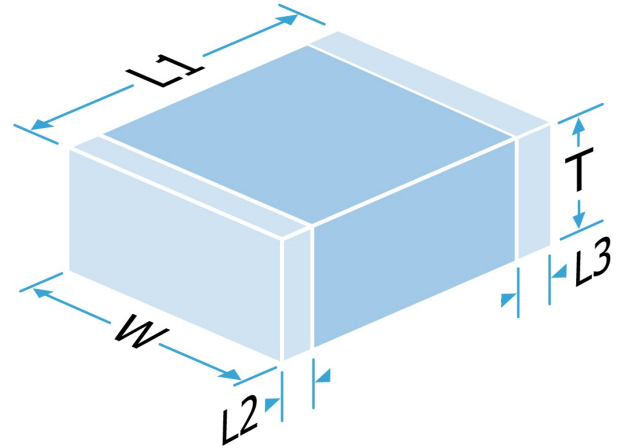


Multilayer Ceramic Chip Capacitor

Part Number: 0805Y0500104KXTM01

Description: 0805 50Vdc 100nF ±10% X7R (2R1) (CTI ≥ 600)

A range of ceramic MLCC's with a modified internal electrode structure, aimed at short-circuit failure mitigation in case of mechanical cracking. Available with a variety of termination options including FlexiCap™, the world's first commercially available flexible termination.



Mechanical Specification

Size Code	0805
Length (L1) in mm (")	2.0 +0.30/-0.20 (0.079 +0.012/-0.008)
Width (W) in mm (")	1.25 ± 0.20 (0.049 ± 0.008)
Thickness (T) in mm (")	1.3 Max (0.051 Max)
Minimum Termination Band (L2,L3) in mm (")	0.25 (0.010)
Maximum Termination Band (L2,L3) in mm (")	0.75 (0.030)
Termination Material	FlexiCap™ Polymer termination, Nickel barrier, Sn Plated Solder (RoHS compliant)
Solderability	IEC-60068-2-58
Packaging	7" Reel Horizontal Orientation, 3000 per reel

General Electrical Specification

Rated Voltage	50Vdc
Nominal Capacitance Value	100nF
Capacitance Tolerance	±10%
Tangent of Loss Angle (Tan δ)	≤0.025
Capacitance and Tan δ Test Conditions	1.0Vrms @ 1kHz
Voltage Proof	125Vdc
(Voltage applied for 5 secs max. @ 50mA max. charge current. 50% Max, RH)	
Min Insulation Resistance (IR)	10.00GOhm @ 50Vdc
Dielectric Classification	X7R (2R1) (CTI ≥ 600)
Rated Temperature Range	-55°C / +125°C
Maximum Capacitance Change over Temperature Range	No DC Voltage ±15%
Climatic Category (IEC)	Rated DC Voltage -
Ageing Characteristic	55/125/56
	<2% per decade (nominal capacitance is 1000 hour value)

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Date: Monday, January 12, 2026

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Multilayer Ceramic Chip Capacitor

Part Number: 0805Y0500104KXTM01

Description: 0805 50Vdc 100nF ±10% X7R (2R1) (CTI ≥ 600)

Environmental

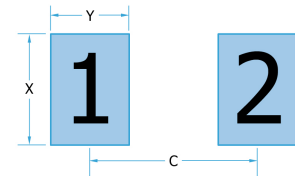
RoHS Compliant to 2011/65/EC as amended by 2015/863/EU	Compliant
REACH Compliant	250 compliant
California Proposition 65	No exposure risk

Board Layout

Knowles' conventional 2-terminal chip capacitors can generally be mounted using pad designs in accordance with international specification IPC-7351, Generic Requirements for Surface Mount Design and Land Pattern Standards, but there are some other factors that have been shown to reduce mechanical stress, such as reducing the pad width to less than the chip width. In addition, the position of the chip on the board should be considered.

IPC-7351 pad design

	0805	
C	1.80mm	0.071"
Y	1.15mm	0.045"
X	1.45mm	0.057"

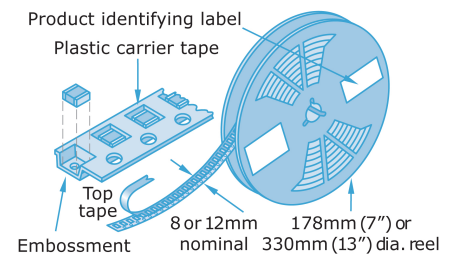


Some high voltage parts may require modifications to the board layout and/or the addition of a conformal coating to prevent flashover, especially under high humidity conditions. Board cleanliness and environmental conditions can also impact this. Refer to application note AN0043 for further information.

Packaging

Tape packaging information for tape-and-reel parts:

Tape and reel packing of surface mounting chip capacitors for automatic placement are in accordance with IEC60286-3.



