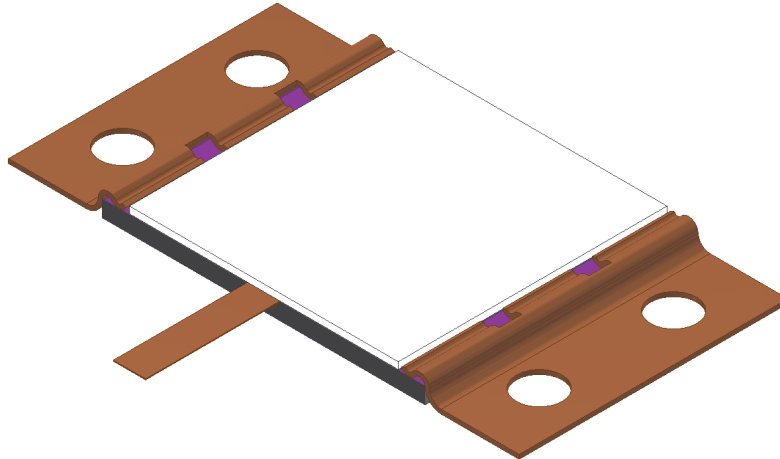


# Application Note: AN0027

## High Power Flangeless Termination

The Smiths Interconnect high power termination is designed to reduce the additional thermal resistance that a flange represents between the resistor element and the heat sink.



### Features/Benefits

- Low thermal Resistance
- No substrate cracks due to CTE mismatch
- Internal tuned circuit design to reduce capacitance
- 1000 W CW

### Termination Applications

- Broadcast (TV and Radio)
- High power amplifiers
- Isolators
- Instrumentation

### Mounting Instructions

The area under the device should be flat, less than .001" is preferred. The mounting surface should be free of all burrs and scratches that causes air spaces between the substrate and heat sink.

The main criteria when mounting power devices is to make intimate contact with the heat sink. Air gaps at this interface will cause a very high thermal resistance barrier and must be avoided to insure optimum heat transfer. Proper heat sink preparation will help insure optimum heat transfer. Prior to drilling and tapping threads for the mounting screws, countersinking the locations is recommended. This operation will prevent raising the threads above the mounting surface while tapping.

A thin layer of thermal grease should be evenly applied to the back of the chip, keeping the thickness to about .001-.002 inches. The chip should then be placed on the heat sink. While applying pressure, "scrub it" into place to help the thermal grease fill any small air spaces under the chip and ultimately provide a good thermal contact.

Finally, the mounting clips should be positioned and installed using 6-32 x.125" screws (or metric equivalent) ensuring proper contact is made with the ground terminals and torque to 8in-lbs.

The picture below shows a flangeless part mounted on a heat sink as well as the flanged version; notice the same footprint but increased power handling capacity.

