Metal Frame J-Lead Terminal Multilayer Ceramic Chip Capacitor

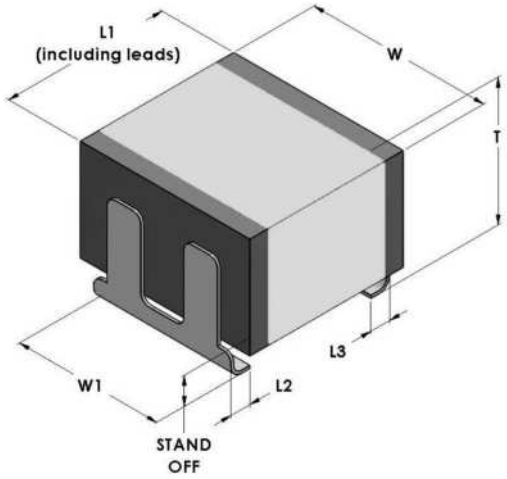
Part Number: 2225B5000105KJTUW031

Description: 2225 500Vdc 1.0uF ±10% X7R (2R1)

A range of X7R MLC capacitors to suit a variety of applications. In a wide selection of rated voltages and chip sizes 2220 / 2225 and with stand-off leads to raise the ceramic body off the board.

The stand-off tab style 'J' lead offers enhanced performance under thermal shock and mechanical vibration test conditions. Capable of 3000 thermal cycles with no degradation of interconnect when solder mounted to FR4 board.

Suitable for both industrial and automotive markets, including 3kV and 4kV parts to satisfy the demands of 800V battery system DWV testing.



Mechanical Specification

Size Code	2225
Length, incl. leads (L1) in mm (")	6.0± 0.40 (0.23 ± 0.016)
Width (W) in mm (")	6.30 ± 0.40 (0.252 ± 0.016)
Thickness, incl. leads (T) in mm (")	5.5 Max (0.217 Max)
Lead Length (L2 and L3) in mm (")	0.7 Typ (0.028 Typ)
Lead Width (W1) in mm (")	5.10 ± 0.20 (0.200 ± 0.008)
Standoff in mm (")	1.0 Typ (0.039 Typ)
Solderability	IEC-60068-2-58
Packaging	7" Reel Horizontal Orientation, 330 per reel
Lead Material / Finish	Tin/Nickel plated Copper Alloy
Solder Attachment Type	SnSb
Conformal Coating	Not normally required

General Electrical Specification

Rated Voltage	500Vdc
Nominal Capacitance Value	1.0uF
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. 50% Max, RH)	750Vdc
Min Insulation Resistance (IR)	1.00GOhm @ 100Vdc
Dielectric Classification	X7R (2R1)
Rated Temperature Range	-55°C / +125°C
Maximum Capacitance Change over Temperature Range	No DC Voltage ±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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Date: Thursday, September 17, 2026

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Part Number: 2225B5000105KJTUW031 **Description:** 2225 500Vdc 1.0uF ±10% X7R (2R1)

Environmental

RoHS Compliant to 2011/65/EC as amended by 2015/863/EU	Compliant
REACH Compliant	253 compliant
California Proposition 65	May pose risk of exposure to Antimony Oxide (CAS 1309-64-4)

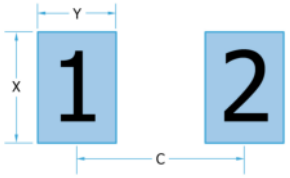
Board Layout

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

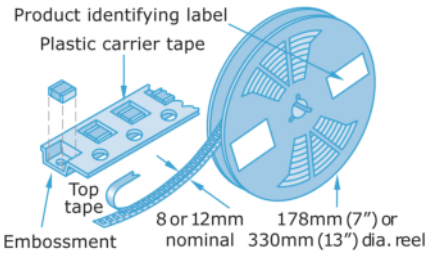
	2225	
C	5.20mm	0.205"
Y	1.65mm	0.065"
X	6.70mm	0.264"



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.



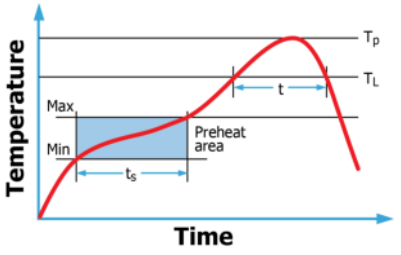
Soldering

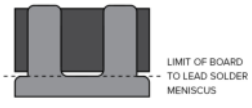
Reflow solder in accordance with IPC-A-610. Recommended reflow profile as laid down in IPC/JEDEC J-STD-020.

Wave soldering not possible for Tab leaded stand-off parts.

