

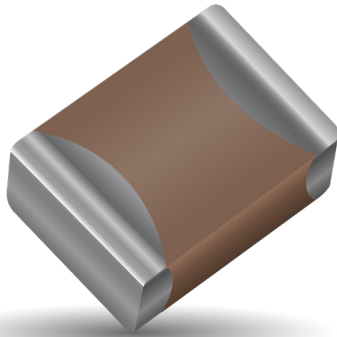


**THE DATASHEET OF
CB028B0823JBA**



CB SERIES: PPS DIELECTRIC – LEAD FREE VERSION

General Description



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.

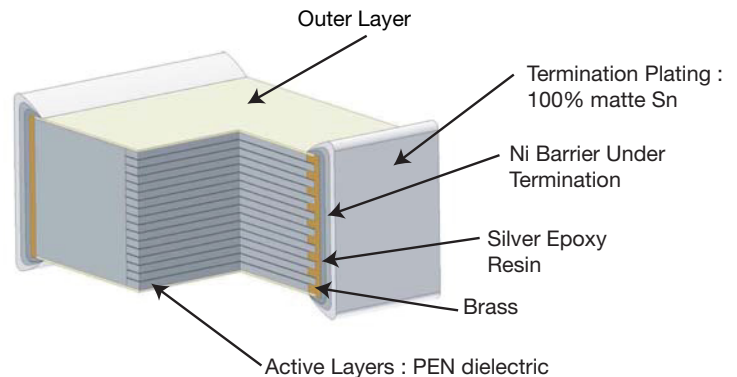
APPLICATIONS

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...)



PERFORMANCE CHARACTERISTICS

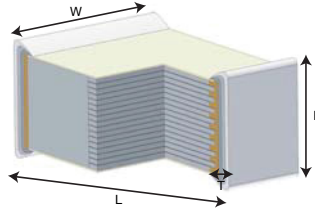
| | |
|------------------------------------|---|
| Climatic Category | 55/125/56 |
| Capacitance Range | 1nF to 180nF |
| Tolerance on C _R | ±2%, ±5%, ±10% |
| Nominal Voltages | 16Vdc to 50Vdc |
| Test Voltage | 1.4Vr 2 sec. at 25°C |
| Soldering methods | IR vapor phase reflow |
| Tangent of Loss Angle at 1kHz (DF) | < 50 x 10 ⁻⁴ |
| Insulation resistance minimum : IR | for C ≤ 0.33μF IR > 1000 MΩ at 20°C for 1 min. charge at 10VDC for VR < 100VDC |
| Temperature range | -55°C to 125°C |
| A.C. applications | for high frequency A.C. application please check with AVX |

No self-healing properties

CB SERIES: PPS DIELECTRIC – LEAD FREE VERSION

Capacitance Values & Nominal Voltages

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 | | |
| 0.001µF | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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 | 3500 | 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: G = 2%, J = 5% or K = 10%

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

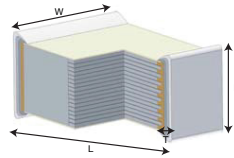
BA or BC = tape & reel

CB SERIES: PPS DIELECTRIC – LEAD FREE VERSION



Capacitance Values & Nominal Voltages

CAPACITANCE VALUES (CR) AND NOMINAL VOLTAGES (VR)



millimeters (inches)

