

# ATC Q-BRIDGE THERMAL CONDUCTOR

## ATC Q-Bridge Thermal Conductor

ATC's new Q-Bridge Thermal Conductor is manufactured with the highest quality materials for reliable and repeatable performance providing a cost effective thermal management solution. These devices are constructed with Aluminum Nitride (AlN) or Beryllium Oxide (BeO) and are available in standard EIA form factors.





Q-Bridge provides the designer with the ability to manage thermal conditions by directing heat to a thermal ground plane, heat sink or any other specific thermal point of interest. The inherently low capacitance makes this device virtually transparent at RF / microwave frequencies. This device has the added benefit of offering additional layers of protection to adjacent components from hot spot thermal loads.

Q-Bridge provides the benefit of increased overall circuit reliability. ATC's Q-Bridge is manufactured using one-piece construction, providing a RoHS compliant SMT package that is fully compatible with high speed automated pick-and-place processing. It is available in various EIA case sizes. Custom configurations are also available.

### Features:

- High Thermal Conductivity
- Low Thermal Resistance
- Low Capacitance
- Increases Circuit Reliability
- RoHS Compliant
- More efficient thermal management

### Termination Materials

ATC Termination Code	Termination Materials	
CA	Gold over Non-Magnetic Barrier Termination	
G	Gold over Magnetic Barrier Termination	
Y	Platinum/Silver over Non-Magnetic Termination	
S	Silver over Magnetic Termination	

Note: S Termination applicable to Case Size 2010 and larger. Consult factory for other termination options, e.g., tin plate and solder plate.



### Applications:

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

### Functional Applications:

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



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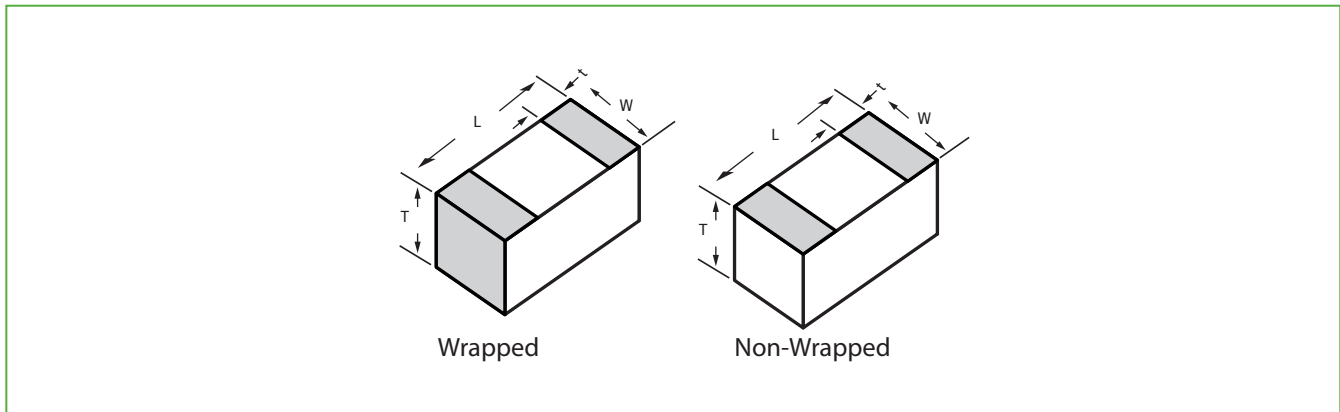
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ATC # 001-1143  
Rev. G, 5/17

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## Mechanical Configurations



