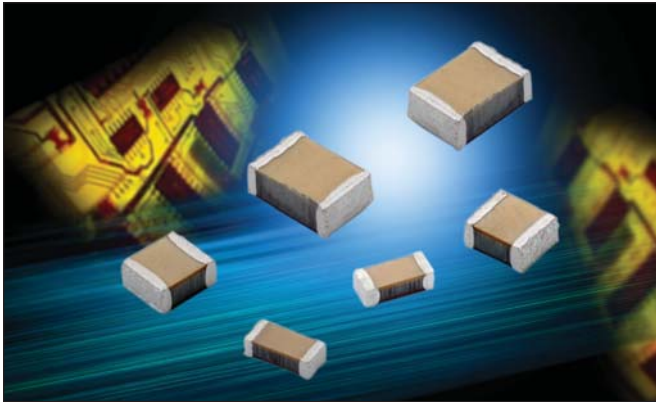


# Film Chip Capacitors



## PPS DIELECTRIC – CB Series



### APPLICATIONS

General purpose function in low voltage applications:

- Filtering, coupling, decoupling
- Time-constant
- Oscillation timing circuit

Typical applications would be:

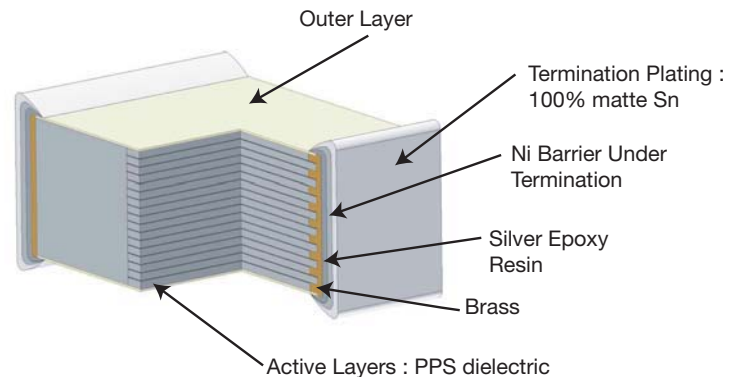
- Automotive (navigation system ...)
- Telecom (GSM PLL circuit, ADSL system ...)
- Industrial (Lighting and power supplies...)

### GENERAL DESCRIPTION

Film chip capacitor using a naked and stacked construction with metallized PolyPhenylene Sulfide film (PPS)

### ADVANTAGES

- Applicable for both flow and reflow soldering.
- Very constant Capacitance value with temperature.
- Low dielectric absorption.
- The intrinsic elasticity of the dielectric film provides an excellent compatibility of the capacitor with all types of material for printed circuit boards.
- Excellent thermal shock resistance.
- Low dissipation factor, ESR and ESL.
- No piezoelectric effect.
- Available in tape and reel suitable for automatic placement.
- Non-polar construction.



### PERFORMANCE CHARACTERISTICS

Climatic Category	55/125/56
Capacitance Range	1nF to 150nF
Tolerance on $C_R$	$\pm 2\%$ , $\pm 5\%$ , $\pm 10\%$
Nominal Voltages	16Vdc to 50Vdc
Test Voltage	1.4Vr 2s to 25°C
Soldering methods	IR or vapor phase reflow or wave soldering
Tangent of Loss Angle at 1kHz (DF)	$< 50 \times 10^{-4}$
Insulation resistance minimum : IR	IR $> 1000 \text{ M}\Omega$
Temperature range	-55°C to 125°C

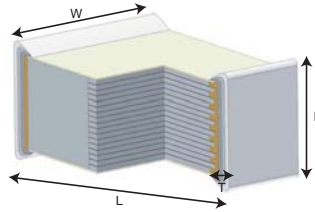


# Film Chip Capacitors



## PPS DIELECTRIC – CB Series

### CAPACITANCE VALUES (CR) AND NOMINAL VOLTAGES (VR)



millimeters (inches)

