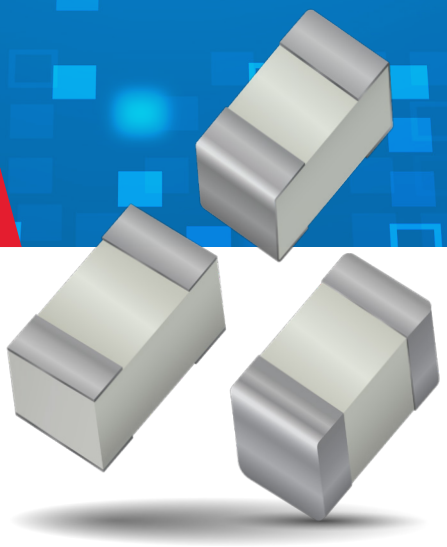
KYOCERA AVX

Scan QR Code For More Information



# Q-BRIDGE

## THERMAL CONDUCTOR

## GENERAL DESCRIPTION

KYOCERA AVX'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. KYOCERA AVX'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 multiple different EIA case sizes. Custom configurations are also available.

### APPLICATIONS

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

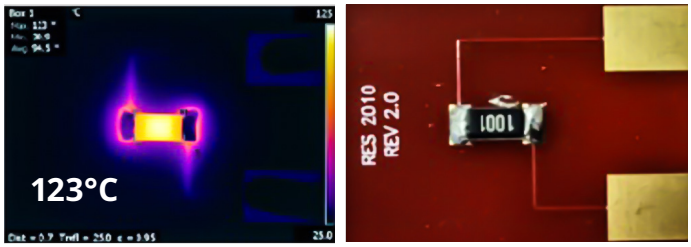
### FEATURES

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

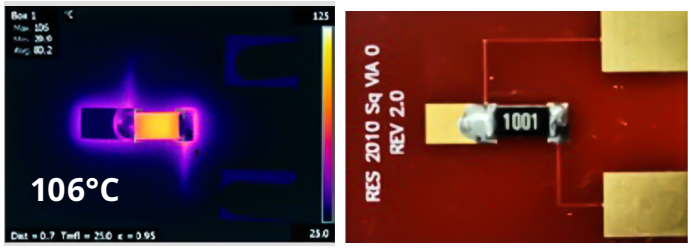
### FUNCTIONAL APPLICATIONS

- 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

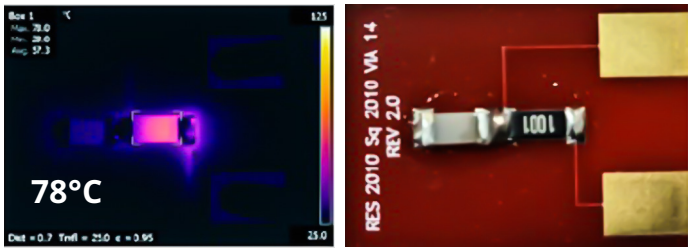
## Q-BRIDGE THERMAL TESTS INDICATE THE HEAT DISSIPATION OUTCOMES




Resistor without any added heat removal, power output 841mW




Resistor with added metal heat sink, power output 841mW




Resistor with added 2010 Q-Bridge, power output 841mW

# Q-BRIDGE
## THERMAL CONDUCTOR

KYOCERA AVX

## PART NUMBER INFORMATION

**QB 0603 A 25 W Y T**

**Q-Bridge**

**Case Size**
Please see 'Case Size' Column of
Typical Characteristics Table Below

**Substrate**
A = AIN
B = BeO

**Thickness**
(mils)

The above part number refers to a Q-Bridge, (EIA case size 0603), Aluminum Nitride Substrate, Thickness 25 mils., Style W, Y Termination (Silver Platinum Non-Magnetic Termination), with Tape and Reel Packaging.

**Packaging**
T = 1000pcs., 7" reel
T\500 = 500pcs., 7" reel
C = Matrix Tray

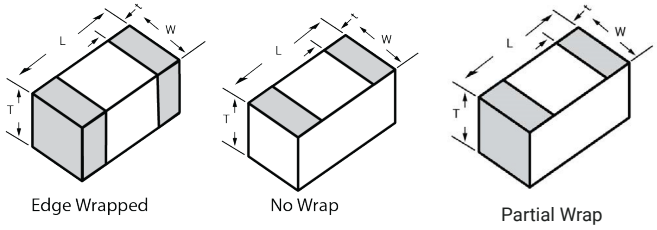
**Termination**
Y = Silver Platinum, Non-Magnetic Termination
S = Silver over Magnetic Termination
J* = 60Sn/40Pb Solder Plated over Nickel over Silver Platinum
T = Tin plated over Nickel over Silver Platinum

