

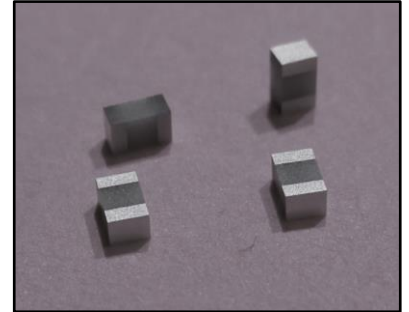
Thermal Conductors – PTC Series

λ Product Features

With the increase in heat dissipation from microelectronics devices and the reduction in overall form factors, thermal management becomes a more and more important element of electronic product design.

PPI's Thermal conductors are a passive heat exchanger that transfers the heat generated by an electronic device to a thermal ground plane or any specific thermal point where it gets dissipated away from the device.

Our thermal conductors are available in a variety of sizes including standard EIA case sizes and are constructed using Aluminum Nitride (AlN) or Beryllium Oxide (BeO).



λ Product Features

- High Thermal Conductivity
- Low Thermal Resistance
- Low Capacitance
- One piece construction
- RoHS Compliant
- EIA case sizes
- More efficient thermal management

λ Applications

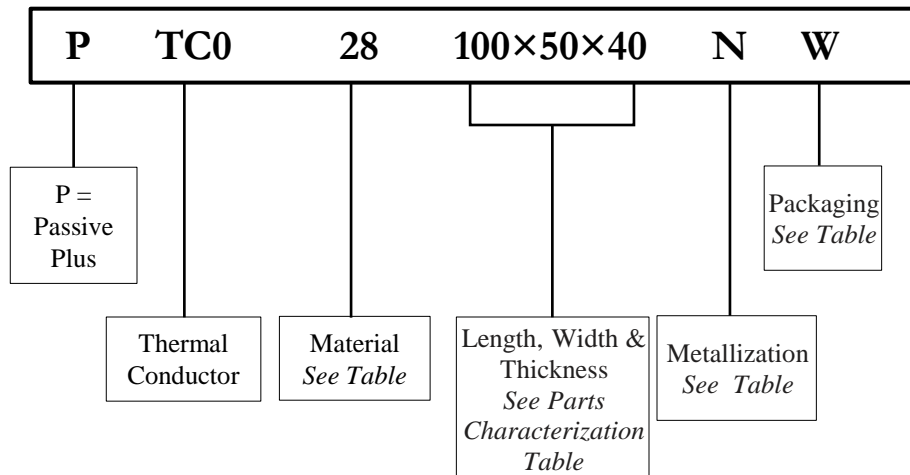
- GaN Power Amplifiers
- High RF Power Amplifiers
- Filters
- Synthesizers
- Switch Mode Power Supplies
- Pin & Laser Diodes

λ Functional Applications

- Between active device & adjacent ground planes
- Specific contact pad to case
- Contact pad to contact pad
- Direct component contact to via pad or trace
- Edges fully metallized

λ Part Numbering

Example shown below: Thermal Conductor, AlN, 1005, thickness (40 mils), Platinum/Gold (Pt/Au), Waffle Pack





