

CFR

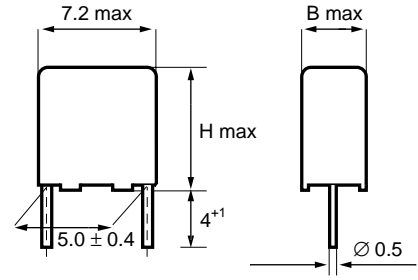
- Polycarbonate film/foil capacitor
- According to IEC 60384-12

TYPICAL APPLICATIONS

Applications requiring low temperature dependence. Small sized film/foil capacitor.

CONSTRUCTION

Capacitor with polycarbonate film and metal foil electrodes. Radial leads of tinned wire are electrically welded to the winding. Encapsulation in self-extinguishing material meeting the requirements of UL 94V-0.



TECHNICAL DATA

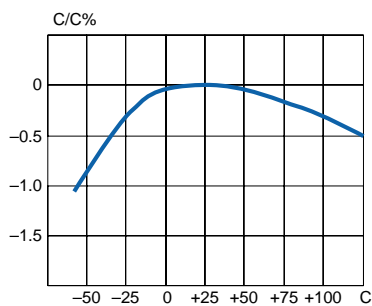
Capacitance measured at $f=1\text{kHz}$, $T=23^\circ\text{C}$.
For $C \leq 1000\text{ pF}$, $f = 100\text{ kHz}$.

Rated voltage $U_{R'}$ VDC	100	250	400
Rated voltage $U_{R'}$ VAC	63	160	220
Capacitance, pF	100	100	100
	-15000	-3300	-1500
Capacitance tolerance	$\pm 10\%$, $\pm 5\%$, $\pm 2.5\%$. Closer tolerances available in different case formats.		
Temperature range	-55 ... +125°C Above +85°C DC and AC voltage derating is 1.25%/°C.		
Climatic category	IEC 60068-1, 55/125/56 DIN 40040, FKD		
Test voltage	$2 \times U_R$ for 2s		
Capacitance drift	Max. $\pm 0.5\%$ after a 2 year storage period at a temperature of +10° ... +40°C and a relative humidity of 40 ... 60%.		
Temperature coefficient	0 (± 100) ppm/°C (at 1 kHz)		
Self inductance	Approximately 6 nH/cm for the total length of capacitor winding and leads.		
Dissipation factor $\tan\delta$	Maximum values at +23°C		
	$C \leq 10\,000\text{ pF}$	$C > 10\,000\text{ pF}$	
	1 kHz	0.2 %	0.2 %
	10 kHz	0.4 %	0.4 %
	100 kHz	0.8 %	
Insulation resistance	Measured at +20°C, according to IEC 60384-12. Minimum values between terminals: 500 000 MΩ.		

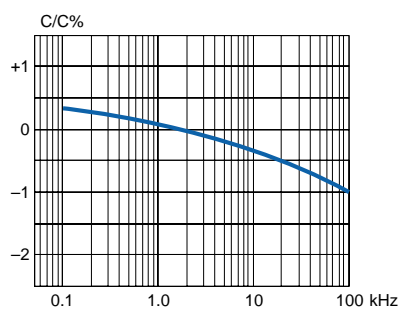
ENVIRONMENTAL TEST DATA

Damp heat test	Test conditions: Test criteria:	$T = +40^\circ\text{C}$, $\text{RH} = 93\%$, $t = 56\text{ days}$. $\Delta C/C \leq 3\%$, $\Delta \tan\delta \leq 0.002$ (1kHz) IR 250 000 MΩ.
Endurance test	Test conditions: Test criteria:	$T = +125^\circ\text{C}$, $U = 1.5 \times (0.5 \times U_R)$, $t = 1000\text{ h}$. $\Delta C/C \leq 3\%$, $\Delta \tan\delta \leq 0.002$ (1kHz) IR 250 000 MΩ.

