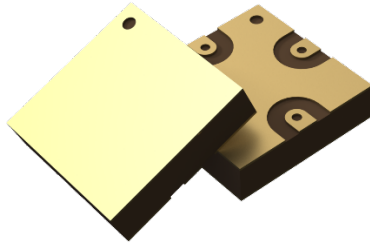




RF Cross Over
DC – 40GHz
Made in USA



Description:

The XMX00400R1G is an ultra-wide band DC - 40 GHz RF to RF crossover that enables the ability to cross two intersecting RF traces on the surface of a substrate / PWB to save addition of extra layers for routing and packaged in an easy-to-use Xinger style manufacturing friendly surface mount package. XMX00400R1G has a power rating of 2 Watts (AVG) and a peak to average ratio of 12dB. It is designed particularly for all applications in all end markets and has plating finished consistent with the COTS Mil-Aero industry. The crossover is ideal for any critical applications where layout and available space are at a premium and resorting to addition PWB layers and larger overall footprints are costly.

Parts have been subjected to rigorous Xinger qualification testing, and they are manufactured using materials with coefficients of thermal expansion (CTE) compatible with common substrates such as FR4, RF-35, RO4350 and polyimide. Produced with 6 of 6 RoHS compliant ENIG finish.

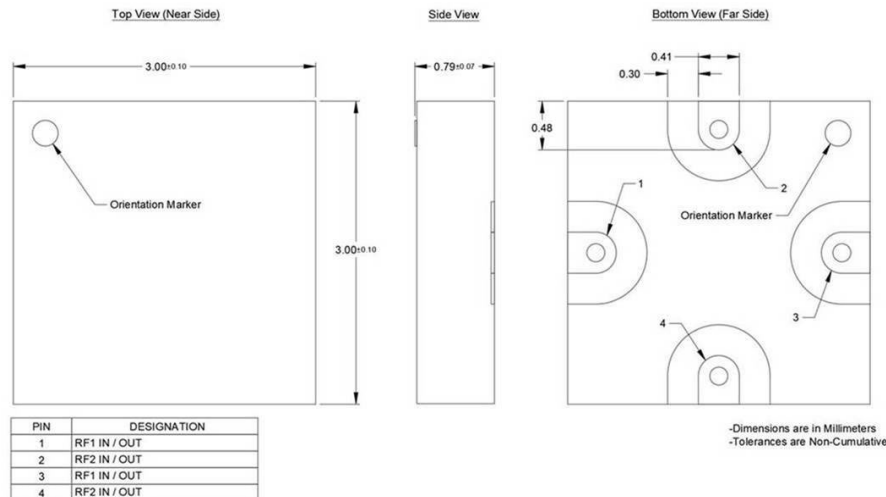
Features:

- DC-40 GHz
- Power 2W (AVG)
- Peak to Average Ratio 12dB
- Designed for all end markets
- Insertion Loss (0.4dB)
- High Isolation (<-30dB)
- Tape & Reel
- Production Friendly
- ENIG finish

Electrical Specifications*:

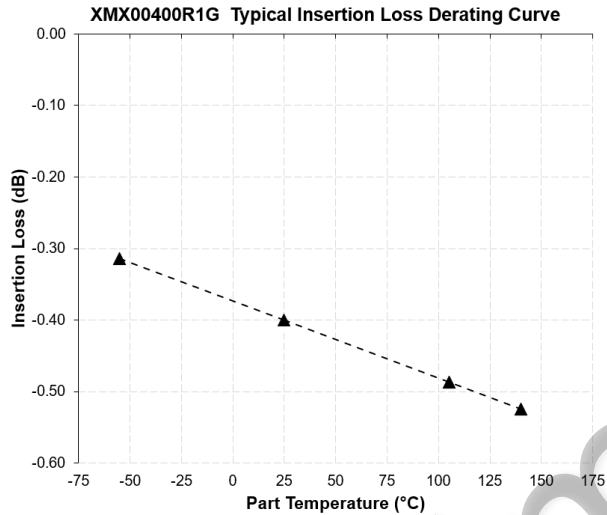
Parameter (@25°C)	Min	Typ	Max	Unit
Frequency	0		40	GHz
Port Impedance		50		Ω
Return Loss		-20	-15	dB
Insertion Loss		-0.4		dB
Isolation		-40	-30	
Power Handling (Avg) @105°C			2	Watts
Operating Temperature	-55		+140	°C

Mechanical Outline:



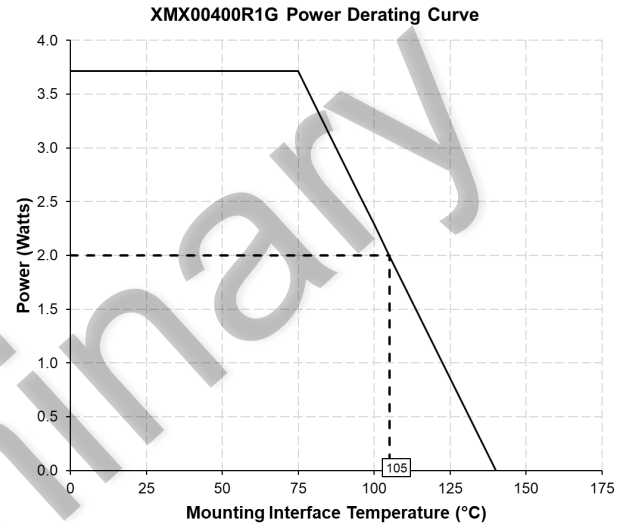
Insertion Loss and Power Derating Curves:

Insertion Loss Derating:



The insertion loss, at a given frequency of the cross over 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 -55°C and 140°C. A best-fit line for the measured data is computed and then plotted from -55°C to 140°C.

Power Derating:



The power handling and corresponding power derating plots are a function of 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 105°C, the Xinger cross over will perform reliably if the input power is derated to the curve above.

Definition of Measured Specifications:

Parameter	Definition	Mathematical Representation <i>i, j, k, m</i> is denoted as the port index of RF2 in, out; RF1 in, out ports for specific pin configuration shown in the table on page 1
Return Loss	The impedance match of the crossover to a 50Ω system.	$Return\ Loss(dB) = 20 \log[mag(S_{nn})];$ $n = i, j, k, m$
Insertion Loss	The input power divided by the power at the output port.	$Insertion\ Loss(dB) = 20 \log [mag(S_{ji})]$ Or $Insertion\ Loss(dB) = 20 \log [mag(S_{km})]$
Isolation	RF1 in/out power divided by RF2 in/out power.	$Isolation(dB) = 20 \log [mag(S_{ik})]$ Or $Isolation(dB) = 20 \log [mag(S_{jm})]$

*100% RF test is performed per spec definition for pin configuration 1 and 2.

Part Naming Convention:

XM00400 R 1 G

Function & Family	Frequency	Package Size	Power Handling	Finish
XM = Xinger Crossover	00400 = typ freq range DC to 40.0 GHz	R = 0.118" x 0.118"	1 = Low Power	G = ENIG

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