Soldering

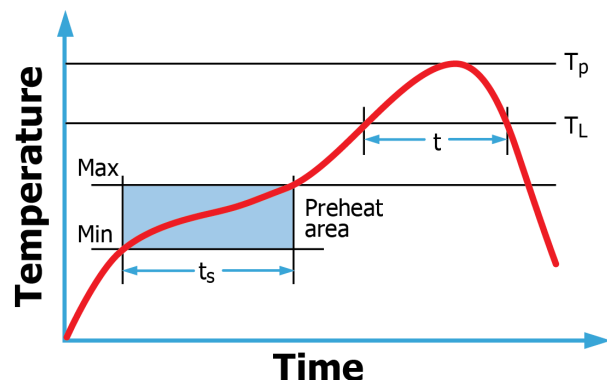
Reflow solder in accordance with IPC-A-610. Recommended reflow profile as laid down in IPC/JEDEC J-STD-020.

Wave soldering is also possible, but care must be taken for case sizes 1210 and larger and component thickness >1.0mm. Trials are encouraged.

Hand soldering is not recommended and can lead to component damage through thermal shock.

PdAg terminations are primarily intended for conductive epoxy attachment - they may be suitable for soldering but trials are recommended.

Application notes with mounting and handling guidance are available on request.



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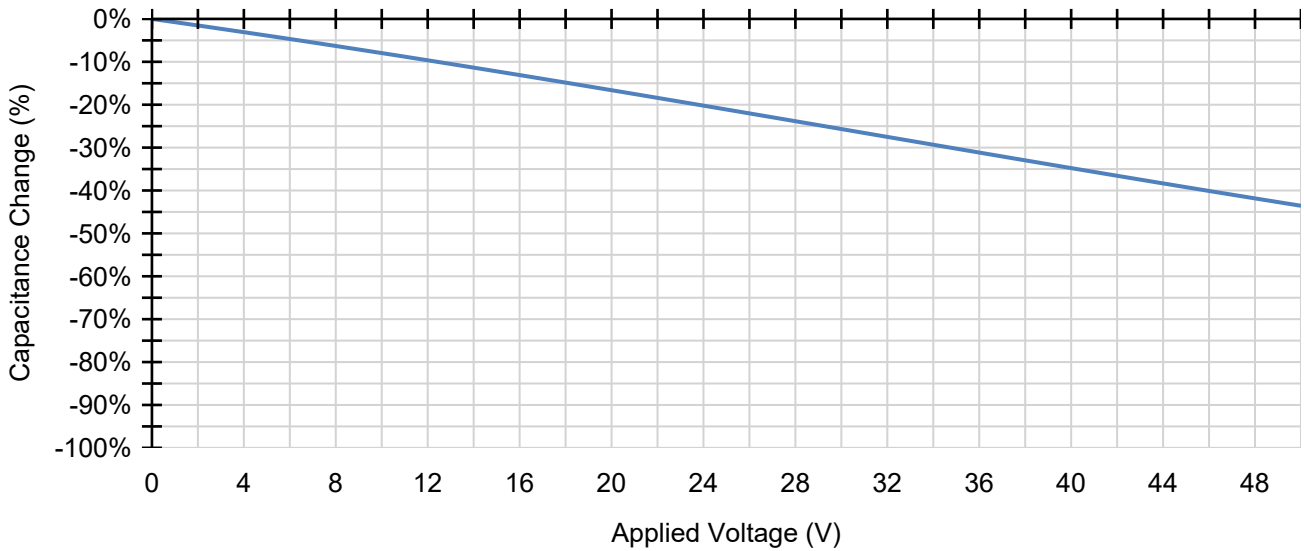
Multilayer Ceramic Chip Capacitor

Part Number: 0805Y0500104KXTM01

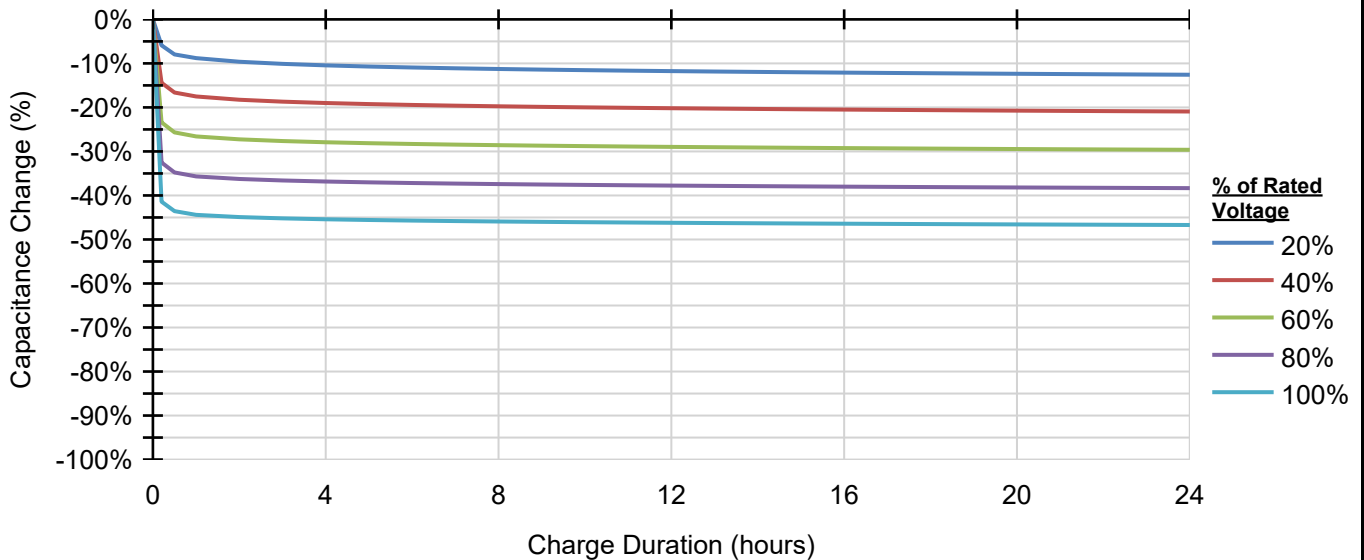
Description: 0805 50Vdc 100nF ±10% X7R (2R1) (CTI ≥ 600)

