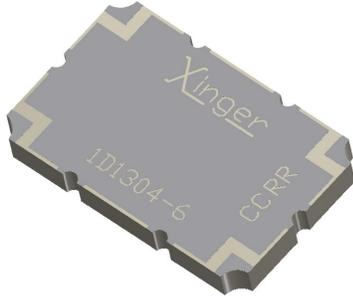


Xinger[®]

**Uneven Split Quadrature Coupler
6 dB**



Description:

The 1D1304-6 is a low profile uneven split quadrature coupler 6dB in an easy to use Xinger style surface mount package covering the 5G and Mil-Aero bands. The 1D1304-6 is ideal for inline split/combine amplifiers and for power injection and can be used in most high power designs. Parts have been subjected to rigorous Xinger qualification testing and units are 100% tested.

They are manufactured using materials with x and y thermal expansion coefficients compatible with common substrates such as FR4, G-10 and polyamide.

Features:

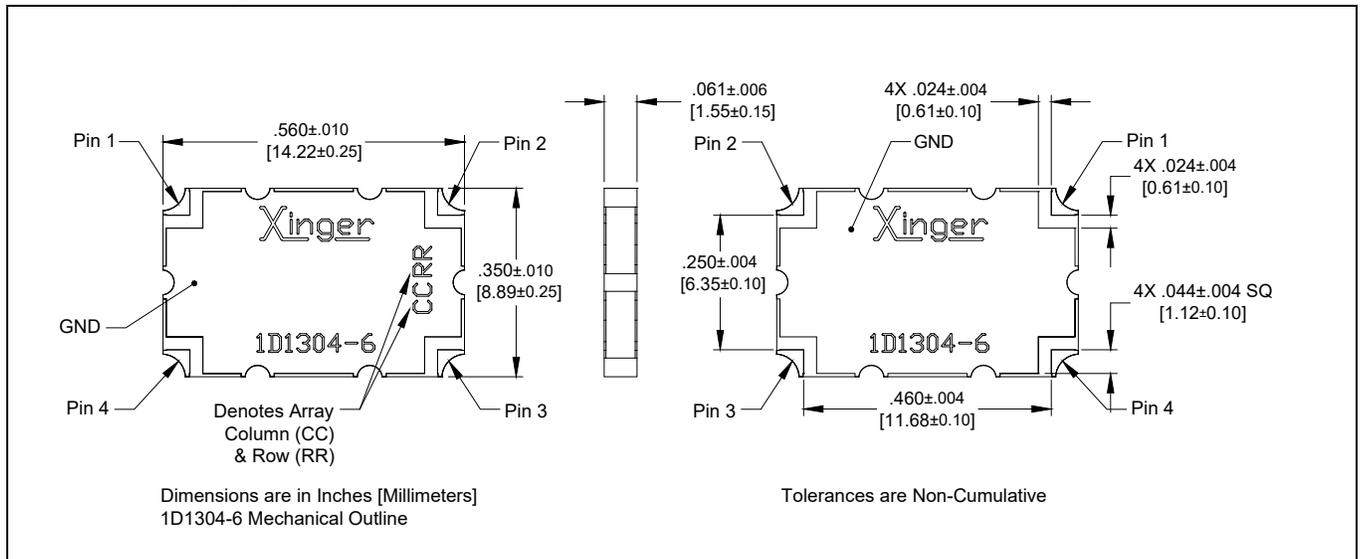
- 800 – 1200 MHz
- 5G and Mil-Aero bands
- Power 150W (CW)
- Low Loss
- High Directivity
- Surface Mountable
- Tape And Reel
- Convenient Package
- 100% Tested

