

Xinger®

**Directional Coupler
20dB**



Description:

The 11302-20 is a low profile 20dB directional coupler in an easy to use Xinger style surface mount package covering 190 to 400 MHz with a power handling of 100 Watts AVG and a peak to average of 12dB. The 11302-20 is ideal for the COTS Mil-Aero segment, for VHF frequencies in applications including avionics, LMR, and railway communications, and for power and frequency detection as well as VSWR monitoring, and can be used in most high-power designs. Parts have been subjected to rigorous 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 polyimide.

Features:

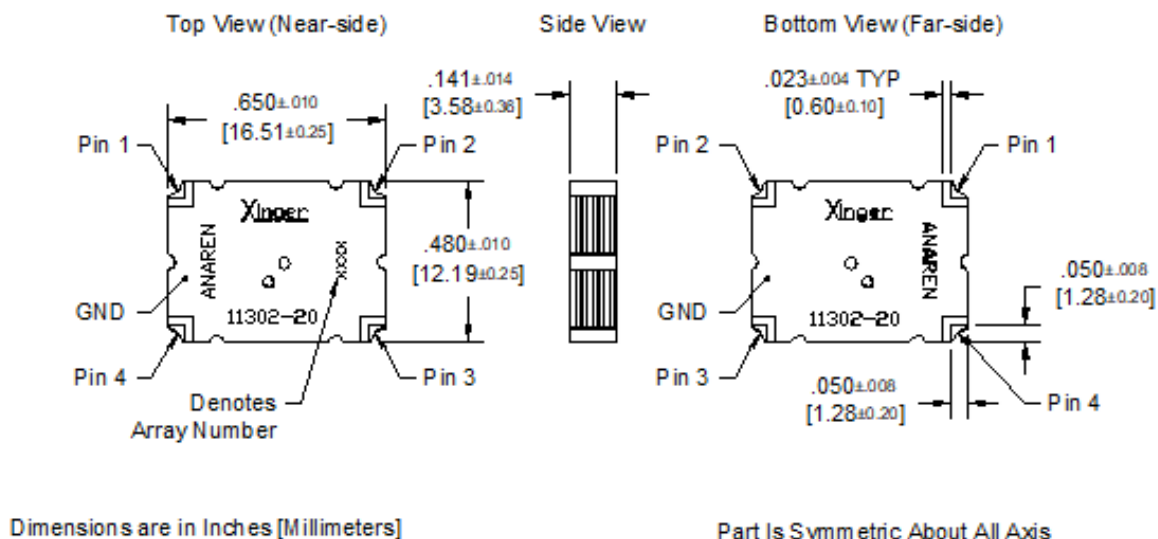
- 190 - 400 MHz
- 100 Watt AVG
- Avionics, LMR, and Railway Communications
- Low loss
- High Directivity
- Surface Mountable
- Tape And Reel
- Convenient Package
- 100% Tested

Electrical Specifications*:

Frequency	Mean Coupling	Insertion Loss	VSWR
MHz	dB	dB Max	Max: 1
190 – 400	20 ± 1.5	0.30	1.15
Directivity	Frequency Sensitivity	Power	Operating Temp.
dB Min	dB Max	AVG Watts at 85°C	°C
14	±0.90	100	-55 to +130

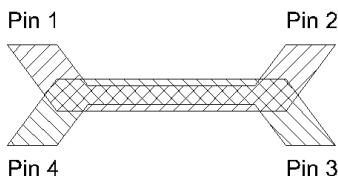
**Specification based on performance of unit properly installed on microstrip printed circuit boards with 50 Ω nominal impedance. *Specifications subject to change without notice.

