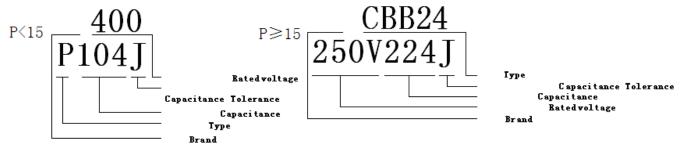
No.	Item	Performance	Test method(GB2693-2001)
8	Characteristic	Characteristic at lower category temperature -40°	$a(20\pm2)$ °C, $b(-40\pm3)$ °C, $d(20\pm2)$ °C, $f(105\pm2)$
9	and discharging	Δ C/C≤5% (relative to the initial value) Increase of tg δ : ≤0.005 I.R.: ≥50% of the rated value	Times: 10000 Duration of charging: 0.5s Duration of discharging: 0.5s Charging voltage: U _R



11. Quality ensuring test (before shipment):

		Inspection level (GB 2828)
Inspection item (each batch)	IL	AQL
Appearance inspection Dimensions	S-4	1.5
Capacitance		
Tangent of the loss angle Dielectric strength Insulation resistance	II	0.04
Solderability	S-3	2. 5

12, Marking



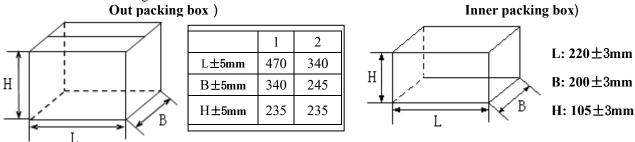
13, Packaging:

Packaging bags

A certain quantity of capacitors and the qualified bill shall be packed with a plastic bag. Then put several plastic bags into one small packing box, sealed with adhesive paper. One big packing box contains 6 or 3 small packing box. Packing with small or big box depends on the customer's purchase quantity.

The dimensions of packing boxes refer to the drawing.

For the packing box with capacitors, all kinds of shipments are permitted, but the sprinkle of rain or snow and mechanical damage must be avoided.



Note: Out packing box have two difference size, includes the bigger one and the smaller one. Those were marking in the 1、2 different ways.

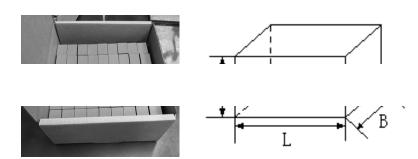


Board packaging

The capacitor will insert the lead into the plastic foam, and put it into the packing box. Every 6 boxes are packed in the outer box.

Packing diagram, inner packing box and outer packing box dimensions are shown in the figure below

For the packing box with capacitors, all kinds of shipments are permitted, but the sprinkle of rain or snow and mechanical damage must be avoided.



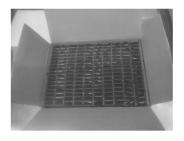
	内包	外包
	装盒	装箱
L±5mm	220	470
B±5mm	200	340
H±5mm	105	235

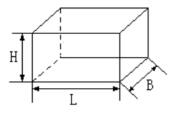
Row box packaging

The capacitor will be arranged by a plater, and put it into the packing box. Every4 boxes are packed in the outer box.

Packing diagram, inner packing box and outer packing box dimensions are shown in the figure below

For the packing box with capacitors, all kinds of shipments are permitted, but the sprinkle of rain or snow and mechanical damage must be avoided.

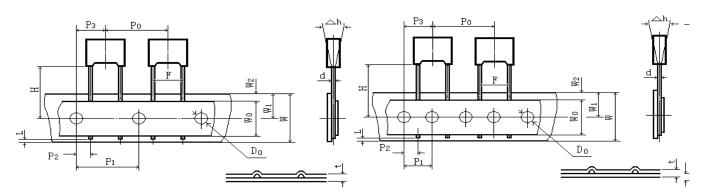




	内包 装盒	外包 装箱
L±5mm	330	470
B±5mm	230	340
H±5mm	100	220



Specification of radial taping capacitors



Picture T-1 Picture T-2

Dimensions of taping

(mm)

			P_0	\mathbf{P}_1	\mathbf{P}_2	P_3	F	∆h	W	\mathbf{W}_0	\mathbf{W}_1	W_2	Н	D_0	t	L
deviat	ion	fig.	±1.0	±0.2	±0.5	±1.3	+0.4	±2.0	±0.5	/	±0.5	/	±0.5	±0.2	±0.2	/
	P=5.0	T-1	12.7	12.7	3.85	6.35	5.0	0	18.0	11.0min	9.0	0.5-3.0	18.5	4.0	0.7	0min
	P=7.5	T-1	12.7	12.7	2.6	6.35	7.5	0	18.0	11.0min	9.0	0.5-3.0	18.5	4.0	0.7	0min
Dimensions	P=10.0	T-2	25.4	12.7	7.7	12.7	10.0	0	18.0	11.0min	9.0	0.5-3.0	18.5	4.0	0.7	0min
	P=15.0	T-2	25.4	12.7	5.2	12.7	15.0	0	18.0	11.0min	9.0	0.5-3.0	18.5	4.0	0.7	0min

Note:

P is lead space before kink.

P1=15.0mm is also available.

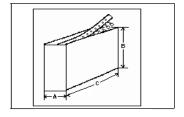
F can be other lead space.

If you need other taping, please contact us

Dimensions of taping packing

Ammo-pack

Code	Size(mm)
A	53±5
В	267±5
С	325±5



picture 6

akyga passive

Specification Approval sheet

♦ Cautions of using:

Permissible conditions:

- Do not exceed upper category temperature.
- > Avoid overload of capacitors.
- > Pulse current should be within the figures calculated by dv/dt.

Handling cautions:

- > Do not apply excessive force to the lead wire root area.
- > Be careful to lead cusp.

Recommend storage conditions:

- ➤ Temperature: ≤ 30°C.
- ➤ Humidity ≤70%RH, no dew allowed on the capacitor.