| Capacitance Range (CR) | Ordering Code | VOLTAGE Vdc: 16V Vac: 10V | | | | | | | | | | | | |
|---------------------------|----------------|--------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|------|---------------|
| | | 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 | |
| 0.100µF | CB028B0104+ -- | 3.30 (0.130) | 2.50 (0.098) | 2.10 (0.083) | 0.50 (0.020) | 8.00 (0.315) | 4.00 (0.158) | 2.33 (0.092) | 180 (7.087) | 8.4 (0.331) | 14.4 (0.567) | 2000 | 2000 | 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 |
| 0.180 | CB038B0184+ -- | 4.50 (0.177) | 3.20 (0.126) | 2.50 (0.098) | 0.60 (0.024) | 12.0 (0.472) | 8.00 (0.315) | 2.60 (0.102) | 180 (7.09) | 12.4 (0.488) | 18.4 (0.724) | 1500 | 900 | BA |
| | | 4.50 (0.177) | 3.20 (0.126) | 2.50 (0.098) | 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) | 8.40 (0.331) | 14.4 (0.567) | 2000 | 3500 | 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) | 8.40 (0.331) | 14.4 (0.567) | 2000 | 3500 | 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) | 8.40 (0.331) | 14.4 (0.567) | 2000 | 3500 | 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) | 8.40 (0.331) | 14.4 (0.567) | 2000 | 3500 | 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) | 8.40 (0.331) | 14.4 (0.567) | 2000 | 3500 | 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) | 8.40 (0.331) | 14.4 (0.567) | 2000 | 3500 | 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) | 8.40 (0.331) | 14.4 (0.567) | 2000 | 3500 | 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) | 8.40 (0.331) | 14.4 (0.567) | 2000 | 3500 | 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) | 8.40 (0.331) | 14.4 (0.567) | 2000 | 3500 | 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) | 8.40 (0.331) | 14.4 (0.567) | 2000 | 3500 | 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) | 8.40 (0.331) | 14.4 (0.567) | 2000 | 3500 | 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) | 8.40 (0.331) | 14.4 (0.567) | 2000 | 3500 | 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) | 8.40 (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) | 8.40 (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) | 8.40 (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) | 8.40 (0.331) | 14.4 (0.567) | 2000 | 2500 | BA |

For other Values: upon request

Replace the + by the tolerance code: G = 2%, J = 5% or K = 10%

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

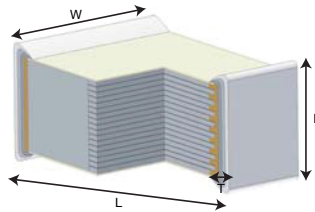
BA or BC = tape & reel

CB SERIES: PPS DIELECTRIC – LEAD FREE VERSION

Capacitance Values & Nominal Voltages



CAPACITANCE VALUES (CR) AND NOMINAL VOLTAGES (VR)



millimeters (inches)

| Capacitance Range (CR) | Ordering Code | VOLTAGE Vdc: 50V Vac: 40V | | | | | | | | | | | 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 | | |
| 0.027 | 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) | 8.40 (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) | 8.40 (0.331) | 14.4 (0.567) | 2000 | 2000 | BA | |
| 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: G = 2%, J = 5% or K = 10%

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

BA or BC = tape & reel

CB SERIES: PPS DIELECTRIC – LEAD FREE VERSION

Mounting and Soldering Recommendations

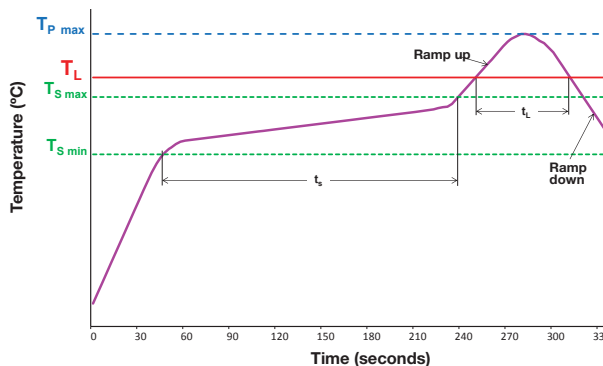
MOUNTING AND SOLDERING RECOMMENDATIONS SOLDERING PROFILE

The capacitors can be mounted using infrared and vapor phase soldering following recommended below. They are NOT suitable for wave soldering.