RoHS COMPLIANT

* Not RoHS Compliant Consult factory for other termination options e.g., tin plate and solder plate

**Style**
W = Edge Wrap
E = No Wrap

## MECHANICAL CONFIGURATIONS




Edge Wrapped | No Wrap | Partial Wrap

## TERMINATION MATERIALS

| Termination Code | Termination Materials | |
|---|---|---|
| T | Tin plated over Nickel over Silver Platinum | RoHS Compliant |
| Y | Silver Platinum Non-Magnetic Termination | RoHS Compliant |
| S | Silver over Magnetic Termination | RoHS Compliant |
| J | Solder Plated over Nickel over Silver Platinum | Not RoHS Compliant |

## TYPICAL CHARACTERISTICS Inches (mm)

| Case Size | Length (L) | Width (W) | Thickness (T) | Terminal (t) | Voltage Rating (V) | Thermal Resistance (°C/W) | | Thermal Conductivity (mW/°C) | | Available Configurations | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | AIN | BeO | AIN | BeO | Style | Termination |
| 0302 | .030 ± .002 (.77 ± .051) | .020 ± .002 (0.51 ± .051) | 0.02 (0.51 ± .05) | 0.01 (0.25) | 100 | 19 | 12 | 53 | 81 | W | Y, T, J |
| | | | | | | | | | | E | S |
| 0402 | .040 ± .002 (1.02 ± .051) | .020 ± .002 (0.51 ± .051) | 0.02 (0.51 ± .05) | 0.01 (0.25) | 200 | 25 | 16 | 40 | 61 | W | Y, T, J |
| | | | | | | | | | | E | S |
| 0505 | .050 ± .002 (1.27 ± .051) | .050 ± .002 (1.27 ± .051) | 25 (0.64 ± .05) | 0.015 (0.38) | 250 | 10 | 7 | 100 | 153 | W | Y, T, J |
| | | | | | | | | | | E | S |
| 0603 | .060 ± .002 (1.52 ± .051) | .030 ± .002 (.77 ± .051) | 0.025 (0.64 ± .05) | 0.015 (0.38) | 250 | 20 | 13 | 50 | 76 | W | Y, T, J |
| | | | | | | | | | | E | S |
| 0805 | .080 ± .002 (2.03 ± .051) | .050 ± .002 (1.27 ± .051) | 0.04 (1.02 ± .05) | 0.02 (0.51) | 250 | 10 | 7 | 100 | 153 | W | Y, T, J |
| | | | | | | | | | | E | S |
| 1005 | .100 ± .002 (2.54 ± .051) | .050 ± .002 (1.27 ± .051) | 0.04 (1.02 ± .05) | 0.02 (0.51) | 500 | 13 | 8 | 77 | 122 | W | Y, T, J |
| | | | | | | | | | | E | S |
| 1020 | .100 ± .002 (2.54 ± .051) | .200 ± .002 (5.08 ± .051) | 0.04 (1.02 ± .05) | 0.02 (0.51) | 500 | 3 | 2 | 320 | 508 | W | Y, T, J |
| | | | | | | | | | | E | S |
| 1111 | .110 ± .002 (2.79 ± .051) | .110 ± .002 (2.79 ± .051) | 0.04 (1.02 ± .05) | 0.02 (0.51) | 500 | 7 | 4 | 153 | 240 | W | Y, T, J |
| | | | | | | | | | | E | S |
| 2010 | .195 ± .010 (4.95 ± .254) | .095 ± .010 (2.41 ± .254) | 0.06 (1.52 ± .05) | 0.03 (0.77) | 2000 | 10 | 6 | 100 | 159 | W | S |
| | | | | | | | | | | E | S |
| 2525 | .240 ± .010 (6.10 ± .254) | .250 ± .010 (6.35 ± .254) | 0.06 (1.52 ± .05) | 0.04 (1.02) | 3000 | 4 | 3 | 240 | 380 | W | S |
| | | | | | | | | | | E | S |
| 3725 | .370 ± .010 (9.40 ± .254) | .245± .010 (6.22 ± .254) | 0.06 (1.52 ± .05) | 0.05 (1.27) | 4000 | 6 | 4 | 160 | 254 | W | S |
| | | | | | | | | | | E | S |
| 3737 | .365 ± .010 (9.27 ± .254) | .375 ± .010 (9.53 ± .254) | 0.06 (1.52 ± .05) | 0.05 (1.27) | 4000 | 4 | 3 | 240 | 380 | W | S |
| | | | | | | | | | | E | S |