Mechanical Outline:



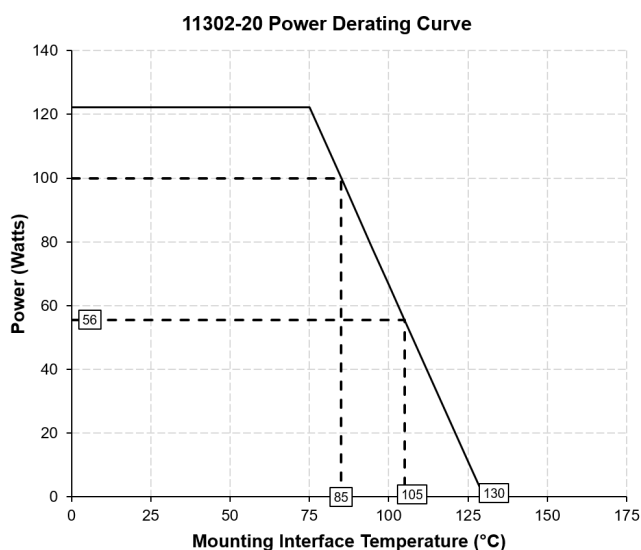
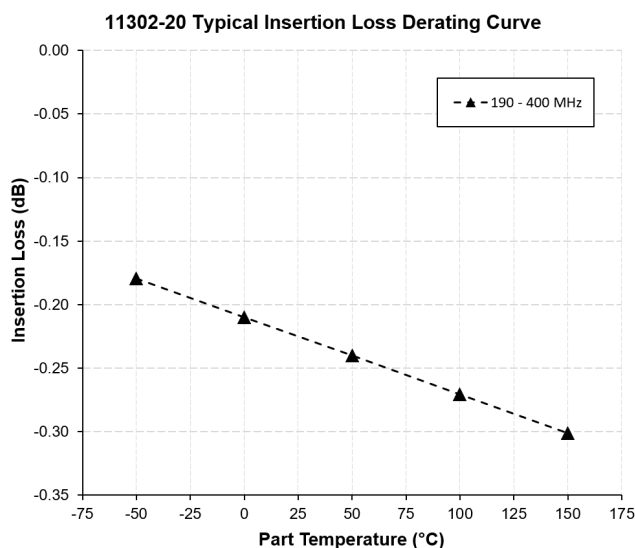
Pin Configuration:

The component has an orientation marker to denote Pin 1. Once port one has been identified the other ports are known automatically. Please see the chart below for clarification:



	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

Insertion Loss and Power Derating Curves:



Insertion Loss Derating:

The insertion loss, at a given frequency, of the component 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, 85°C and 140°C. A best-fit line for the measured data is computed and then plotted from -50°C to 150°C.

