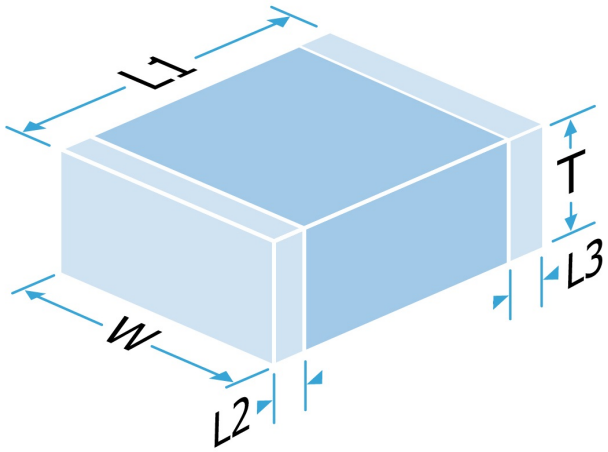
Multilayer Ceramic Chip Capacitor

Part Number: 1206J2500103KXTH20

Description: 1206 250Vdc 10nF ±10% Class II (200ºC)

A range of MLC capacitors with defined capacitance variation and rated for reliable operation at temperatures up to +200°C. These components suit a variety of applications where increased temperature operation is required. Available 100% lead free RoHS compliant.



Mechanical Specification

Size Code	1206
Length (L1) in mm (")	3.2 ± 0.20 (0.126 ± 0.008)
Width (W) in mm (")	1.6 ± 0.20 (0.063 ± 0.008)
Thickness (T) in mm (")	1.7 Max (0.068 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	Nickel Barrier, Sn Plated Solder (RoHS compliant)
Solderability	IEC-60068-2-58
Packaging	7" Reel Horizontal Orientation, 2500 per reel

General Electrical Specification

Rated Voltage	250Vdc
Nominal Capacitance Value	10nF
Capacitance Tolerance	±10%
Tangent of Loss Angle (Tan δ)	≤0.025
Capacitance and Tan δ Test Conditions	1.0Vrms @ 1kHz
Voltage Proof (Voltage applied for 5 secs max. @ 50mA max. charge current)	500Vdc
Min Insulation Resistance (IR)	100.00GOhm @ 100Vdc
Dielectric Classification	Class II (200ºC)
Rated Temperature Range	-55°C / +200°C
Maximum Capacitance Change over Temperature Range	No DC Voltage ±15% to 125°C (Typ -55% at 200°C) Rated DC Voltage -
Climatic Category (IEC)	-
Ageing Characteristic	<2% per decade (nominal capacitance is 1000 hour value)

Knowles Precision Devices - Sales
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Date: Tuesday, May 14, 2024

20240514 142612359UTC

Multilayer Ceramic Chip Capacitor

Part Number: 1206J2500103KXTH20

Description: 1206 250Vdc 10nF ±10% Class II (200ºC)

Environmental

RoHS Compliant to 2011/65/EC as amended by 2015/863/EU	Compliant
REACH Compliant	240 compliant
California Proposition 65	No exposure risk

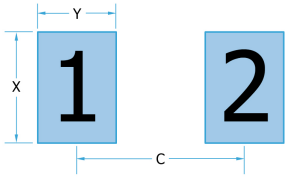
Board Layout

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.

Some high voltage parts may require modifications to the board layout and/or the addition of a conformal coating to prevent flashover. Refer to application note AN0043 for further information.

IPC-7351 pad design

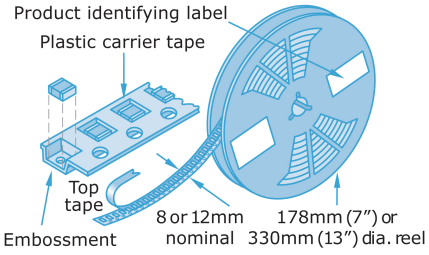
	1206	
C	3.00mm	0.118"
Y	1.15mm	0.045"
X	1.80mm	0.071"



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.



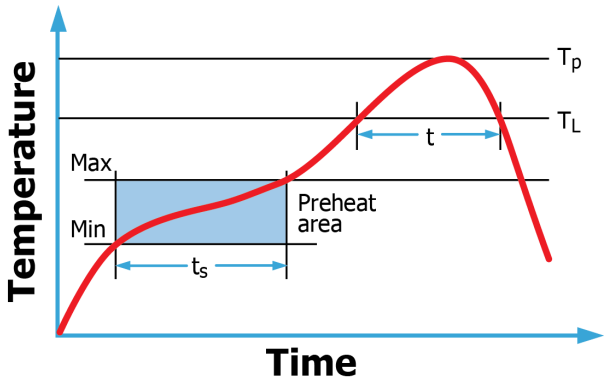
Soldering

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: 1206J2500103KXTH20

Description: 1206 250Vdc 10nF ±10% Class II (200ºC)

DC Bias Characteristics

Insufficient data exists to automatically calculate dc bias data for this specific part number.

