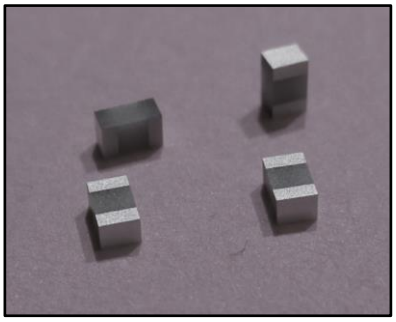
Thin Film Products

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 metalized

λ Part Numbering

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

P	TC0	28	100×50×40	N	W
P = Passive Plus	Thermal Conductor	Material *See Table*	Length, Width & Thickness *See Parts Characterization Table*	Metallization *See Table*	Packaging *See Table*

RoHS

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λ Parts Characterizations

Case Size	Length (L) mils / (mm)	Width (W) mils / (mm)	Thickness (T) mils / (mm)	Terminal (t) mils / (mm)	Thermal Resistance (°C/W)		Thermal Conductivity (mW/°C)	
					AlN	BeO	AlN	BeO
0302	30 ± 2 (.762 ± .051)	20 ± 2 (.508 ± .051)	20 (.508)	10 (0.25)	19	12	53	81
0402	40 ± 2 (1.016 ± .051)	20 ± 2 (.508 ± .051)	20 (.508)	10 (0.25)	25	16	40	61
0505	50 ± 2 (1.270 ± .051)	50 ± 2 (1.270 ± .051)	25 (.635)	15 (0.38)	10	7	100	153
0603	60 ± 2 (1.524 ± .051)	30 ± 2 (.762 ± .051)	25 (.635)	15 (0.38)	20	13	50	76
0805	80 ± 2 (2.032 ± .051)	50 ± 2 (1.27 ± .051)	40 (1.016)	20 (0.51)	10	7	100	153
1005	100 ± 2 (2.540 ± .051)	50 ± 2 (1.27 ± .051)	40 (1.016)	20 (0.51)	13	8	77	122
1020	100 ± 2 (2.540 ± .051)	200 ± 2 (5.080 ± .051)	40 (1.016)	20 (0.51)	3	2	320	508
1111	110 ± 2 (2.794 ± .051)	110 ± 2 (2.794 ± .051)	40 (1.016)	20 (0.51)	7	4	153	240
2010	200 ± 10 (5.080 ± .254)	100 ± 10 (2.540 ± .254)	60 (1.524)	30 (0.77)	10	6	100	159
2525	250 ± 10 (6.350 ± .254)	250 ± 10 (6.350 ± .254)	60 (1.524)	40 (1.02)	4	3	240	380
3725	370 ± 10 (9.398 ± .254)	250 ± 10 (6.350 ± .254)	60 (1.524)	50 (1.27)	6	4	160	254
3737	370 ± 10 (9.398 ± .254)	370 ± 10 (9.398 ± .254)	60 (1.524)	50 (1.27)	4	3	240	380

λ Materials

	AlN	BeO
CODE	**28**	**25**

λ Metallizations

Code	Metallization	Attachement Options
N*	Platinum/Gold (Pt/Au)	Solder Only
X	Platinum/Silver (Pt/Ag)	Solder Only

**Recommended*

λ Packaging

Code	Style
W	Waffle Pack (Standard)

Contact PPI for additional packaging options.

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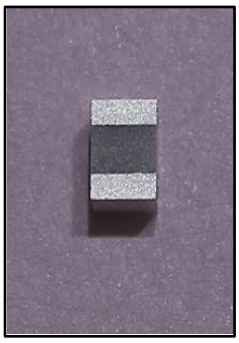

λ General Properties

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