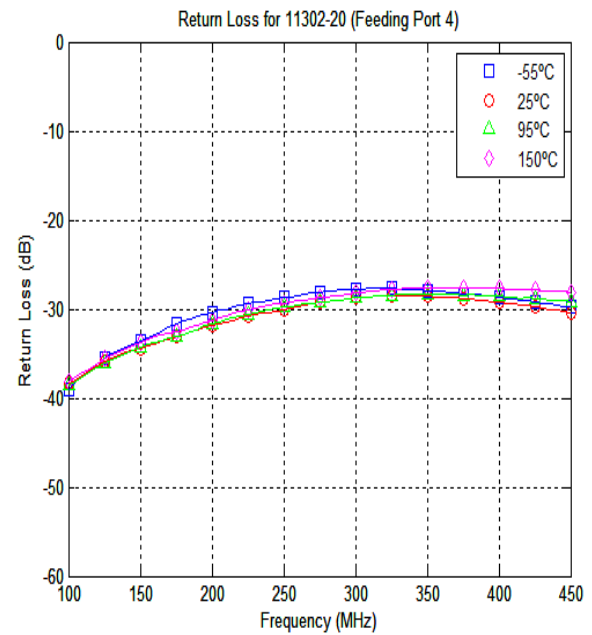
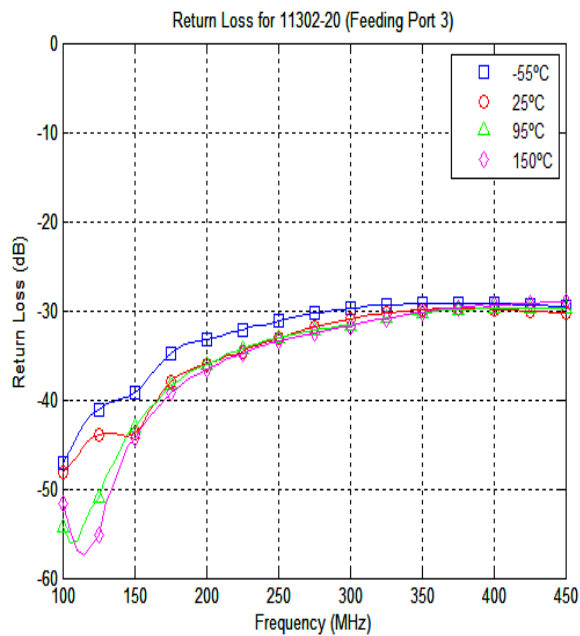
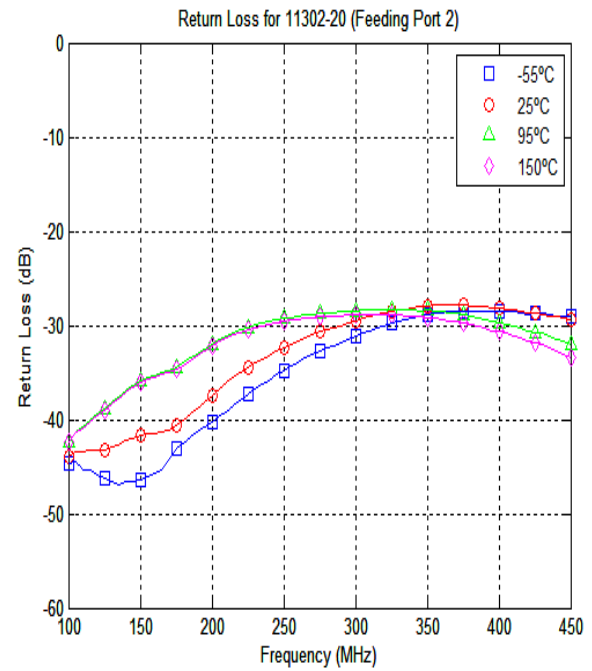
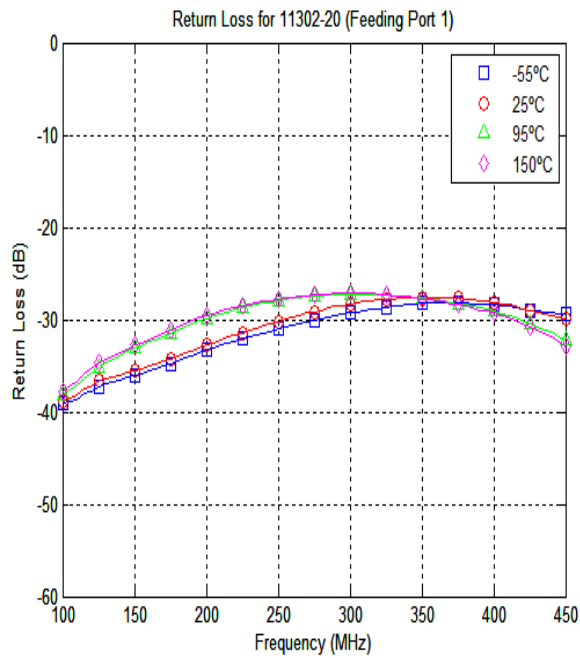
Power Derating:

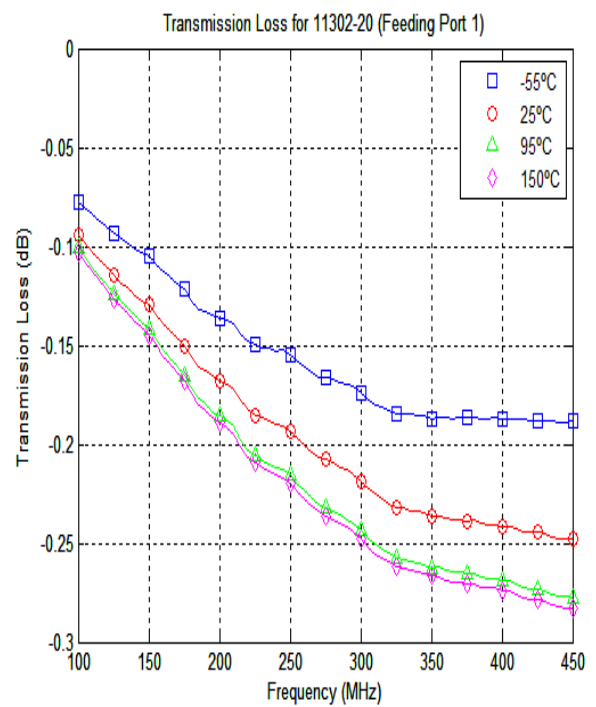
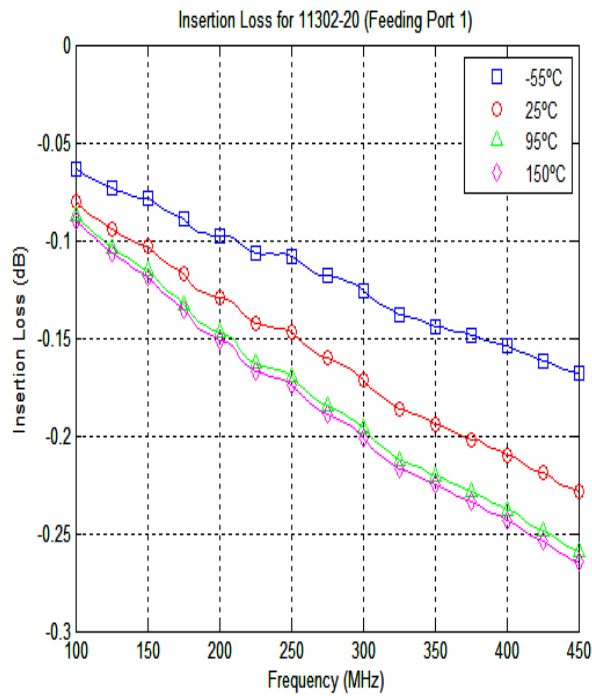
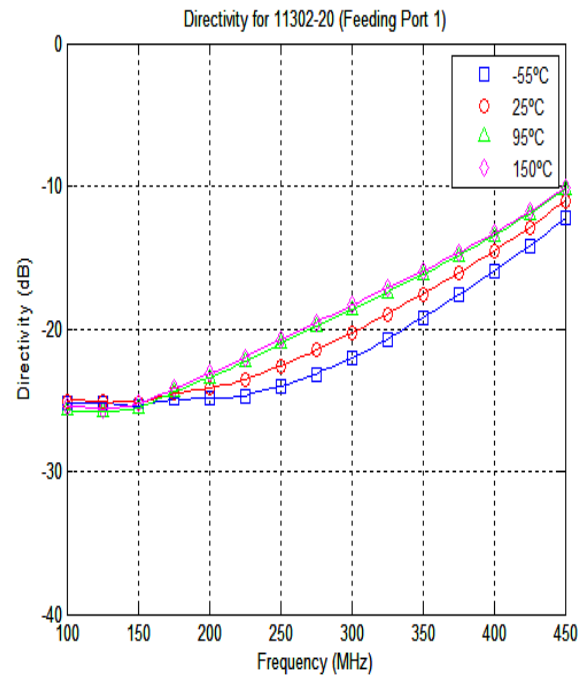
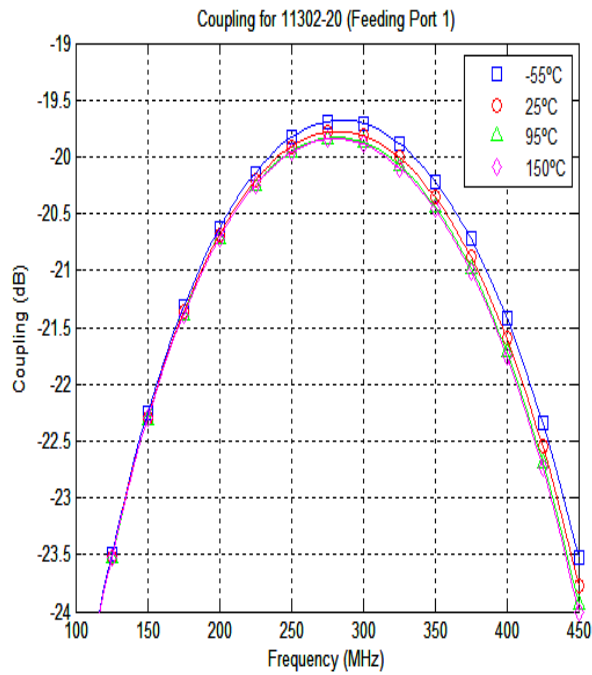
The power handling and corresponding power derating plots are a function of thermal resistance, mounting surface temperature (base plate temperature), maximum continuous operating temperature of the component, and the thermal insertion loss. The thermal insertion loss is defined in the Power Handling 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 component will perform reliably as long as the input power is derated to the curve above.