Capacitance Range (CR)	Ordering Code	VOLTAGE Vdc: 16V Vac: 10V											Packaging Unit		Reel Pkg Code
		Chip Dimensions *Tolerances (page 6)				Tape Dimensions			Reel Dimensions			Bulk	Reel		
		L	W	H max	T	W	P1	K0	A	W1	W2 max				
0.001µF	CB018B0102+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0012	CB018B0122+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0015	CB018B0152+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0018	CB018B0182+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0022	CB018B0222+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0027	CB018B0272+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0033	CB018B0332+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0047	CB018B0472+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0056	CB018B0562+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0068	CB018B0682+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0082	CB018B0822+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.010µF	CB018B0103+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.012	CB018B0123+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.015	CB018B0153+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.018	CB018B0183+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.022	CB018B0223+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.027	CB018B0273+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.033	CB018B0333+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.039	CB018B0393+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	3900	BA	
0.047	CB028B0473+ --	3.30 (0.130)	2.50 (0.098)	1.80 (0.071)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.90 (0.075)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	2500	BA	
0.056	CB028B0563+ --	3.30 (0.130)	2.50 (0.098)	1.80 (0.098)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.90 (0.075)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	2500	BA	
0.068	CB028B0683+ --	3.30 (0.130)	2.50 (0.098)	1.80 (0.071)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.90 (0.075)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	2500	BA	
0.082	CB028B0823+ --	3.30 (0.130)	2.50 (0.098)	1.80 (0.071)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.90 (0.075)	180 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	2500	BA	

For other Values: upon request

Replace the + by the tolerance code: J = 5% or K = 10%

Replace the -- by the packaging suffix: -- = bulk

BA = tape & reel

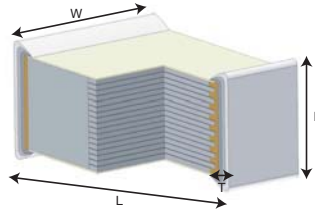


# Film Chip Capacitors



## PPS DIELECTRIC – CB Series

### CAPACITANCE VALUES (CR) AND NOMINAL VOLTAGES (VR)



millimeters (inches)

Capacitance Range (CR)	Ordering Code	VOLTAGE Vdc: 16V Vac: 10V											Packaging Unit		Reel Pkg Code
		Chip Dimensions *Tolerances (page 6)				Tape Dimensions			Reel Dimensions						
		L	W	H max	T	W	P1	K0	A	W1	W2 max	Bulk	Reel		
0.100µF	CB028B0104+ --	3.30 (0.130)	2.50 (0.098)	1.80 (0.071)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.90 (0.075)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	2500	BA	
0.120	CB038B0124+ --	4.50 (0.177)	3.20 (0.126)	2.30 (0.091)	0.60 (0.024)	12.0 (0.472)	8.00 (0.315)	2.60 (0.102)	180 (7.087)	12.4 (0.488)	18.4 (0.724)	1500	900	BA	
		4.50 (0.177)	3.20 (0.126)	2.30 (0.091)	0.60 (0.024)	12.0 (0.472)	8.00 (0.315)	2.60 (0.102)	330 (12.99)	12.4 (0.488)	18.4 (0.724)	1500	3600	BC	
0.150	CB038B0154+ --	4.50 (0.177)	3.20 (0.126)	2.30 (0.091)	0.60 (0.024)	12.0 (0.472)	8.00 (0.315)	2.60 (0.102)	180 (7.087)	12.4 (0.488)	18.4 (0.724)	1500	900	BA	
		4.50 (0.177)	3.20 (0.126)	2.30 (0.091)	0.60 (0.024)	12.0 (0.472)	8.00 (0.315)	2.60 (0.102)	330 (12.99)	12.4 (0.488)	18.4 (0.724)	1500	3600	BC	
VOLTAGE Vdc: 50V Vac: 40V															
0.001µF	CB018D0102+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0012	CB018D0122+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0015	CB018D0152+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.147)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0018	CB018D0182+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0022	CB018D0222+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0027	CB018D0272+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0033	CB018D0332+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0047	CB018D0472+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0056	CB018D0562+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0068	CB018D0682+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	3900	BA	
0.0082	CB018D0822+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	3900	BA	
0.010µF	CB018D0103+ --	3.30 (0.130)	1.60 (0.063)	1.15 (0.045)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.20 (0.047)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	3900	BA	
0.012	CB028D0123+ --	3.30 (0.130)	2.50 (0.098)	1.80 (0.071)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.90 (0.075)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	2500	BA	
0.015	CB028D0153+ --	3.30 (0.130)	2.50 (0.098)	1.80 (0.071)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.90 (0.158)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	2500	BA	
0.018	CB028D0183+ --	3.30 (0.130)	2.50 (0.098)	1.80 (0.071)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.90 (0.075)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	2500	BA	
0.022	CB028D0223+ --	3.30 (0.130)	2.50 (0.098)	1.80 (0.071)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	1.90 (0.075)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	2500	BA	
0.027	CB028D0273+ --	3.30 (0.130)	2.50 (0.098)	2.10 (0.083)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	2.30 (0.091)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	2000	BA	
0.033	CB028D0333+ --	3.30 (0.130)	2.50 (0.098)	2.10 (0.083)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	2.30 (0.091)	180 (7.087)	8.4 (0.331)	14.4 (0.567)	2000	2000	BA	

