

## Directional Coupler, 2-8GHz, 20dB, SMA Female

## WMC-2-8-20dB-S

### Description

Model WMC-2-8-20dB-S from Werbel Microwave is a directional coupler that covers 2 GHz to 8 GHz with broadband flat coupling response, high directivity, and excellent return loss performance. Typical coupling ripple flatness is  $\pm 0.5$ dB typical. Insertion loss 0.28dB typical. Directivity 22dB typical. Return loss 24dB typical minimizes reflections. The frequency range is used extensively in Wi-Fi testing and covers both S band and C band in one package. Assembled and tested in USA. Enclosure measures 2.00 x 0.69 x 0.38 inches and has SMA female connectors. The device is RoHS compliant.



Photo is representative.

Specifications	Min.	Typ.	Max.	Units
Frequency	2	--	8	GHz
Impedance	--	50	--	Ohm
Coupling	--	20 $\pm$ 1.0	--	dB
Frequency Sensitivity (Flatness)	--	$\pm$ 0.50	$\pm$ 1.25	dB
Mainline Loss <sup>1</sup>	--	0.28	0.45	dB
Directivity	18	22	--	dB
Return Loss (In and Out)	19	24	--	dB
Return Loss (Coupling)	19	22	--	dB
Isolation	--	42	--	dB
Input Power (CW) <sup>2</sup>	--	--	50	Watts