All temperature refer to topside of the package, measured on the package body surface.

| Profile Feature | 1206 to 1812 |
|--|------------------|
| Ramp-Up ($T_{s,max}$ to T_p) | 3°C / second max |
| Preheat | |
| - Temperature Min ($T_{s,min}$) | 150°C |
| - Temperature Max ($T_{s,max}$) | 200°C |
| - Time ($t_{s,min}$ to $t_{s,max}$) | 180 sec. max |
| Time maintained above | |
| - Temperature (T_L) | 217°C |
| - Time (t_L) | 60 sec. max |
| Peak temperature ($T_{p,max}$) | 260°C |
| Customer Peak temperature (T_p) | < 260°C |
| Time within 5°C of peak temperature ($T_p \pm 5^\circ\text{C}$)* | 10 sec. |
| Ramp-Down | 6°C / sec. |

* Example : $T_p = 238.5^\circ\text{C} \Rightarrow t_p = \text{time between } 238.5^\circ\text{C and } 233.5^\circ\text{C (} T_p \pm 5^\circ\text{C)}$

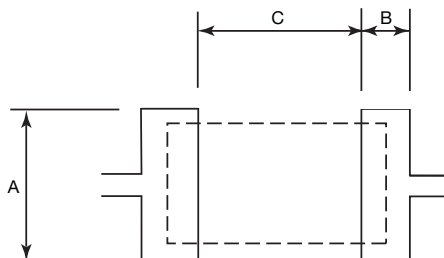


Reflow soldering referring to JEDEC Standard with some limitations
JEDEC J-Std 020C

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 10 minutes 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 |