Electrical Specifications**

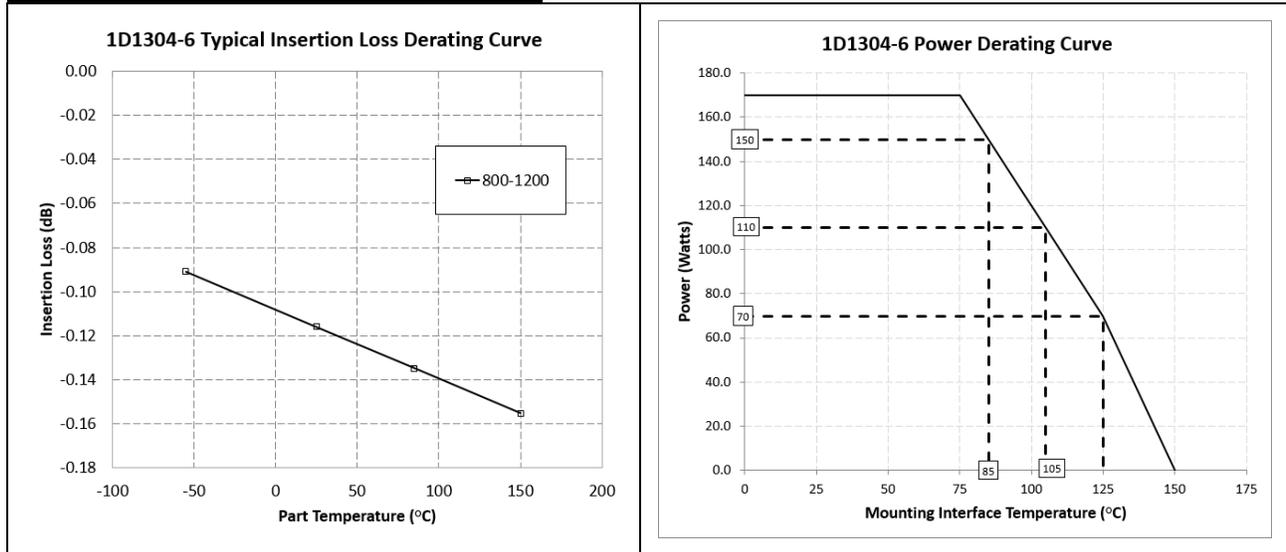
| Frequency | Mean Coupling | Insertion Loss | VSWR |
|-------------------|---------------|----------------|-----------------|
| MHz | dB | dB Max | Max : 1 |
| 815 – 960 | 6.0 ± 1.0 | 0.25 | 1.17 |
| 800 - 1200 | 6.0 ± 1.0 | 0.25 | 1.17 |
| Freq. Sensitivity | Directivity | Power Handling | Operating Temp. |
| dB Max | dB Min | Watts | °C |
| ± 0.40 | 20 | 150 | -55 to +85 |
| ± 0.60 | 20 | 150 | -55 to +85 |

**Specification based on performance of unit properly installed on microstrip printed circuit boards with 50 Ω nominal impedance. Specifications subject to change without notice.

Outline Drawing:



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.