### Mechanical

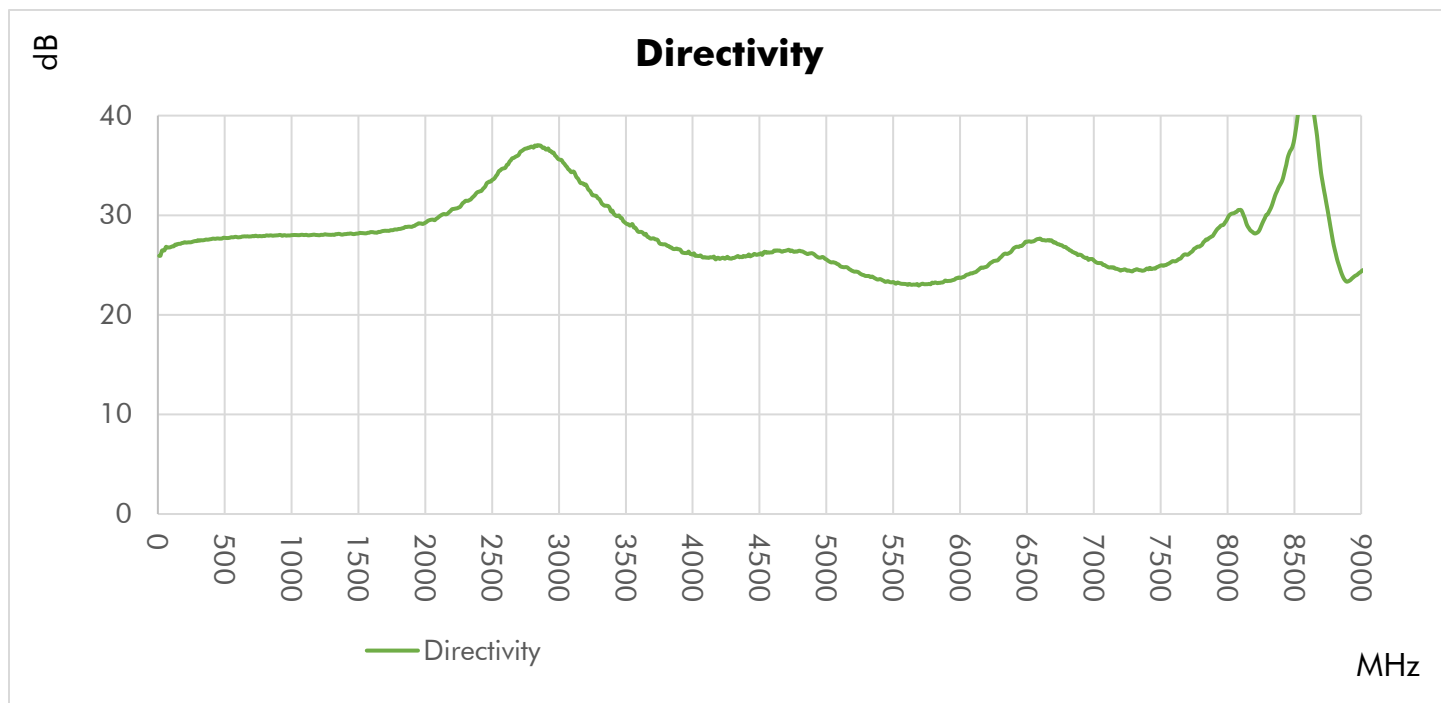
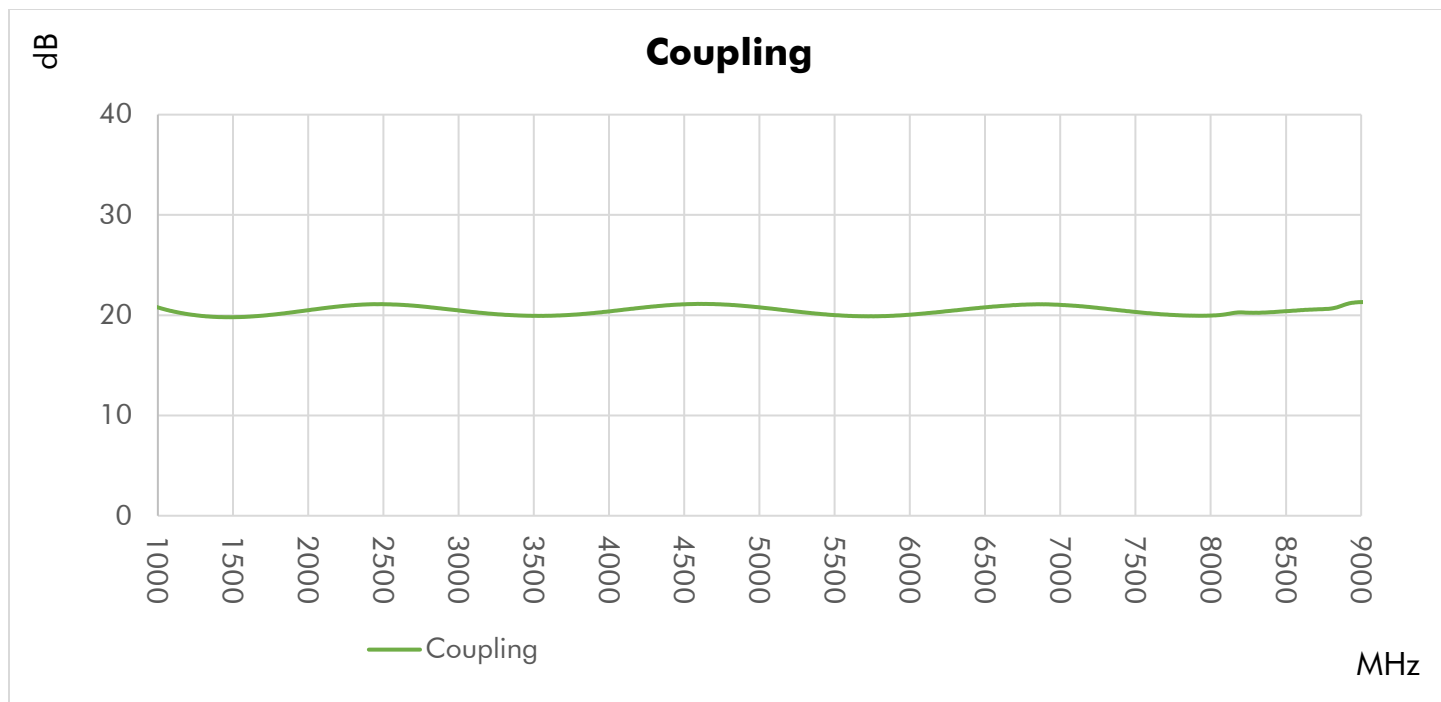
Connector Interface	SMA-Female
Operating Temperature <sup>3</sup>	-55 to +85 °C
Storage Temperature	-55 to +100 °C
Weight	1 oz (28 g)
Humidity	10-90% non-condensing
Environment	Indoor Use Only