For other Values: upon request

Replace the + by the tolerance code: J = 5% or K = 10%

Replace the -- by the packaging suffix: -- = bulk

BA or BC = tape & reel

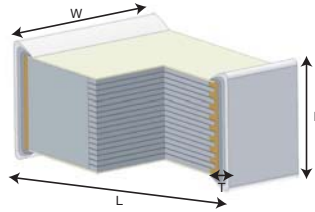


# Film Chip Capacitors



## PPS DIELECTRIC – CB Series

### CAPACITANCE VALUES (CR) AND NOMINAL VOLTAGES (VR)



millimeters (inches)

Capacitance Range (CR)	Ordering Code	VOLTAGE Vdc: 50V Vac: 40V												
		Chip Dimensions *Tolerances (page 6)				Tape Dimensions			Reel Dimensions			Packaging Unit		Reel Pkg Code
		L	W	H max	T	W	P1	K0	A	W1	W2 max	Bulk	Reel	
0.039	CB028D0393+ --	3.30 (0.130)	2.50 (0.098)	2.1 (0.083)	0.50 (0.020)	8.00 (0.315)	4.00 (0.158)	2.30 (0.091)	181 (7.087)	8.40 (0.331)	14.4 (0.567)	2000	2000	BA
0.047	CB038D0473+ --	4.50 (0.1777)	3.20 (0.126)	2.4 (0.095)	0.60 (0.024)	12.0 (0.472)	8.00 (0.315)	2.60 (0.102)	180 (7.087)	12.4 (0.488)	18.4 (0.724)	1500	900	BA
		4.50 (0.177)	3.20 (0.126)	2.4 (0.095)	0.60 (0.024)	12.0 (0.472)	8.00 (0.315)	2.60 (0.102)	330 (12.99)	12.4 (0.488)	18.4 (0.724)	1500	3600	BC
0.056	CB038D0563+ --	4.50 (0.177)	3.20 (0.126)	2.40 (0.095)	0.60 (0.024)	12.0 (0.472)	8.00 (0.315)	2.60 (0.102)	180 (7.087)	12.4 (0.488)	18.4 (0.724)	1500	900	BA
		4.50 (0.177)	3.20 (0.126)	2.40 (0.095)	0.60 (0.024)	12.0 (0.472)	8.00 (0.315)	2.60 (0.102)	330 (12.99)	12.4 (0.488)	18.4 (0.724)	1500	3600	BC
0.068	CB038D0683+ --	4.50 (0.177)	3.20 (0.126)	2.40 (0.095)	0.60 (0.024)	12.0 (0.472)	8.00 (0.315)	2.60 (0.102)	180 (7.087)	12.4 (0.488)	18.4 (0.724)	1500	900	BA
		4.50 (0.177)	3.20 (0.126)	2.40 (0.095)	0.60 (0.024)	12.0 (0.472)	8.00 (0.315)	2.60 (0.102)	330 (12.99)	12.4 (0.488)	18.4 (0.724)	1500	3600	BC
0.082	CB038D0823+ --	4.50 (0.177)	3.20 (0.126)	2.40 (0.095)	0.60 (0.024)	12.0 (0.472)	8.00 (0.315)	2.60 (0.102)	180 (7.087)	12.4 (0.488)	18.4 (0.724)	1500	900	BA
		4.50 (0.177)	3.20 (0.126)	2.40 (0.095)	0.60 (0.024)	12.0 (0.472)	8.00 (0.315)	2.60 (0.102)	330 (12.99)	12.4 (0.488)	18.4 (0.724)	1500	3600	BC
0.100µF	CB038D0104+ --	4.50 (0.177)	3.20 (0.126)	2.40 (0.095)	0.60 (0.024)	12.0 (0.472)	8.00 (0.315)	2.60 (0.102)	180 (7.087)	12.4 (0.488)	18.4 (0.724)	1500	900	BA
		4.50 (0.177)	3.20 (0.126)	2.40 (0.095)	0.60 (0.024)	12.0 (0.472)	8.00 (0.315)	2.60 (0.102)	330 (12.99)	12.4 (0.488)	18.4 (0.724)	1500	3600	BC