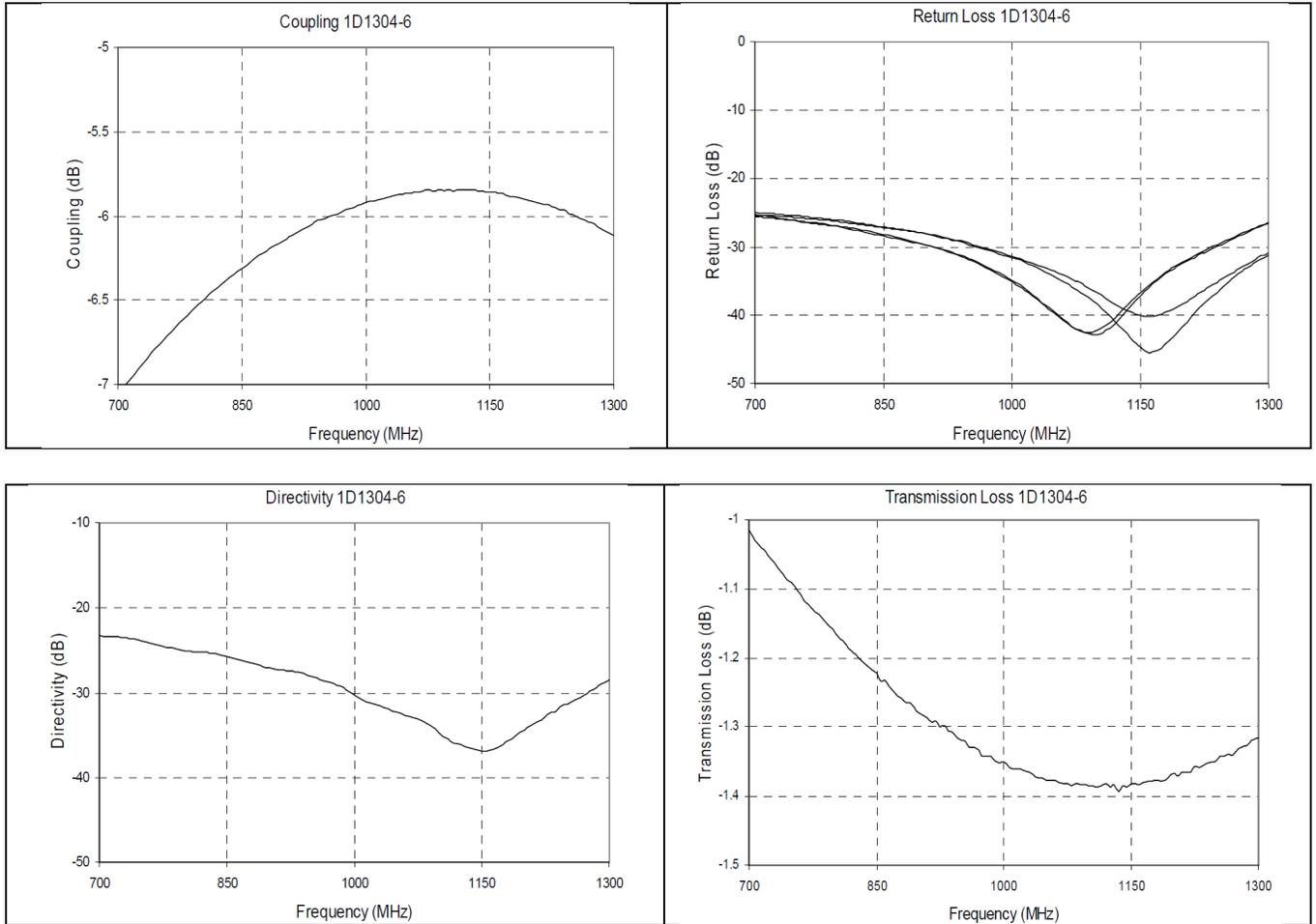
Power Derating:

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.

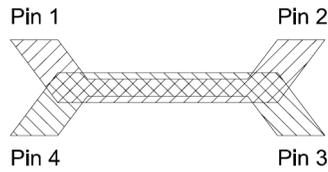
As the mounting interface temperature approaches the maximum continuous operating temperature, the power handling decreases to zero.

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

Typical Performance 700 MHz to 1300 MHz



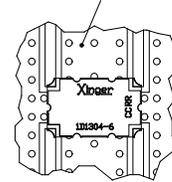
Pin Configuration



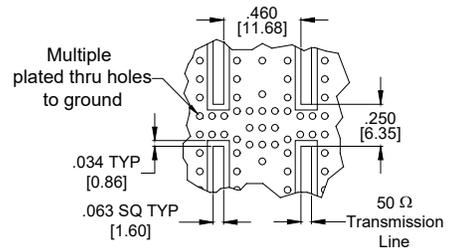
| Directional Coupler Pin Configuration | | | | |
|---------------------------------------|----------|----------|----------|----------|
| | Pin 1 | Pin 2 | Pin 3 | Pin 4 |
| Configuration #1 | Input | Output | Isolated | Coupled |
| Configuration #2 | Output | Input | Coupled | Isolated |
| Configuration #3 | Isolated | Coupled | Input | Output |
| Configuration #4 | Coupled | Isolated | Output | Input |