Please contact your local sales office and our engineering teams will be happy to look at requests for part specific data.

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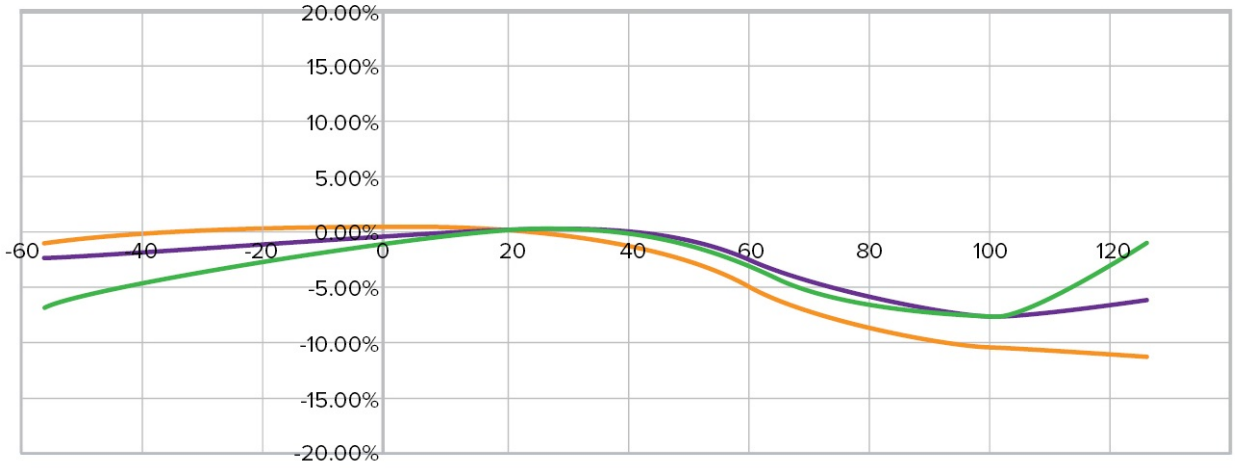
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Multilayer Ceramic Chip Capacitor

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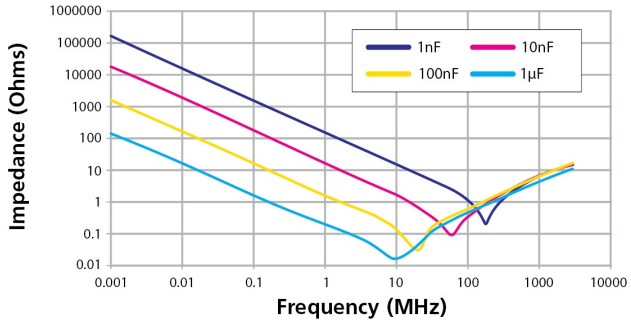
Description: 1206 250Vdc 10nF ±10% Class II (200ºC)

Typical Capacitance Change vs Temperature

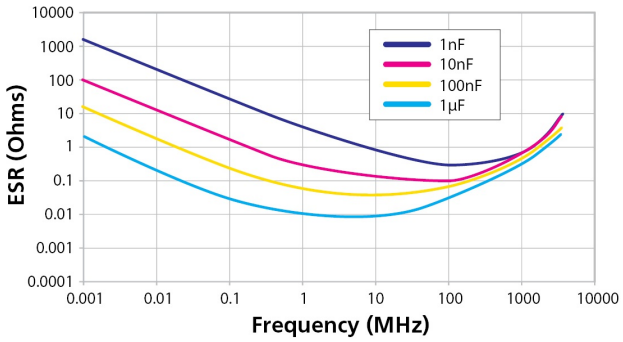


Typical TC Curves for X7R capacitors showing different dielectric types

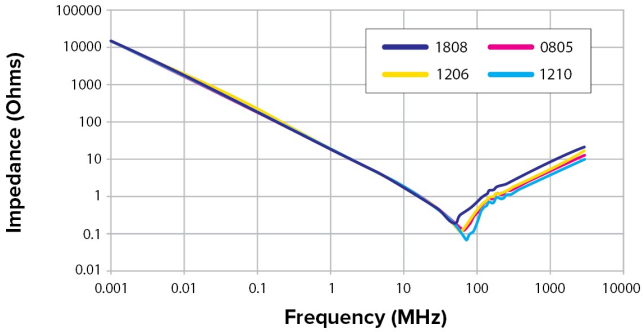
Stable X7R Dielectric



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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