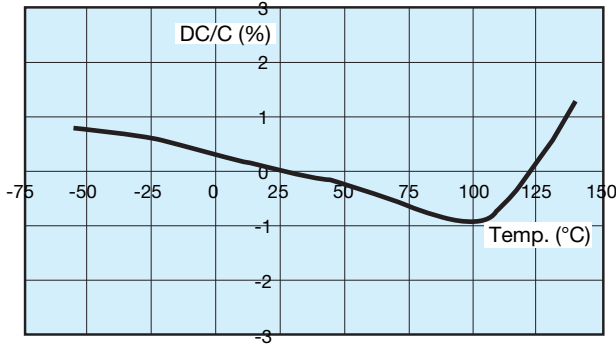
CB SERIES: PPS DIELECTRIC – LEAD FREE VERSION

Electrical Characteristics versus Temperature and Frequency

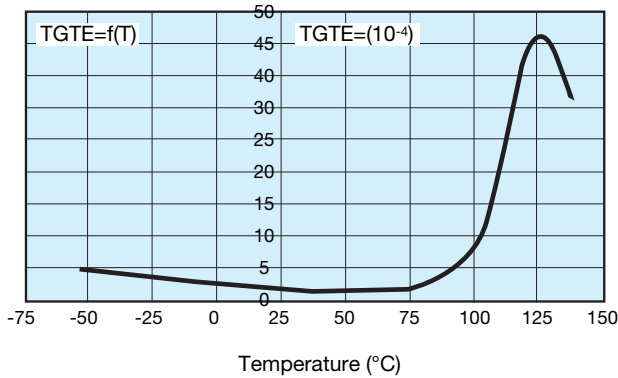
ELECTRICAL CHARACTERISTICS VERSUS TEMPERATURE AND FREQUENCY

ELECTRICAL CHARACTERISTICS

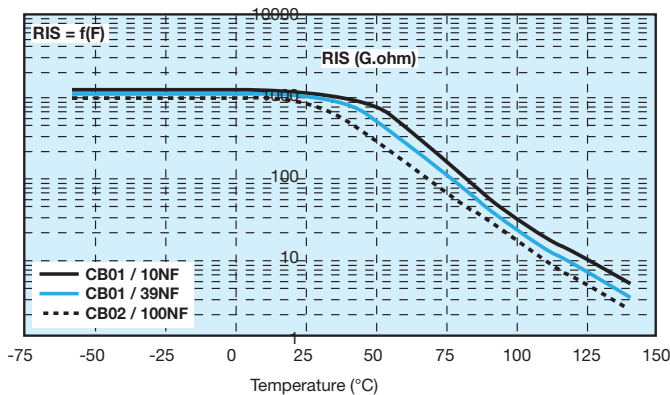
Capacitance



Dissipation Factor

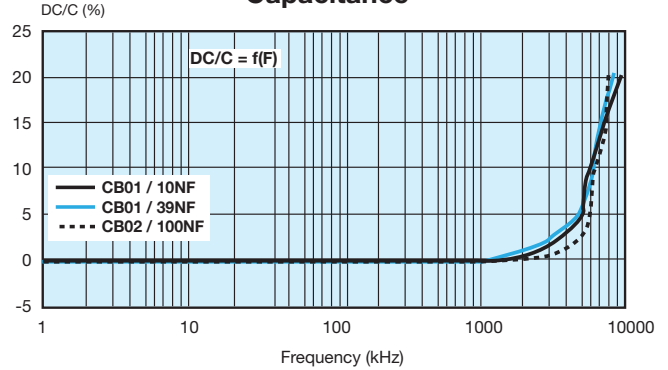


Insulation Resistance

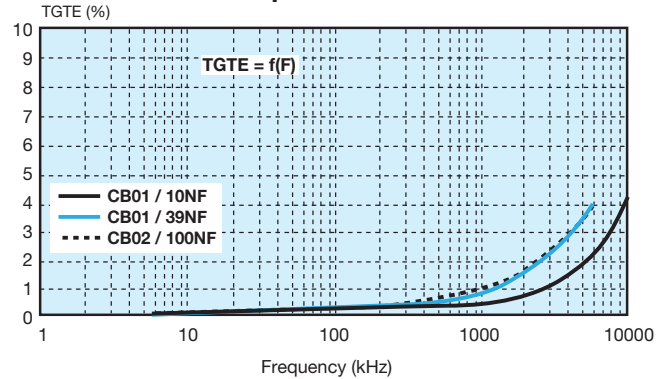


FREQUENCY CHARACTERISTICS

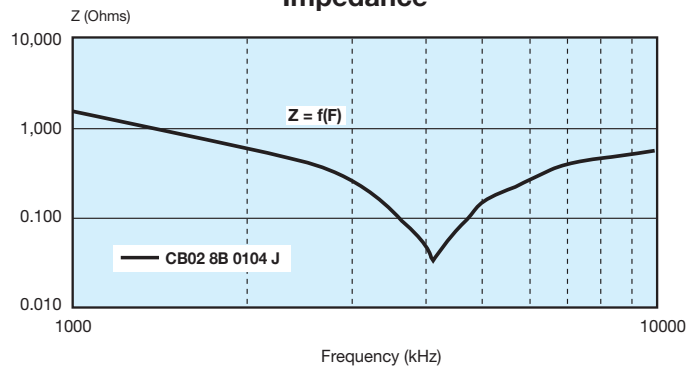
Capacitance



Dissipation Factor



Impedance



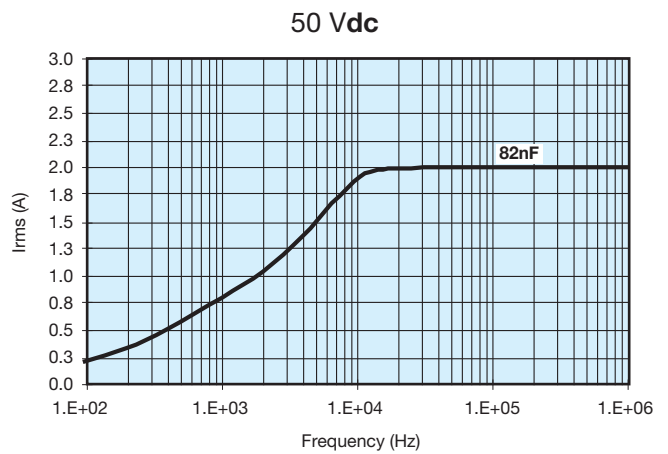