## Typical Characteristics

Case Size	Length (L)	Width (W)	Thickness (T, mils)	Terminal (t, mils)	Thermal Resistance (°C/W)		Thermal Conductivity (mW/°C)	
					AlN	BeO	AlN	BeO
0302	.030 ±.002 (.77 ±.051)	.020 ±.002 (0.51 ±.051)	20	10	19	12	53	81
0402	.040 ±.002 (1.02 ±.051)	.020 ±.002 (0.51 ±.051)	20	10	25	16	40	61
0505	.050 ±.002 (1.27 ±.051)	.050 ±.002 (1.27 ±.051)	25	15	10	7	100	153
0603	.060 ±.002 (1.52 ±.051)	.030 ±.002 (.76 ±.051)	25	15	20	13	50	76
0805	.080 ±.002 (2.03 ±.051)	.050 ±.002 (1.27 ±.051)	40	20	10	7	100	153
1005	.100 ±.002 (2.54 ±.051)	.050 ±.002 (1.27 ±.051)	40	20	13	8	77	122
1020	.100 ±.002 (2.54 ±.051)	.200 ±.002 (5.08 ±.051)	40	20	3	2	320	508
1111	.110 ±.002 (2.79 ±.051)	.110 ±.002 (2.79 ±.051)	40	20	7	4	153	240
2010	.195 ±.010 (4.95 ±.254)	.095 ±.010 (2.41 ±.254)	60	30	10	6	100	159
2525	.240 ±.010 (6.10 ±.254)	.250 ±.010 (6.35 ±.254)	60	40	4	3	240	380
3725	.370 ±.010 (9.40 ±.254)	.245 ±.010 (6.22 ±.254)	60	50	6	4	160	254
3737	.365 ±.010 (9.27 ±.254)	.375 ±.010 (9.53 ±.254)	60	50	4	3	240	380

*inches (mm)*

Note: Thermal conductivity is normalized to chip size. All values are approximate. Consult factory for extended thermal conductivity options.



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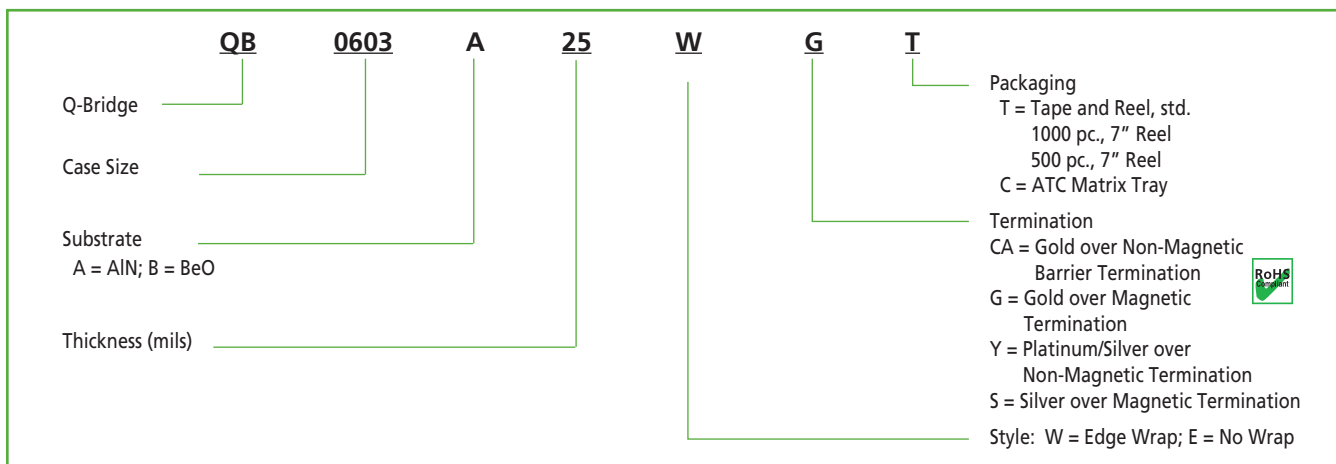
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# ATC Q-BRIDGE THERMAL CONDUCTOR

## ATC Part Number Code



The above part number refers to a Q-Bridge, (EIA case size 0603), Aluminum Nitride (AlN) substrate, Thickness 25 mils., Style W, G Termination (Gold over Magnetic Termination), with Tape and Reel Packaging.

ATC accepts orders for our parts using designations *with* or *without* the "ATC" prefix. Both methods of defining the part number are equivalent, i.e., part numbers referenced with the "ATC" prefix are interchangeable to parts referenced without the "ATC" prefix. Customers are free to use either in specifying or procuring parts from American Technical Ceramics.

For additional information and catalogs contact your ATC representative or call direct at +1-631-622-4700.

Consult factory for additional performance data.

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