Peak re-flow temperature (Tp) 250ºC. Solder volume should be calculated such that the meniscus between tab and board remains under the 'cut-out' guidance edge on the tab (see diagram). Excessive solder or heat may reflow the solder between the lead and MLCC, impacting the integrity of the joint

Hand soldering of Tab leaded parts is not recommended.





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

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Metal Frame J-Lead Terminal Multilayer Ceramic Chip Capacitor

Part Number: 2225B5000105KJTUW031

Description: 2225 500Vdc 1.0uF ±10% X7R (2R1)

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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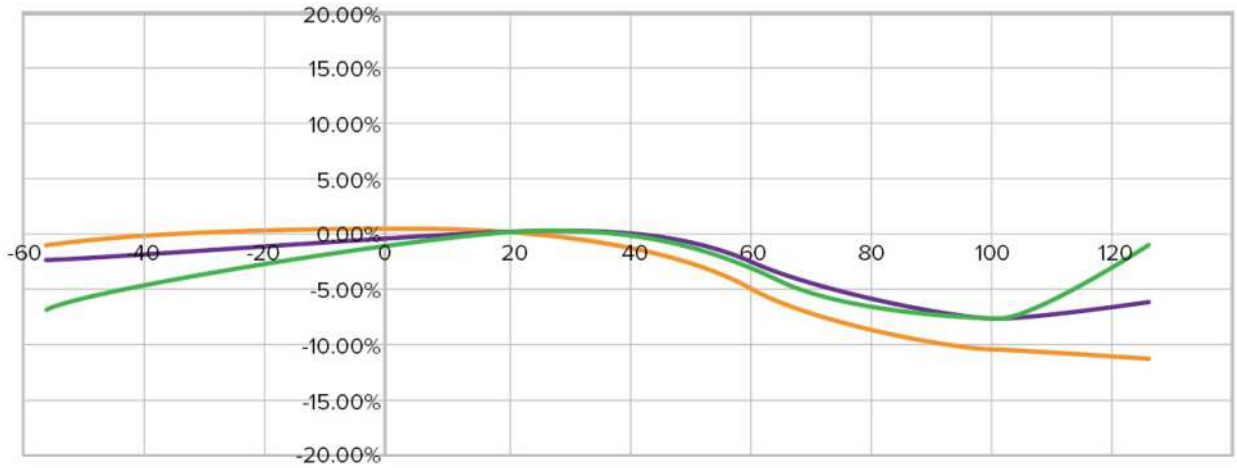
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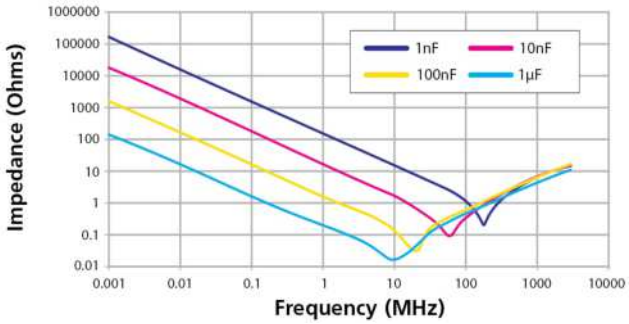
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Typical Capacitance Change vs Temperature

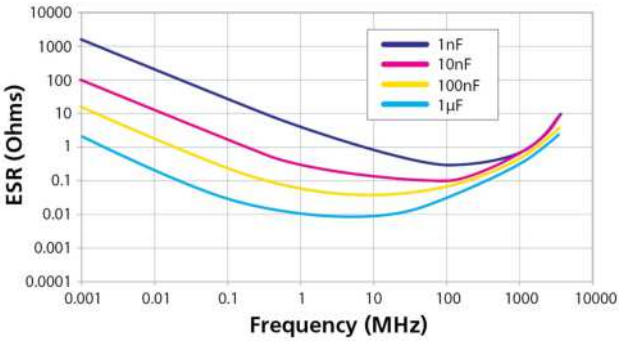


Typical TC Curves for X7R capacitors showing different dielectric types

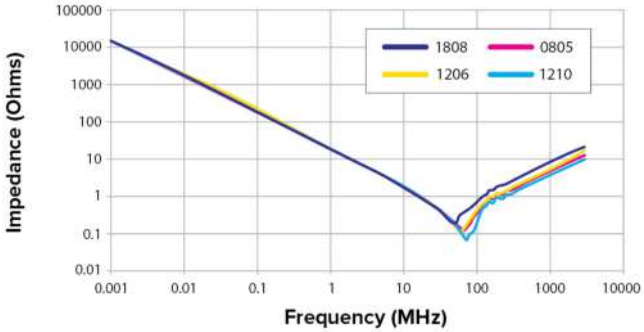
Stable X7R Dielectric



Stable X7R Dielectric



Stable X7R Dielectric — 10nF



Typical Performance Data - X7R

For part specific data, please contact your local sales office

This data is for reference only and does not constitute a specification.

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