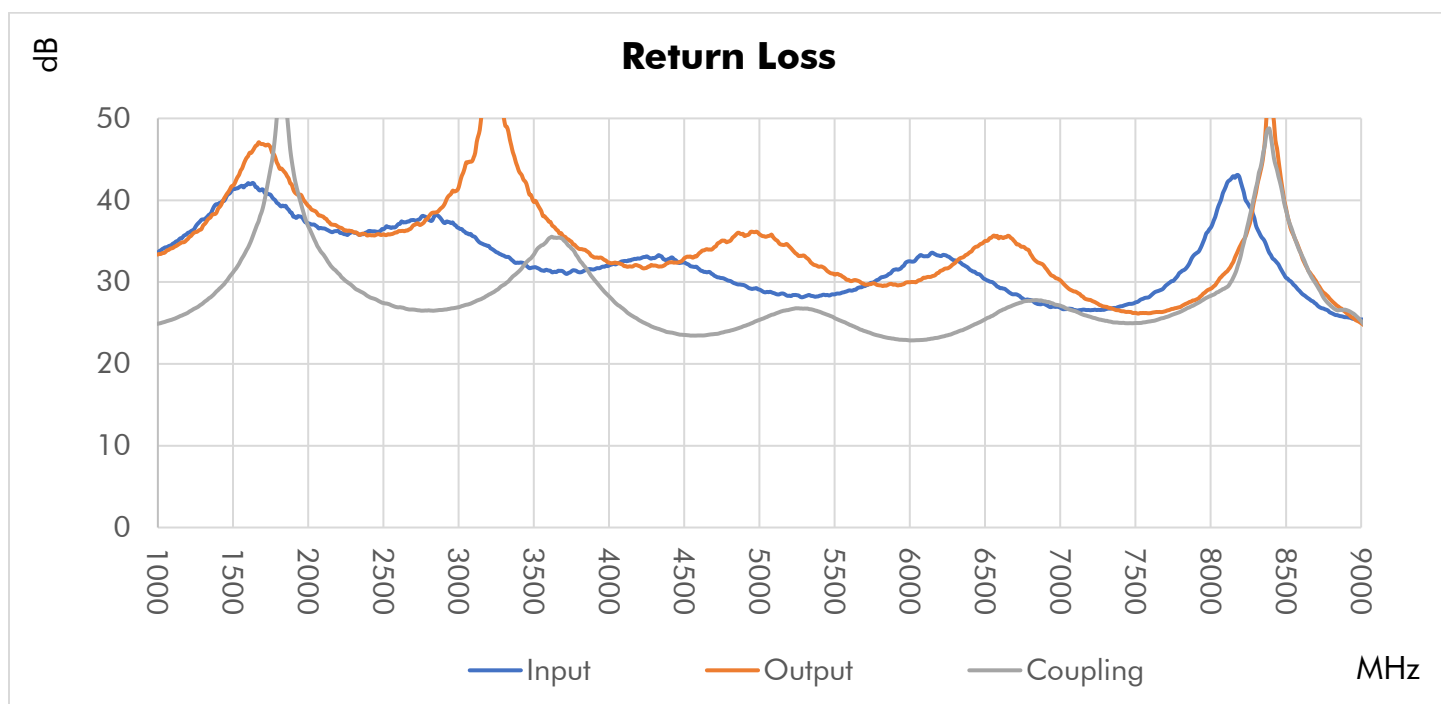
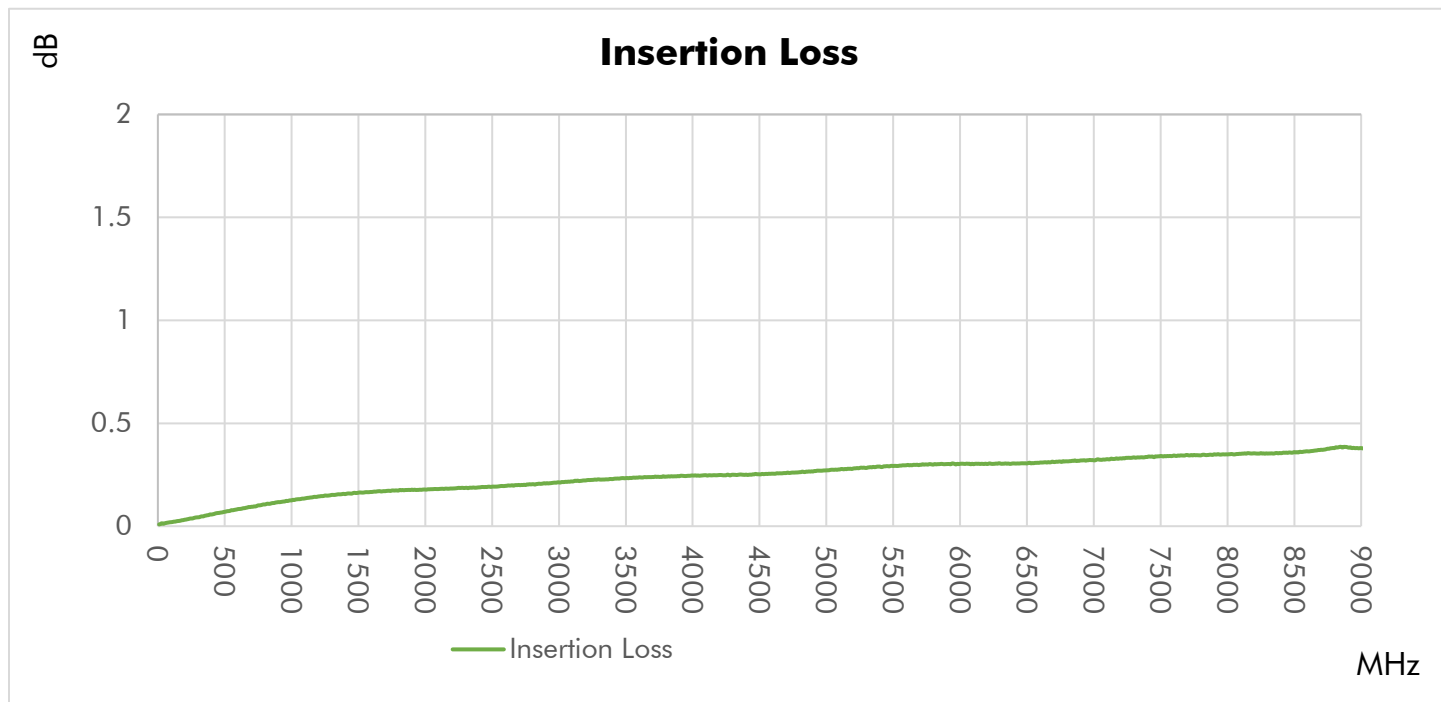
1. Mainline loss includes coupling loss.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specification at +25 °C.
4. To the best of our knowledge at the time of publication

