

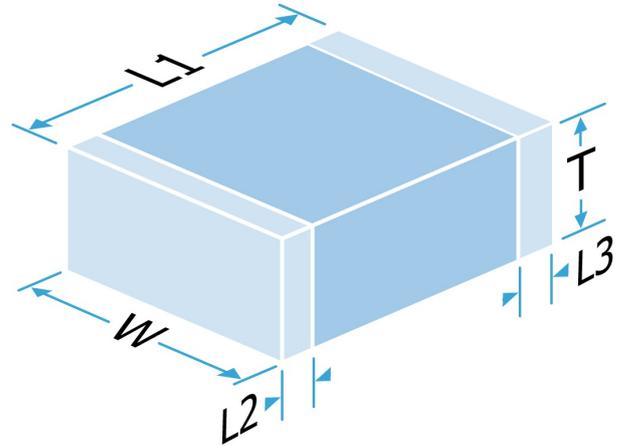
# Multilayer Ceramic Chip Capacitor

**Part Number:** 1210J6300473KXT

**Description:** 1210 630V 47nF ±10% X7R (2R1)

A range of X7R MLC capacitors to suit a variety of applications. Available in 0402 to 8060 chip sizes with capacitance values up to 22uF as standard. A variety of termination options are available, including FlexiCap™, the world's first commercially available flexible termination.

Parts with WS2 suffix use StackiCap™ technology.  
Parts with NC suffix code must be conformally coated after mounting (including between board and chip) to prevent flashover.



## 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

## General Electrical Specification

Rated Voltage	630Vdc
Nominal Capacitance Value	47nF
Capacitance Tolerance	±10%
Tangent of Loss Angle (Tan δ)	≤0.025
Capacitance and Tan δ Test Conditions	1.0Vrms @ 1kHz
Voltage Proof	945Vdc
(Voltage applied for 5 secs max. @ 50mA max. charge current)	
Min Insulation Resistance (IR)	21.28GOhm @ 100Vdc
Dielectric Classification	X7R (2R1)
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

### Knowles Precision Devices - Sales

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This datasheet is for a standard item and is confirmed valid on the date generated, the latest published data for this part may differ and is available at <http://www.knowlescapacitors.com> or by contacting us.

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Data is correct to the best of our knowledge, errors and omissions excepted.

Date: Friday, February 15, 2019

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**Description:** 1210 630V 47nF ±10% X7R (2R1)

## Environmental

RoHS Compliant to 2011/65/EC as amended by 2015/863/EU	Compliant
REACH Compliant	191 compliant
California Proposition 65	No exposure risk

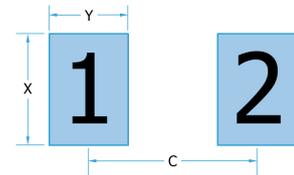
## Board Layout

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

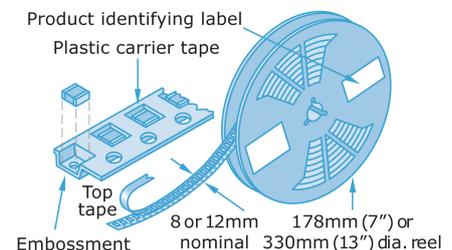
	1210	
C	3.00mm	0.118"
Y	1.15mm	0.045"
X	2.70mm	0.106"



## 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

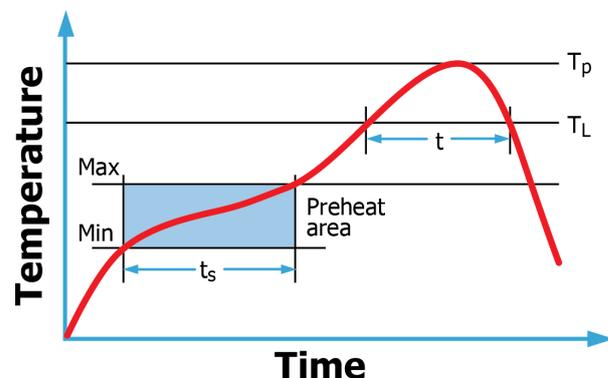
Reflow solder in accordance with IPC-A-610. Recommended reflow profile as laid down in IPC/JEDEC J-STD-020.

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



Compex

DLI

Johanson MFG

Novacap

Syfer

Voltronics

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