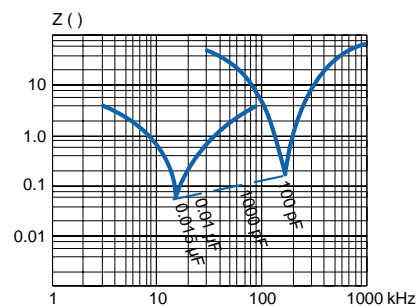
TYPICAL DATA



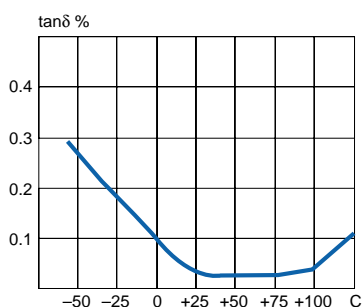
Capacitance vs.
temperature (at 1 kHz)



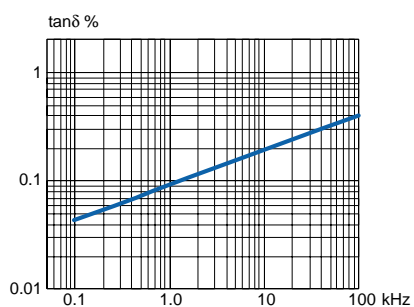
Capacitance vs.
frequency (at +23°C)



Resonance frequencies



Dissipation factor vs.
temperature



Dissipation factor vs.
frequency (at +23°C)

ORDERING INFORMATION

See article table and pages 18 to 23 for options and article code construction. The standard quantity/reel is for 360 mm reel. If 500 mm reel is required, it must be specified when ordering and the quantity is 2x the given quantity.

MARKING

- Capacitance
- Tolerance code
- Rated voltage
- Code CFR5

ARTICLE TABLE

Capacitance μF	Max dimensions in mm				Quantity per package				Max dU/dt $\text{V}/\mu\text{s}$	Article code
	B	H	L	p	Bulk	Tray	Reel	Ammo		
100 VDC/63 VAC										
0.00010	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 101J100L4 BULK
0.00015	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 151J100L4 BULK
0.00022	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 221J100L4 BULK
0.00033	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 331J100L4 BULK
0.00047	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 471J100L4 BULK
0.00068	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 681J100L4 BULK
0.0010	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 102J100L4 BULK
0.0015	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 152J100L4 BULK
0.0022	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 222J100L4 BULK
0.0033	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 332J100L4 BULK
0.0047	3.5	8.0	7.2	5.0	1000		2000	2000	1000	CFR5 472J100L4 BULK
0.0068	3.5	8.0	7.2	5.0	1000		2000	2000	1000	CFR5 682J100L4 BULK
0.010	4.5	9.0	7.2	5.0	1000		1500	1700	1000	CFR5 103J100L4 BULK
0.015	4.5	9.0	7.2	5.0	1000		1500	1700	1000	CFR5 153J100L4 BULK
250 VDC/160 VAC										
0.00010	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 101J250L4 BULK
0.00015	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 151J250L4 BULK
0.00022	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 221J250L4 BULK
0.00033	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 331J250L4 BULK
0.00047	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 471J250L4 BULK
0.00068	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 681J250L4 BULK
0.0010	3.5	8.0	7.2	5.0	1000		2000	2000	1000	CFR5 102J250L4 BULK
0.0015	3.5	8.0	7.2	5.0	1000		2000	2000	1000	CFR5 152J250L4 BULK
0.0022	3.5	8.0	7.2	5.0	1000		2000	2000	1000	CFR5 222J250L4 BULK
0.0033	4.5	9.0	7.2	5.0	1000		1500	1700	1000	CFR5 332J250L4 BULK
400 VDC/220 VAC										
0.00010	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 101J400L4 BULK
0.00015	2.5	6.5	7.2	5.0	1000		2500	3000	1000	CFR5 151J400L4 BULK
0.00022	3.5	8.0	7.2	5.0	1000		2000	2000	1000	CFR5 221J400L4 BULK
0.00033	3.5	8.0	7.2	5.0	1000		2000	2000	1000	CFR5 331J400L4 BULK
0.00047	3.5	8.0	7.2	5.0	1000		2000	2000	1000	CFR5 471J400L4 BULK
0.00068	3.5	8.0	7.2	5.0	1000		2000	2000	1000	CFR5 681J400L4 BULK
0.0010	3.5	8.0	7.2	5.0	1000		2000	2000	1000	CFR5 102J400L4 BULK
0.0015	4.5	9.0	7.2	5.0	1000		1500	1700	1000	CFR5 152J400L4 BULK