For other Values: upon request

Replace the + by the tolerance code: J = 5% or K = 10%

Replace the -- by the packaging suffix: -- = bulk

BA or BC = tape & reel

# Film Chip Capacitors



## PPS DIELECTRIC – CB Series

### MOUNTING AND SOLDERING RECOMMENDATIONS

#### SOLDERING PROFILE

The capacitors can be mounted using infrared and vapor phase soldering following recommended below. They are suitable for wave soldering.

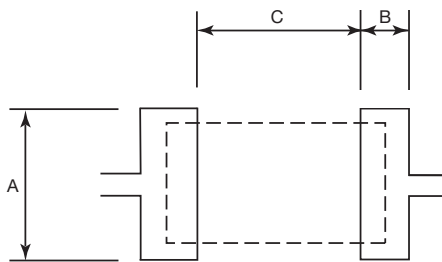
Phase	Size	Temperature (°C)*	Time (s)
Preheating	All	160 to 180°C max	180s max.
Soldering	1206 to 1812	T max= 260°C and 10 s between T max and Tmax-5°C	90s at temperature > 217°C

\*Reflow soldering referring to JEDEC Standard with some limitations  
\*JEDEC J-Std 020C

#### RECOMMENDED SOLDER PASTE THICKNESS

For optimum solderability, the recommended soldering paste thickness: 1206 to 1812 :150 to 200µm

In case of hand soldering, the temperature of the soldering iron should not be above 250°C. Special care must be taken to avoid touching the capacitor body with the iron tip.



#### PAD DIMENSIONS: millimeters (inches)

Size Code	Case Size	A	B	C
01	1206	1.30 (0.051)	1.30 (0.051)	2.20 (0.087)
02	1210	2.00 (0.079)	1.30 (0.051)	2.20 (0.087)
03	1812	3.00 (0.118)	1.50 (0.059)	3.50 (0.137)

#### RECOMMENDED CLEANING

To clean flux from the PC board assembly, the recommended products are: ethanol, isopropyl alcohol, and deionized water wash. The cleaning products to avoid are: Toluene, Xylene, Trichloroethylene, Terpene Cleaner EC-7, surface active agent. In case of using another solvent, please contact us.

