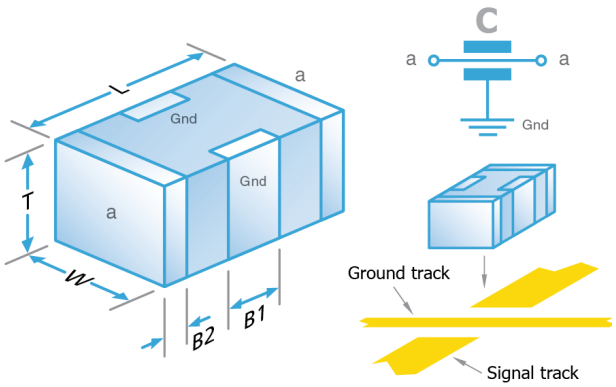
Multilayer Ceramic Chip Capacitor

Part Number: 1806A0500224MXTE07

Description: 1806 50Vdc 220nF ±20% X7R (2R1)

A range of ceramic MLCC feedthrough 'C' filters with enhanced current carrying capabilities. Internal electrodes conduct signals through the MLCC body, with the capacitance formed to ground pads on the side of the chip, providing low inductance and high performance. Available with a variety of termination options including FlexiCap™ (on X7R), the world's first commercially available flexible termination.



Mechanical Specification

Size Code	1806
Length (L1) in mm (")	4.5 ± 0.35 (0.177 ± 0.014)
Width (W) in mm (")	1.6 ± 0.20 (0.063 ± 0.008)
Thickness (T) in mm (")	1.1 ± 0.2 (0.043 ± 0.008)
Termination Bands (B2) in mm (")	0.50 ± 0.25 (0.02 ± 0.01)
Center (Ground) Band (B1) in mm (")	1.4 ± 0.30 (0.055 ± 0.012)
Termination Material	Nickel Barrier, Sn/Pb Plated Solder (Min 10% Lead, non RoHS)
Solderability	IEC-60068-2-58
Packaging	7" Reel Horizontal Orientation, 2500 per reel

General Electrical Specification

Rated Voltage	50Vdc
Rated DC Current	2A
DC Resistance	0.06Ω
Nominal Capacitance Value	220nF
Capacitance Tolerance	±20%
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)	125Vdc
Min Insulation Resistance (IR)	4.55GOhm @ 50Vdc
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)

Knowles Precision Devices - Sales

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www.knowlescapacitors.com

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.

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

Date: Tuesday, January 16, 2024

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Environmental

RoHS Compliant to 2011/65/EC as amended by 2015/863/EU	Non Compliant
REACH Compliant	Contains 0.1 to 1.0% w/w Lead (CAS 7439-92-1)
California Proposition 65	Risk of exposure to lead (CAS 7439-92-1)

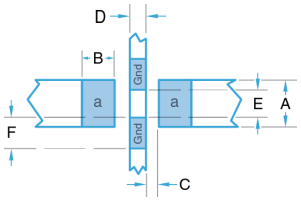
Board Layout

Knowles' conventional 3-terminal chip capacitors should be mounted using the pad design supplied.

It has been developed in conjunction with our customers over the years and has been shown to yield succesful soldering results. It incorporates factors that have been shown to reduce mechanical stress, such as reducing the pad width to less than the chip width, but the position of the chip on the board should also be considered.

Note that for optimum noise rejection the ground pads should be placed on the circuit board ground plane, or connected to the ground plane by the shortest and widest route possible.

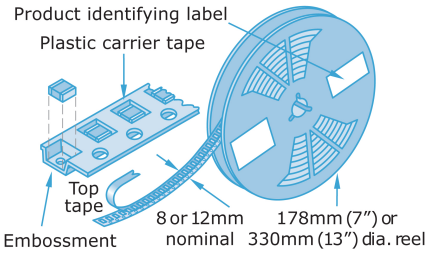
	1806	
A	1.20mm	0.047"
B	1.40mm	0.055"
C	0.80mm	0.031"
D	1.40mm	0.055"
E	1.00mm	0.039"
F	0.70mm	0.028"



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.

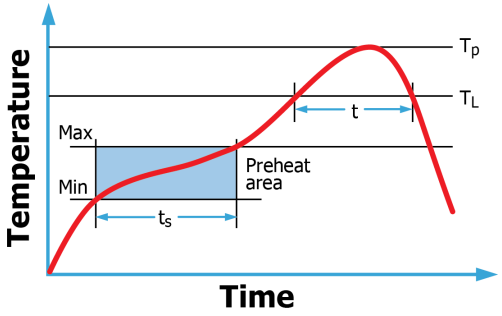


Soldering

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.



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

Compex DLI Johanson MFG Novacap Syfer Voltronics

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