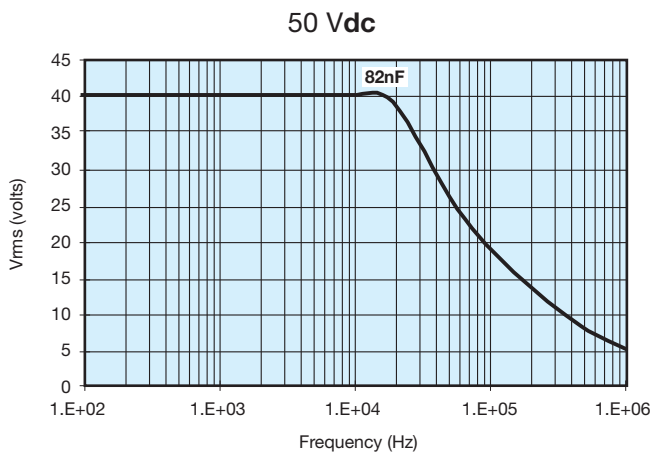
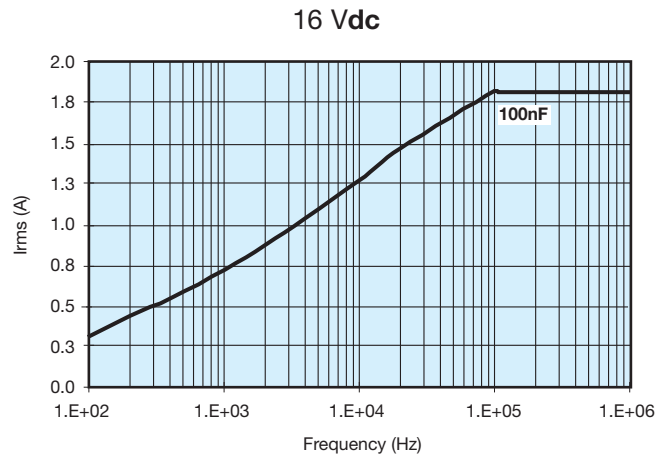
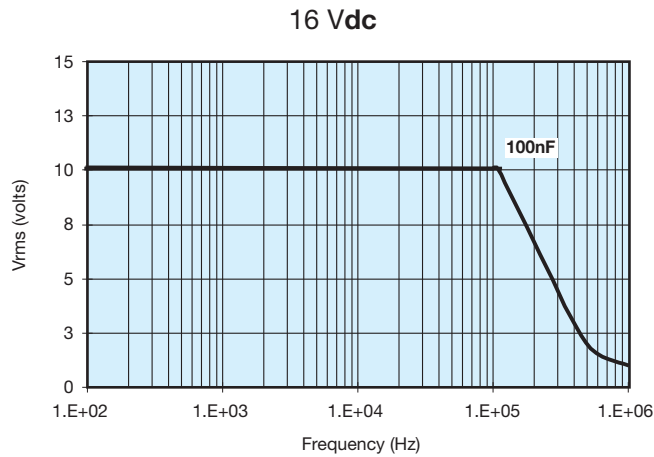
CB SERIES: PPS DIELECTRIC – LEAD FREE VERSION

RMS Voltage and Current versus Frequency

RMS VOLTAGE AND CURRENT VERSUS FREQUENCY

MAXIMUM VOLTAGE (VRMS) AND CURRENT (IRMS) VS FREQUENCY

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



CB SERIES: PPS DIELECTRIC – LEAD FREE VERSION

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) | 1000 | 1000 | 100 | 1000 | 1000 | 1000 |
| 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:



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