#### OTHER CAUTIONS

**Flame retardancy:** the dielectric film is not a flame retardant material.

**Environment:** contact us when chips are used in humid or gas atmosphere and /or when using resin.

**Recommended handling:** do not use edged tools, so not to damage the capacitors.

#### TIN WHISKERS TESTS : JEDEC STANDARD NO 22A121

Stress Type	Ref. Spec.	Test Conditions	Analysis	Results
Temperature cycling	JESD22-A104	-55°C +85(+10/-0)°C air 5 to 10mn soak 3 cycles/hour	SEM x 1000	Pass
Ambient Temperature / Humidity Storage		30+/-2°C - 60+/-3% RH -2000H	SEM x 1000	Pass
High Temperature / Humidity Storage		70+/-5°C - 93+3/-2% RH -1000H	SEM x 1000	Pass



# Film Chip Capacitors

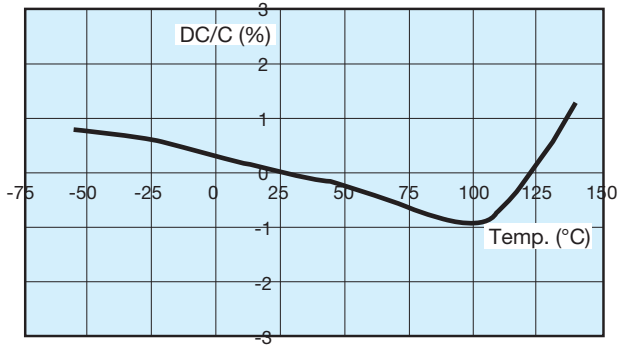


