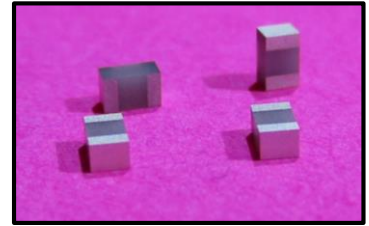


Thermal Conductors

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).

◆ Product Features

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

◆ Applications

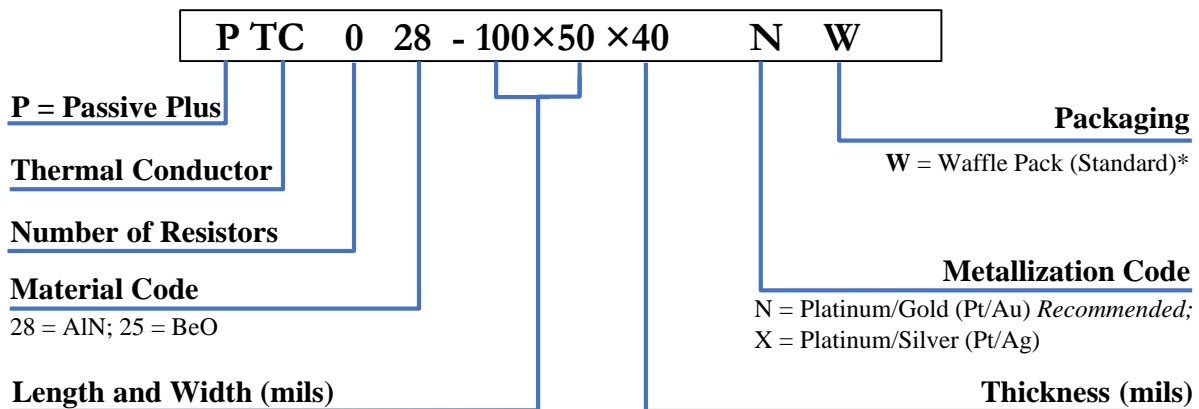
- GaN Power Amplifiers
- High RF Power Amplifiers
- Filters
- Synthesizers
- Switch Mode Power Supplies
- Pin & Laser Diodes

◆ 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

◆ Part Numbering

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



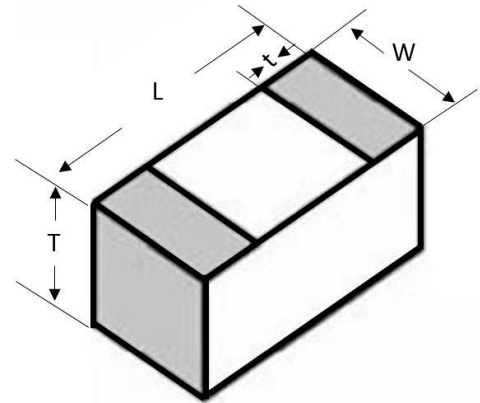
** All parts are supplied in waffle packs. Other packaging may be available. Contact PPI for additional packaging options.*

Thermal Conductors

◆ Product Features

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

*Recommended



◆ Part Characteristics

Case Size	Length (L)	Width (W)	Thickness (T)	Terminal (t)	Thermal Resistance (°C/W)		Thermal Conductivity (mW/°C)	
					AlN	BeO	AlN	BeO
0302	.030 ± .002 (.770 ± .051)	.020 ± .002 (.510 ± .051)	20 (.510 ± .050)	10 (0.250)	19	12	53	81
0402	.040 ± .002 (1.020 ± .051)	.020 ± .002 (.510 ± .051)	20 (.510 ± .050)	10 (0.250)	25	16	40	61
0505	.050 ± .002 (1.270 ± .051)	.050 ± .002 (1.270 ± .051)	25 (.640 ± .050)	15 (0.380)	10	7	100	153
0603	.060 ± .002 (1.52 ± .051)	.030 ± .002 (.760 ± .051)	25 (.640 ± .050)	15 (0.380)	20	13	50	76
0805	.080 ± .002 (2.030 ± .051)	.050 ± .002 1.270 ± .051)	40 (1.020 ± .050)	20 (0.510)	10	7	100	153
1005	.100 ± .002 (2.54 ± .051)	.050 ± .002 (1.27 ± .051)	40 (1.020 ± .050)	20 (0.510)	13	8	77	122
1020	.100 ± .002 (2.540 ± .051)	.200 ± .002 (5.080 ± .051)	40 (1.020 ± .050)	20 (0.510)	3	2	320	508
1111	.110 ± .002 (2.790 ± .051)	.110 ± .002 (2.790 ± .051)	40 (1.020 ± .050)	20 (0.510)	7	4	153	240
2010	.195 ± .010 (4.950 ± .254)	.095 ± .010 (2.410 ± .254)	60 (1.520 ± .050)	30 (0.770)	10	6	100	159
2525	.240 ± .010 (6.100 ± .254)	.250 ± .010 (6.350 ± .254)	60 (1.520 ± .050)	40 (1.020)	4	3	240	380
3725	.370 ± .010 (9.400 ± .254)	.245 ± .010 (6.220 ± .254)	60 (1.520 ± .050)	50 (1.270)	6	4	160	254
3737	.365 ± .010 (9.270 ± .254)	.375 ± .010 (9.530 ± .254)	60 (1.520 ± .050)	50 (1.270)	4	3	240	380

Inches (mm)

Thermal Conductors

◆ 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

◆ 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

◆ Performance Specifications

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

◆ Packaging

ESD waffle packs are standard. Film rings and gel pack packaging may be available upon request.

