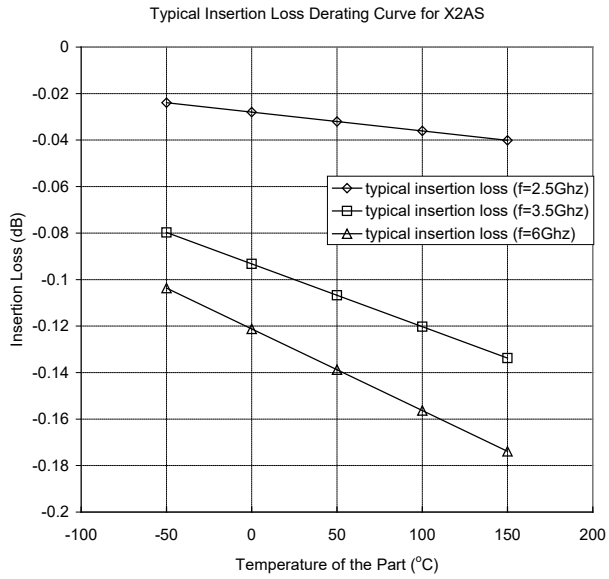
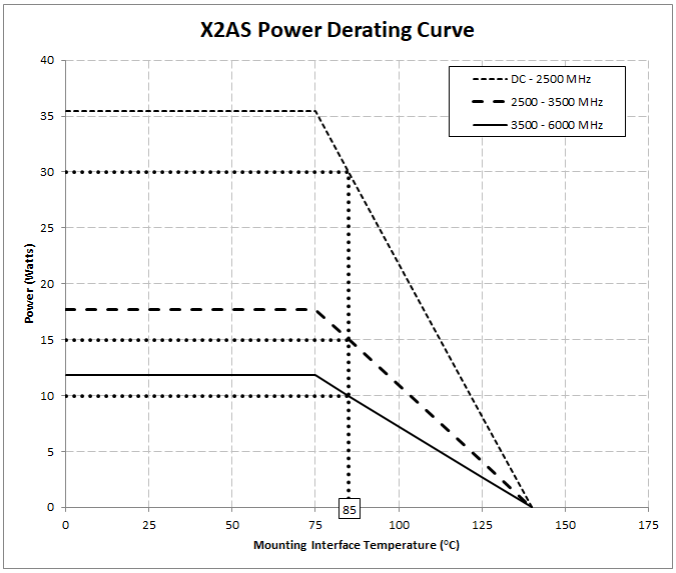
Insertion Loss and Power Derating Curves





Insertion Loss Derating:

The insertion loss, at a given frequency, of a group of couplers is measured at 25°C and then averaged. The measurements are performed under small signal conditions (i.e. using a Vector Network Analyzer). The process is repeated at 85°C and 150°C. A best-fit line for the measured data is computed and then plotted from -55°C to 150°C.

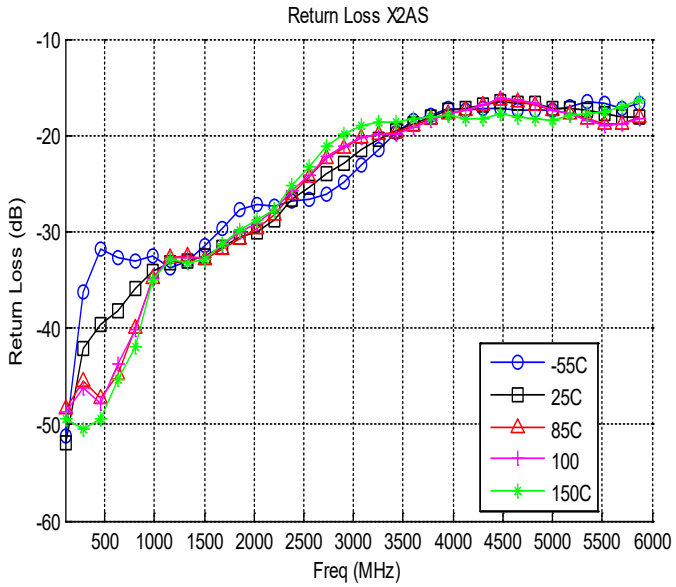
Power Derating:

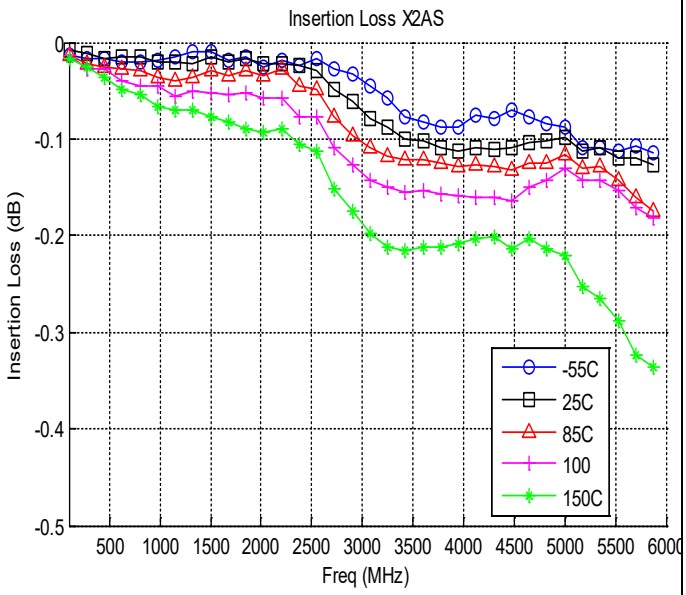
The power handling and corresponding power derating plots are a function of the thermal resistance, mounting surface temperature (base plate temperature), maximum continuous operating temperature of the coupler, and the thermal insertion loss. The thermal insertion loss is defined in the Power Handling section of the data sheet.

As the mounting interface temperature approaches the maximum continuous operating temperature, the power handling decreases to zero.

If mounting temperature is greater than 85°C, Xinger crossover will perform reliably as long as the input power is derated to the curve above.

Typical Performance: 0.5 GHz to 6.0 GHz



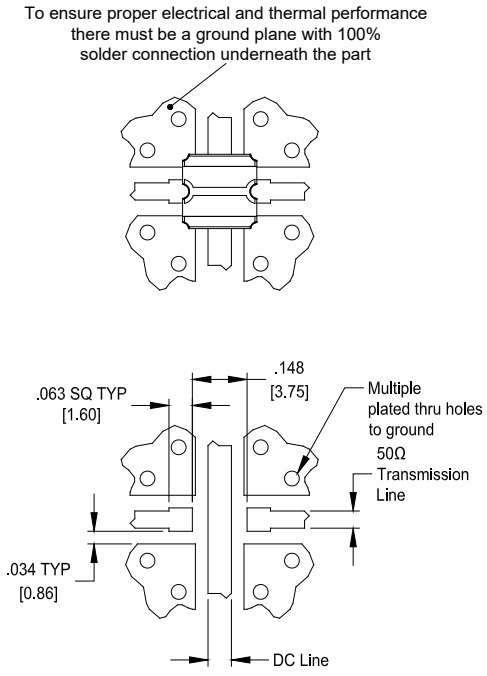


Mounting

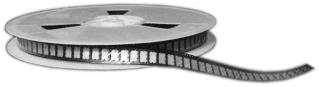
In order for Xinger crossovers to work optimally, there must be 50Ω transmission lines leading to and from all of the RF ports. Also, there must be a very good ground to the corners of the crossover to insure proper electrical performance. If either of these two conditions are not satisfied, insertion loss, VSWR and isolation parameters may not meet published specifications.

When a surface mount crossover is mounted to a printed circuit board, the primary concerns are; insuring the RF pads of the device are in contact with the circuit trace of the PCB and insuring the ground plane of neither the component nor the PCB is in contact with the RF signal. Since the component is not symmetrical, the crossovers are specifically oriented in the tape and reel. An example of how the PCB footprint could look is shown below. In specific designs, the 50Ω lines need to be adjusted to the unique dielectric coefficients and thicknesses as well as varying pick and place equipment tolerances.

Mounting Footprint



Dimensions are in Inches [Millimeters]
X2AS Rev A Mounting Footprint



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