## PPS DIELECTRIC – CB Series

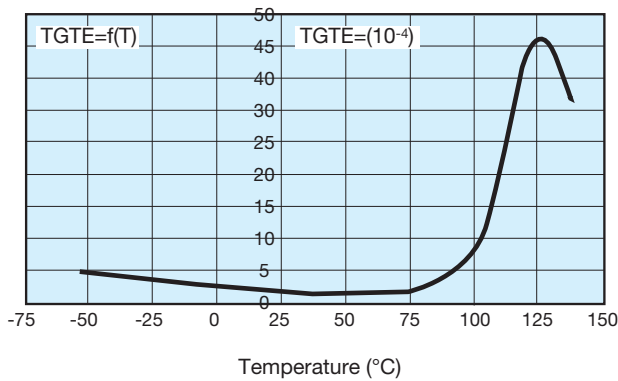
### ELECTRICAL CHARACTERISTICS VERSUS TEMPERATURE AND FREQUENCY

#### ELECTRICAL CHARACTERISTICS

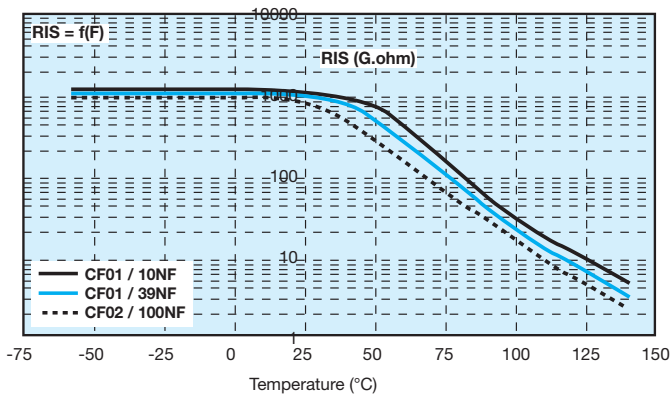
##### Capacitance



##### Dissipation Factor

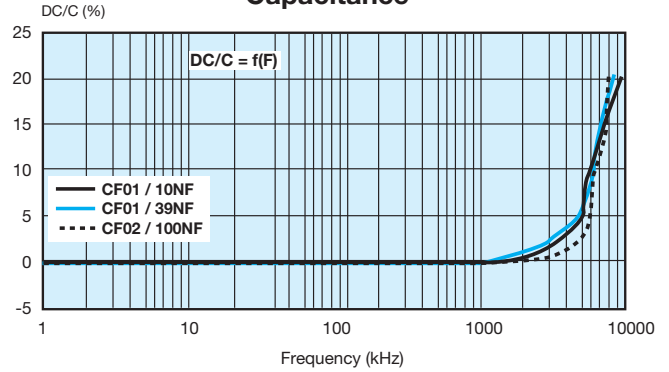


##### Insulation Resistance

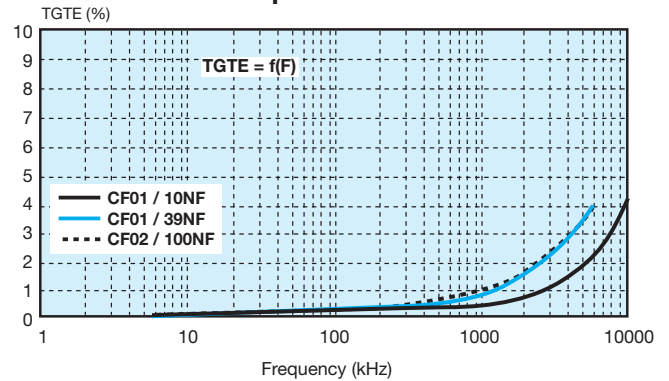


#### FREQUENCY CHARACTERISTICS

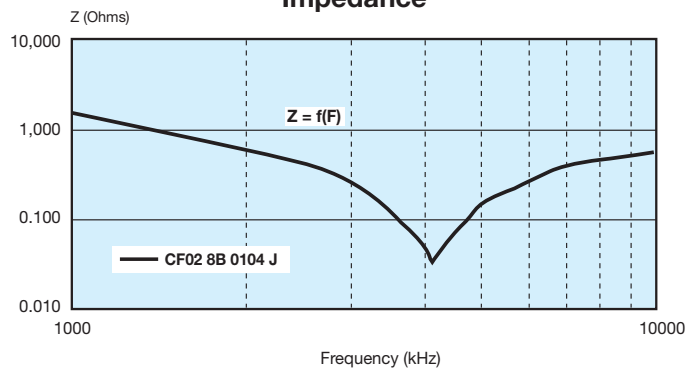
##### Capacitance



##### Dissipation Factor



##### Impedance

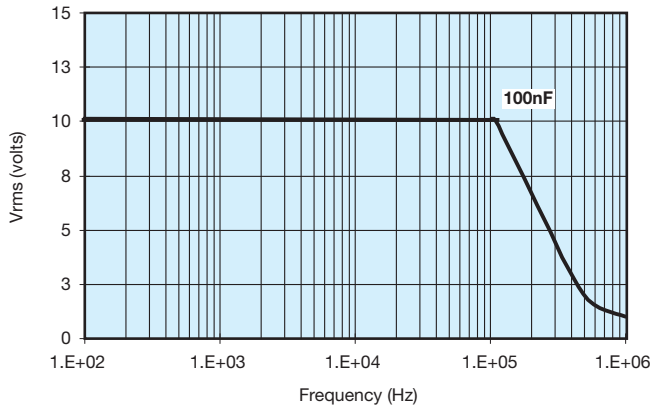


### RMS VOLTAGE AND CURRENT VERSUS FREQUENCY

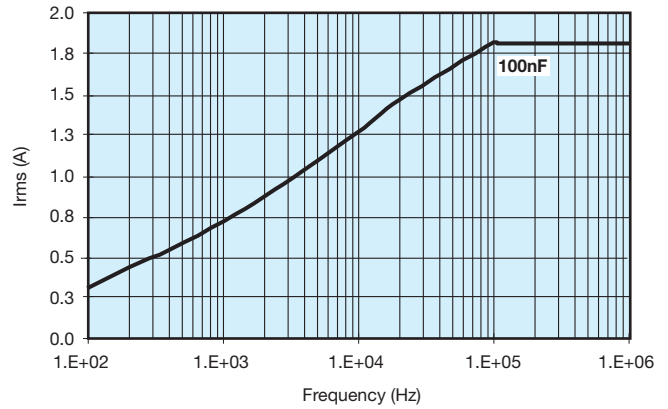
#### MAXIMUM VOLTAGE ( $V_{rms}$ ) AND CURRENT ( $I_{rms}$ ) vs FREQUENCY

