

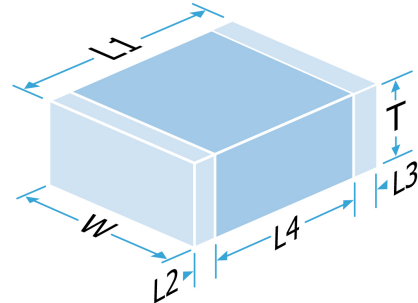
Part Number: 1812YA250220KGRUYS

Description: 1812 250Vac (Y2), 305Vac (X1), 50/60Hz / 2500Vdc 22pF ±10% C0G/NP0 (1B)

Approval Specifications: IEC/EN60384-14:2013+A1
UL60384-14, CAN/CSA E60384-14:14

Certification: Unmarked parts are uncertified but manufactured in accordance with the above specifications.

Classification: These capacitors comply with the requirements of IEC/EN 60384-14:2013+A1 for Class Y2 / X1 for use in equipment within the spec of IEC62368



Component Marking and Certification Bodies:

Not Applicable

Material Group I : CTI >= 600

Mechanical Specification

| | |
|---|--|
| Size Code | 1812 |
| Length (L1) in mm (") | 4.8 ± 0.35 (0.189 ± 0.014) |
| Width (W) in mm (") | 3.2 ± 0.30 (0.126 ± 0.012) |
| Thickness (T) in mm (") | 1.5 Max (0.06 Max) |
| Minimum Termination Band (L2,L3) in mm (") | 0.30 (0.012) |
| Maximum Termination Band (L2,L3) in mm (") | 0.80 (0.030) |
| Minimum Band Gap (L4) in mm (") (per IEC/EN 60384-14) | 3.5 (0.138) |
| Termination Material | FlexiCap™ Polymer termination, Nickel barrier, Sn Plated Solder (RoHS compliant) |
| Solderability | IEC-60068-2-58 |
| Packaging | 13" Reel, 2000 per reel |

General Electrical Specification

| | |
|--|---|
| Rated Voltage | Class Y2* (250Vac), Class X1* (305Vac), 50/60Hz, 5kV impulse (*Applicable to equipment within the scope of IEC 62368) |
| Humidity Grade | Grade IIIB (IEC/EN60384-14:2013 Annex I) |
| Maximum DC Working Voltage | 2500Vdc (1000Vdc per IEC/EN60384-14:2013 Annex H) |
| Nominal Capacitance Value | 22pF |
| Capacitance Tolerance | ±10% |
| Tangent of Loss Angle (Tan δ) | ≤0.00207 |
| Capacitance and Tan δ Test Conditions | 1.0Vrms @ 1MHz |
| Voltage Proof (50mA max charging current for DC tests. 50% Max, RH) | 100% test: 3000Vdc 1s min / 5s max AQL test: 3225Vdc / 2110Vac 60s min / 5kV 1.2x50µs impulse |
| Min Insulation Resistance (IR) | 100.00GOhm @ 100Vdc |
| Dielectric Classification | C0G/NP0 (1B) |
| Rated Temperature Range | -55°C / +125°C |
| Maximum Capacitance Change over Temperature Range | No DC Voltage 0±30ppm/°C Rated DC Voltage - |
| Climatic Category (IEC) | 55/125/56 |
| Ageing Characteristic | Zero |

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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: Thursday, April 02, 2026

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Part Number: 1812YA250220KGRUYS

Description: 1812 250Vac (Y2), 305Vac (X1), 50/60Hz / 2500Vdc 22pF ±10% C0G/NP0 (1B)

Environmental

| | |
|--|------------------|
| RoHS Compliant to 2011/65/EC as amended by 2015/863/EU | Compliant |
| REACH Compliant | 250 compliant |
| California Proposition 65 | No exposure risk |

Board Layout

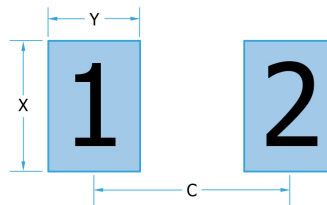
Knowles' conventional 2-terminal chip capacitors can generally be mounted using pad designs in accordance with international specification IPC-7351, Generic Requirements for Surface Mount Design and Land Pattern Standards, but there are some other factors that have been shown to reduce mechanical stress, 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.

Dimensions given are for guidance. It is ultimately the customers responsibility to confirm that the circuit layout is in accordance with their own product requirements.

IPC-7351 pad design

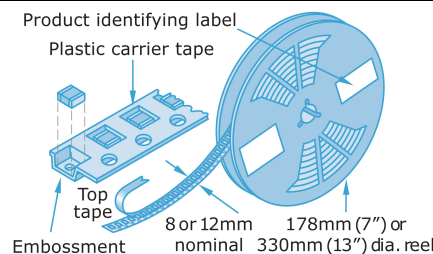
| | 1812 | |
|---|--------|--------|
| C | 5.30mm | 0.209" |
| Y | 1.50mm | 0.059" |
| X | 3.40mm | 0.134" |



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.



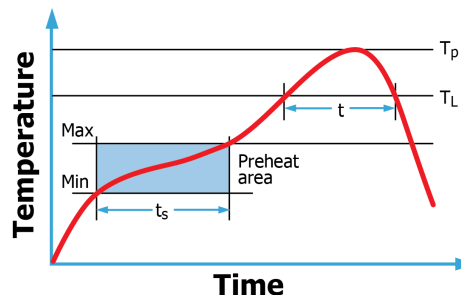
Soldering

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.



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