DC Bias Characteristics

VCC Characterization



% Capacitance Drift with Time



The curves represent the 'typical worst case' curve – i.e. the typical curve of a 'worst case' component having the most capacitance loss delivered against the specification.

Knowles Precision Devices reserve the right to substitute any component with a similar component of the same or higher specification. In some cases this may mean that the capacitance drop with applied voltage is, in practice, less than the curve shown

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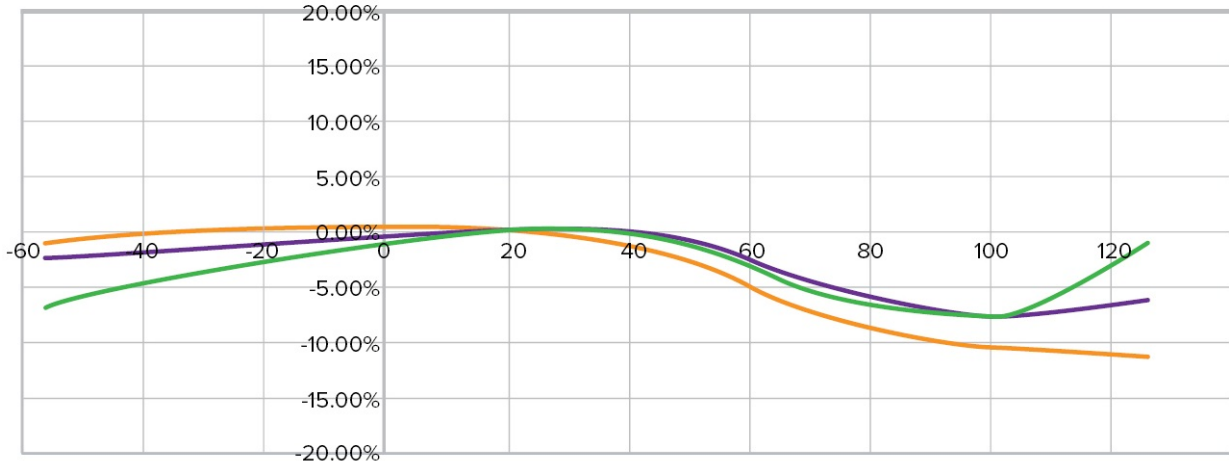
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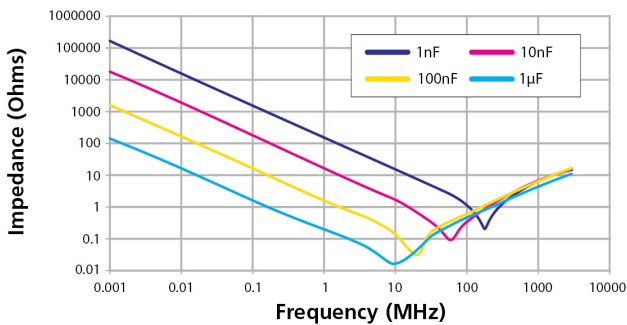
Description: 0805 50Vdc 100nF ±10% X7R (2R1) (CTI ≥ 600)

Typical Capacitance Change vs Temperature

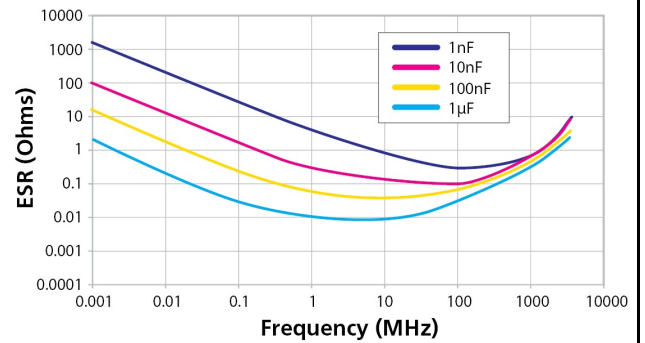


Typical TC Curves for X7R capacitors showing different dielectric types

Stable X7R Dielectric



Stable X7R Dielectric



Stable X7R Dielectric — 10nF



Typical Performance Data - X7R

For part specific data, please contact your local sales office
This data is for reference only and does not constitute a specification.

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