Typical curves results from measurement carried out at ambient temperature (25°C) and sinusoidal wave-forms (for size CB01 to CB03)

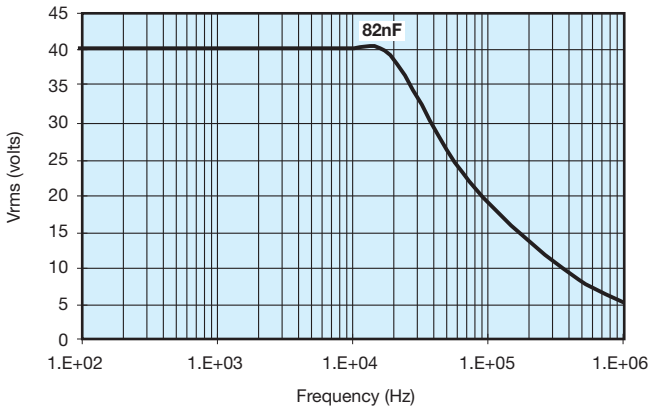
16 Vdc



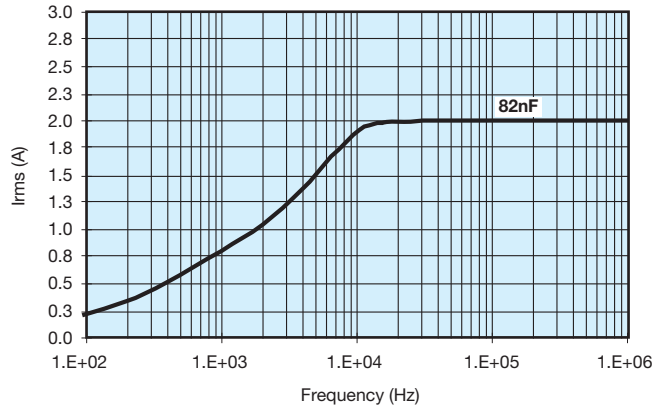
16 Vdc



50 Vdc



50 Vdc



# Film Chip Capacitors



## PPS DIELECTRIC – CB Series – RoHS

### MATERIALS CONTROLLED BY ROHS (PPM BY WEIGHT):

Mass / unit (g)	Lead	Mercury	Cadmium	Hexavalent Chromium	PBB	PBDE
CB range	0	0	0	0	0	0
RoHS Limit (ppm)	1	1	100	1	1	1
Pass/Fail	Pass	Pass	Pass	Pass	Pass	Pass

This product has been tested and found to be compliant with all requirements, provisions, and exemptions of EU Directive 2002/95/EC of the European Parliament and Council of January 27, 2003. On the Restriction of use of certain Hazardous Substances (RoHS) in electrical and electronic equipment and EU Directive 2000/53/EC regarding ELV or End of Life Vehicle.

### ROHS / ELV STATUS

External Plating  
100% Matte Sn as standard

### LEAD-FREE STATUS / MOISTURE SENSITIVITY RANKING

Pb Free Reflow Solder compliant, MSL = 2a.  
Reflow soldering referring to Jedec Standard with some limitations. Additional JESD-97 data to be phased in MSL e3 termination.

### PRODUCT LABELING:

(For informational purposes only to be phased in on reel and container.)

### PRODUCT TRACEABILITY:

Full internal material traceability by reference to unique lot number marked on reel and external package.

Pb Free:



RoHS Compliant:

