

Part Number: 1210J1K00222KJT

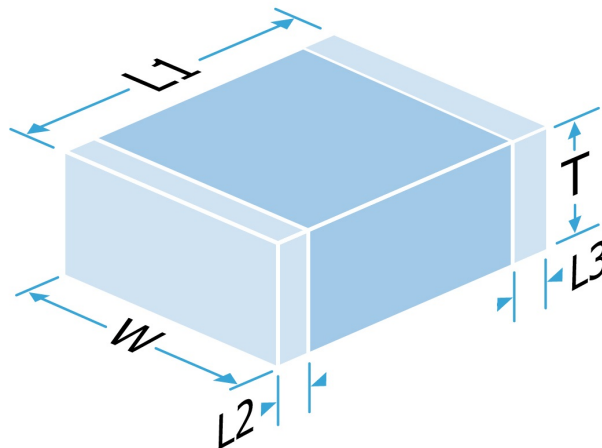
Description: 1210 1000Vdc 2.2nF $\pm 10\%$ X7R (2R1) (CTI ≥ 600)

A range of X7R MLC capacitors to suit a variety of applications. In a wide selection of chip sizes, rated voltages and terminations, including FlexiCap™, the world's first commercially available flexible termination.

WS2, WR2, WS3 and WR3 parts use StackiCap™ patented construction technology.

DR1, WR2 and WR3 parts have a voltage de-rating above 105°C.

Suffix code PXX or PX mandates the use of precious metal electrode (PME) materials. This may incur additional costs.



Mechanical Specification

Size Code	1210
Length (L1) in mm (")	3.2 ± 0.20 (0.126 ± 0.008)
Width (W) in mm (")	2.5 ± 0.20 (0.098 ± 0.008)
Thickness (T) in mm (")	2.0 Max (0.08 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, 2000 per reel
Conformal Coating	Not normally required

General Electrical Specification

Rated Voltage	1000Vdc
Nominal Capacitance Value	2.2nF
Capacitance Tolerance	$\pm 10\%$
Tangent of Loss Angle (Tan δ)	≤ 0.025
Capacitance and Tan δ Test Conditions	1.0Vrms @ 1kHz
Voltage Proof	1200Vdc
(Voltage applied for 5 secs max. @ 50mA max. charge current. 50% Max, RH)	
Min Insulation Resistance (IR)	100.00GOhm @ 100Vdc
Dielectric Classification	X7R (2R1) (CTI ≥ 600)
Rated Temperature Range	-55°C / +125°C
Maximum Capacitance Change over Temperature Range	No DC Voltage $\pm 15\%$ Rated DC Voltage -
Climatic Category (IEC)	55/125/56
Ageing Characteristic	<2% per decade (nominal capacitance is 1000 hour value)

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www.knowlescapacitors.com

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Date: Friday, August 07, 2026

20260807 174524914UTC

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Description: 1210 1000Vdc 2.2nF $\pm 10\%$ X7R (2R1) (CTI ≥ 600)

Environmental

RoHS Compliant to 2011/65/EC as amended by 2015/863/EU

Compliant

REACH Compliant

253 compliant

California Proposition 65

No exposure risk

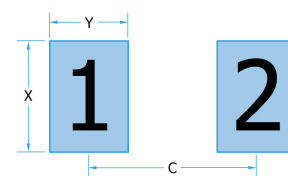
Board Layout

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, especially under high humidity conditions. Board cleanliness and environmental conditions can also impact this. Refer to application note AN0043 for further information.

IPC-7351 pad design

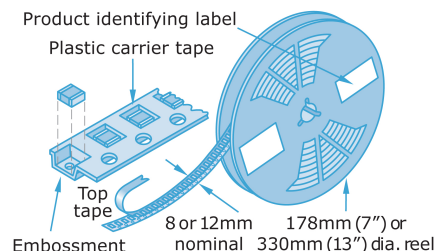
	1210	
C	3.00mm	0.118"
Y	1.15mm	0.045"
X	2.70mm	0.106"



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

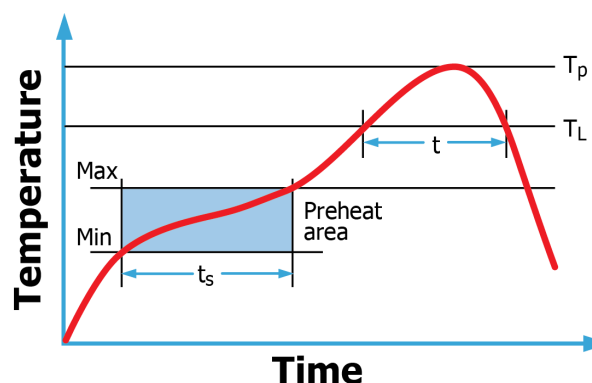
Reflow solder in accordance with IPC-A-610. Recommended reflow profile as laid down in IPC/JEDEC J-STD-020.

Wave soldering is also possible, but care must be taken for case sizes 1210 and larger and component thickness $> 1.0\text{mm}$. 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.



Complex

DLI

Johanson MFG

Novacap

Syfer

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Multilayer Ceramic Chip Capacitor

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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.

Compex

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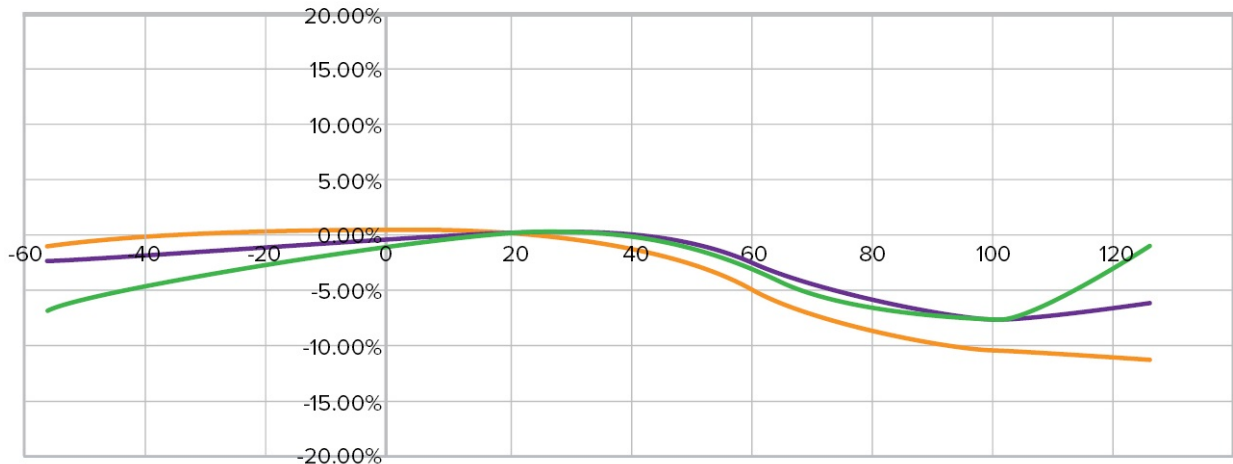
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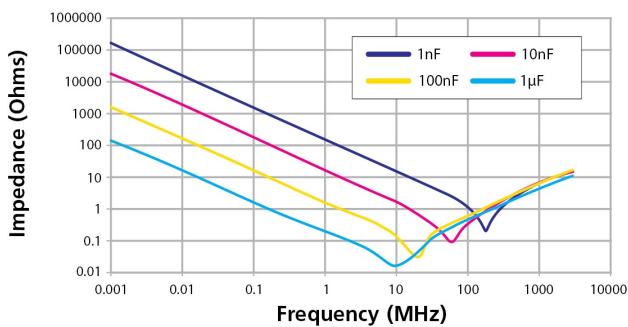
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Typical Capacitance Change vs Temperature

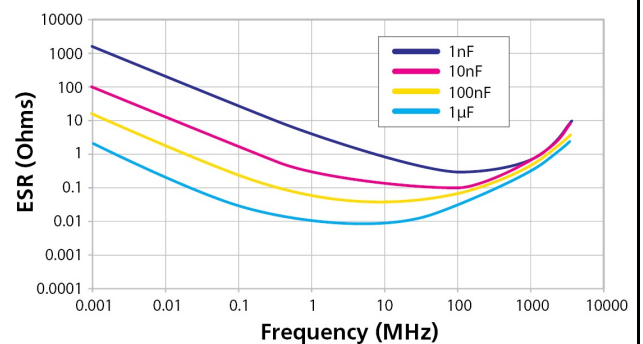


Typical TC Curves for X7R capacitors showing different dielectric types

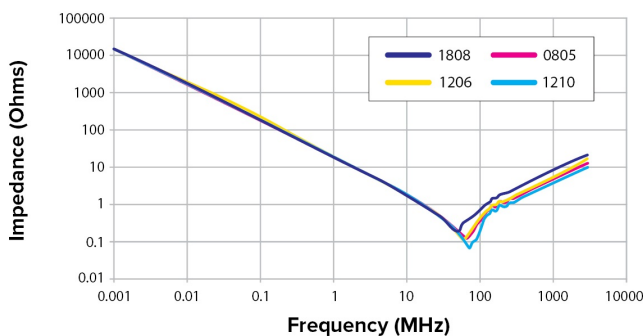
Stable X7R Dielectric



Stable X7R Dielectric



Stable X7R Dielectric — 10nF



Typical Performance Data - X7R

For part specific data, please contact your local sales office
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