Typical Temperature Performance Plots:





Packaging and Ordering Information:

Parts are available in reels. Packaging follows EIA 481 for reels. Parts are oriented in tape and reel as shown below. Tape and reel is available in 1000 pcs per reel.

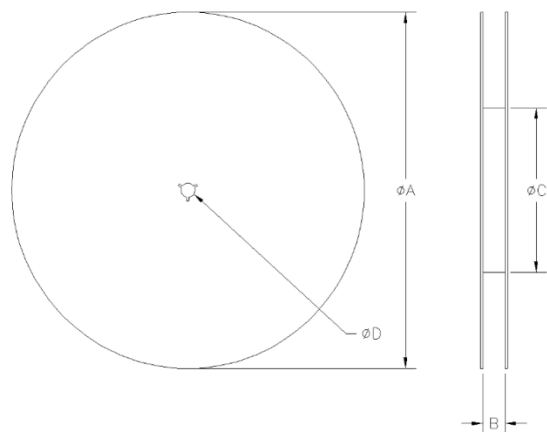
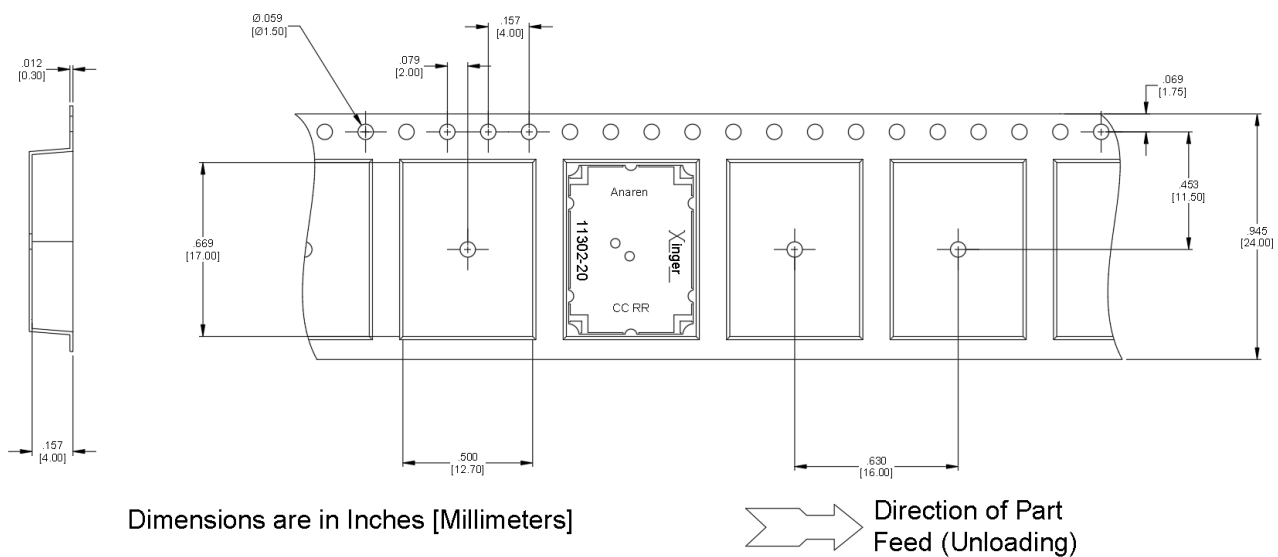


TABLE 1 (for 1000 pcs)
REEL DIMENSIONS: inches [mm]

ØA	13.0 [330.00]
B	.945 [24.0]
ØC	4.017 [102.03]
ØD	0.512 [13.00]

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