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λ Parts Characterizations

| Case Size | Length (L) mils / (inches) | Width (W) mils / (inches) | Thickness (T) mils / (inches) | Terminal (t) | Thermal Resistance (°C/W) | | Thermal Conductivity (mW/°C) | |
|-----------|-------------------------------|------------------------------|----------------------------------|--------------|---------------------------|-----|------------------------------|-----|
| | | | | | AlN | BeO | AlN | BeO |
| 0302 | 30 ± 2 (.770 ± .051) | 20 ± 2 (.510 ± .0510) | 20 (.020 ± .002) | 10 -0.25 | 19 | 12 | 53 | 81 |
| 0402 | 40 ± 2 (1.020 ± .051) | 20 ± 2 (.510 ± .0510) | 20 (.020 ± .002) | 10 -0.25 | 25 | 16 | 40 | 61 |
| 0505 | 50 ± 2 (1.270 ± .051) | 50 ± 2 (1.270 ± .051) | 25 (.025 ± .002) | 15 -0.38 | 10 | 7 | 100 | 153 |
| 0603 | 60 ± 2 (1.52 ± .051) | 30 ± 2 (.760 ± .051) | 25 (.025 ± .002) | 15 -0.38 | 20 | 13 | 50 | 76 |
| 0805 | 80 ± 2 (2.030 ± .051) | 50 ± 2 1.270 ± .051) | 40 (.040 ± .002) | 20 -0.51 | 10 | 7 | 100 | 153 |
| 1005 | 100 ± 2 (2.54 ± .051) | 50 ± 2 (1.27 ± .051) | 40 (.040 ± .002) | 20 -0.51 | 13 | 8 | 77 | 122 |
| 1020 | 100 ± 2 (2.540 ± .051) | 200 ± 2 (5.080 ± .051) | 40 (.040 ± .002) | 20 -0.51 | 3 | 2 | 320 | 508 |
| 1111 | 110 ± 2 (2.790 ± .051) | 110 ± 2 (2.790 ± .051) | 40 (.040 ± .002) | 20 -0.51 | 7 | 4 | 153 | 240 |
| 2010 | 195 ± 10 (4.950 ± .254) | 195 ± 10 (2.410 ± .254) | 60 (.060 ± .002) | 30 -0.77 | 10 | 6 | 100 | 159 |
| 2525 | 240 ± 10 (6.100 ± .254) | 250 ± 10 (6.350 ± .254) | 60 (.060 ± .002) | 40 -1.02 | 4 | 3 | 240 | 380 |
| 3725 | 370 ± 10 (9.400 ± .254) | 245 ± 10 (6.220 ± .254) | 60 (.060 ± .002) | 50 -1.27 | 6 | 4 | 160 | 254 |
| 3737 | 365 ± 10 (9.270 ± .254) | 375 ± 10 (9.530 ± .254) | 60 (.060 ± .002) | 50 -1.27 | 4 | 3 | 240 | 380 |

λ Materials

| | AlN | BeO |
|-------------|-----------|-----------|
| CODE | 28 | 25 |

λ Metallizations

| Termination Code | Termination Materials |
|------------------|-------------------------|
| N* | Platinum/Gold (Pt/Au) |
| X | Platinum/Silver (Pt/Ag) |

*Recommended

λ Packaging

| Code | Style |
|------|------------------------|
| W | Waffle Pack (Standard) |
| G | Gel Pack |

All parts are supplied in waffle packs. Other packaging may be available. Contact PPI for additional packaging options.





Thermal Conductors – PTC Series

λ General Properties

| | |
|-----------------------|--------------------------------|
| Operating Temperature | -55°C to +150°C |
| Storage Temperature | -65°C to +150°C |
| Insulation Resistance | 10 ¹² Ω min at 25°C |



λ Testing

| Testing Performed | Specification / Standard |
|----------------------------------------------|------------------------------|
| Visual Inspection | MIL-PRF-55342 MIL-STD-883 |
| Mechanical Inspection | MIL-PRF-55342 |
| DC Resistance | MIL-PRF-55342 MIL-STD-202 |
| Resistance Temperature Characteristics (TCR) | MIL-PRF-55342 |
| Short Time Overload | MIL-PRF-55342 |
| High Temperature Exposure | MIL-PRF-55342 |
| Thermal Shock | MIL-PRF-55342 MIL-STD-202 |
| Resistance to Bonding Exposure | MIL-PRF-55342 |
| Wire Bonding Integrity | MIL-PRF-55342 |
| Life Test | MIL-PRF-55342 MIL-STD-202 |

λ Performance Specifications

Higher power ratings, additional sizes, and custom resistors available. Please contact sales@passiveplus.com.