Mounting Footprint

To ensure proper electrical and thermal performance there must be a ground plane with 100% solder connection underneath the part



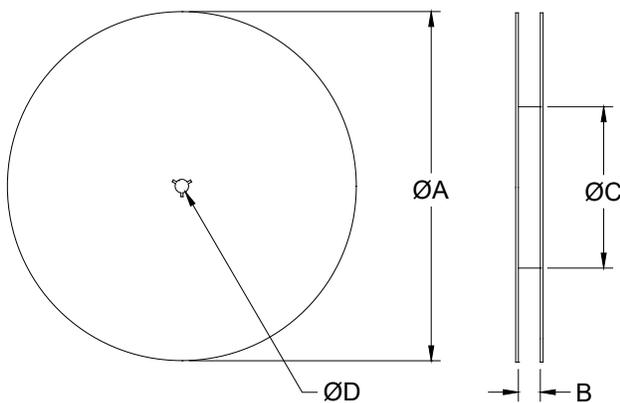
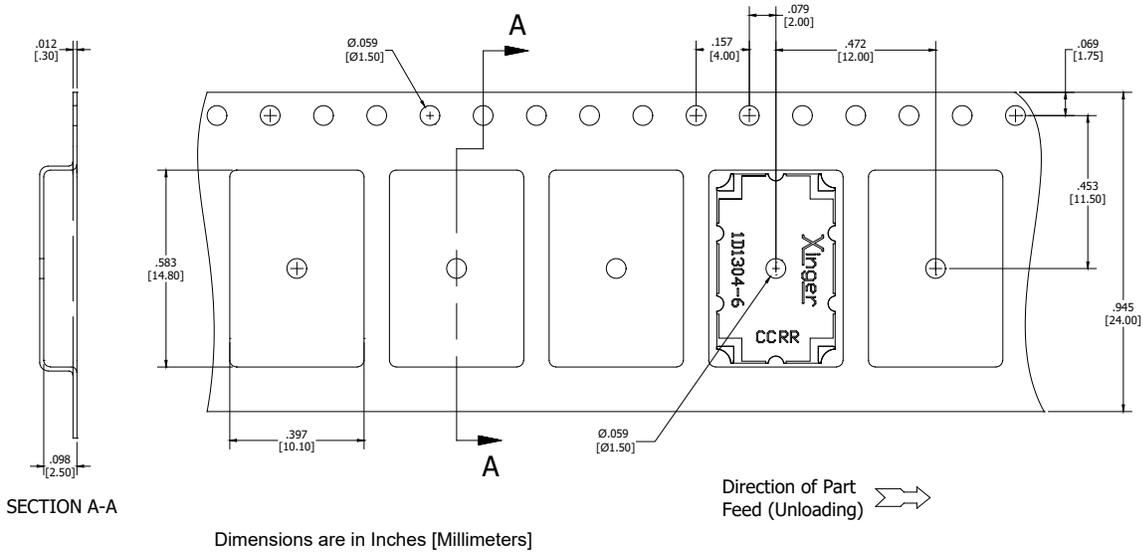
Part is Symmetric About All Axis



Dimensions are in Inches [Millimeters]

Packaging and Ordering Information

Parts are available in reels. Packaging follows EIA 481 for reels. Part orientation may vary; part is symmetric about all axis. Tape and reel is available in 2000 pcs per reel.



| TABLE 1 | |
|-------------------------------|----------------|
| REEL DIMENSIONS (inches [mm]) | |
| ØA | 13.0 [330.0] |
| B | .945 [24.0] |
| ØC | 4.017 [102.03] |
| ØD | 0.512 [13.0] |