### Materials

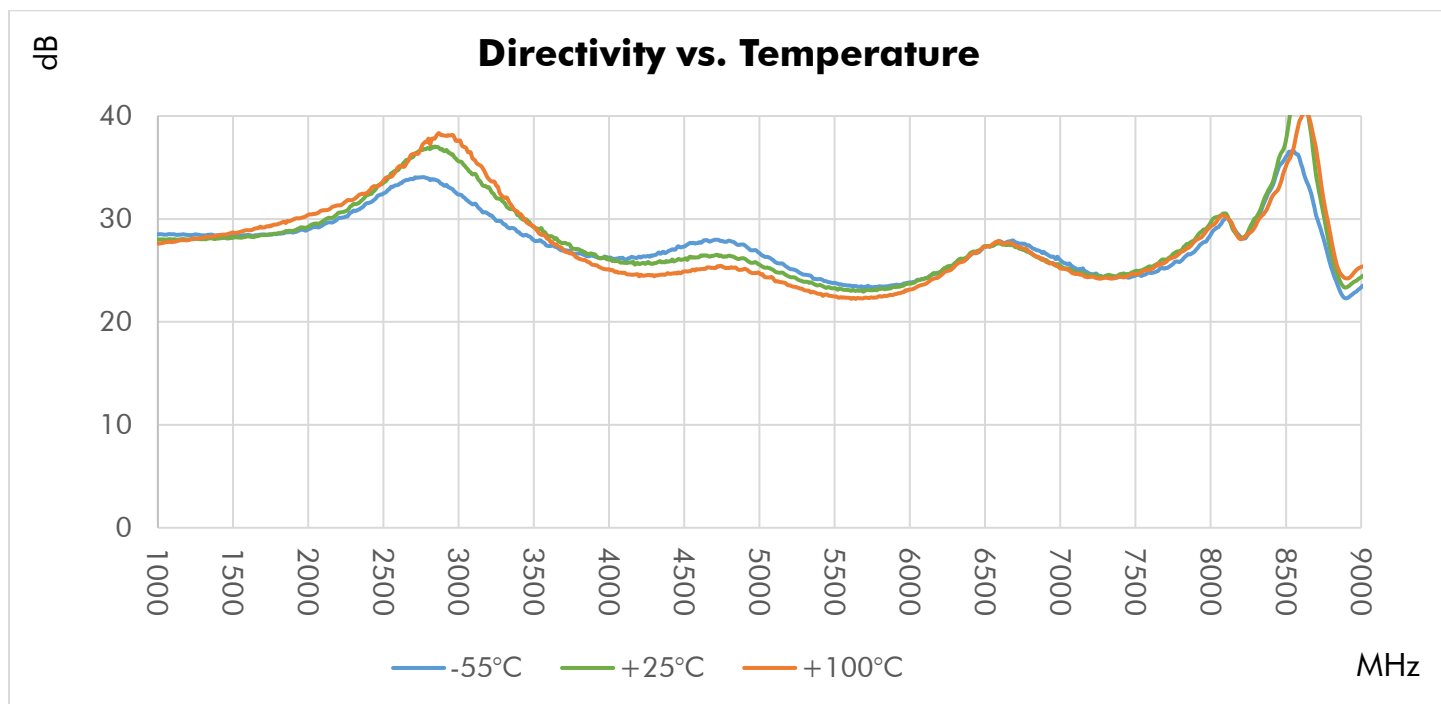
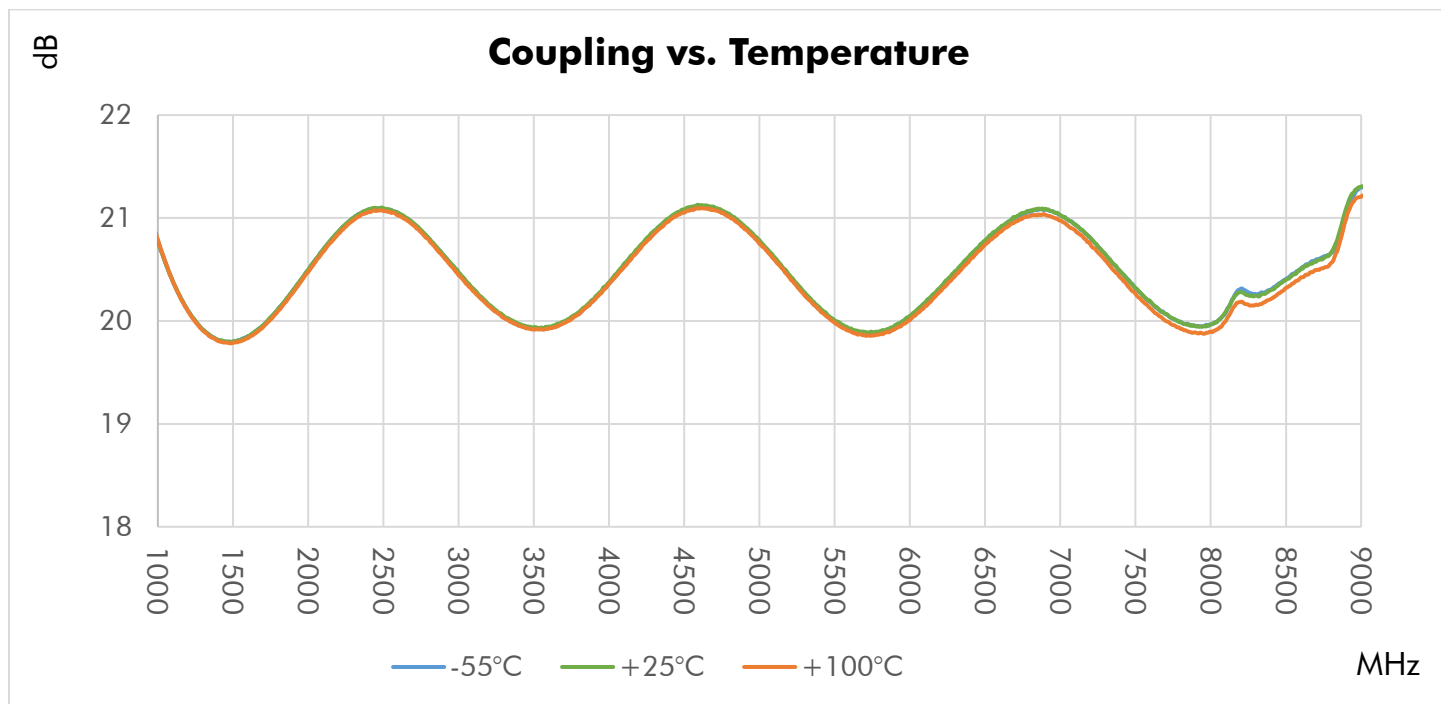
RoHS and REACH Compliant <sup>4</sup>	
Enclosure	Aluminum
Connectors	Stainless Steel
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Green Paint

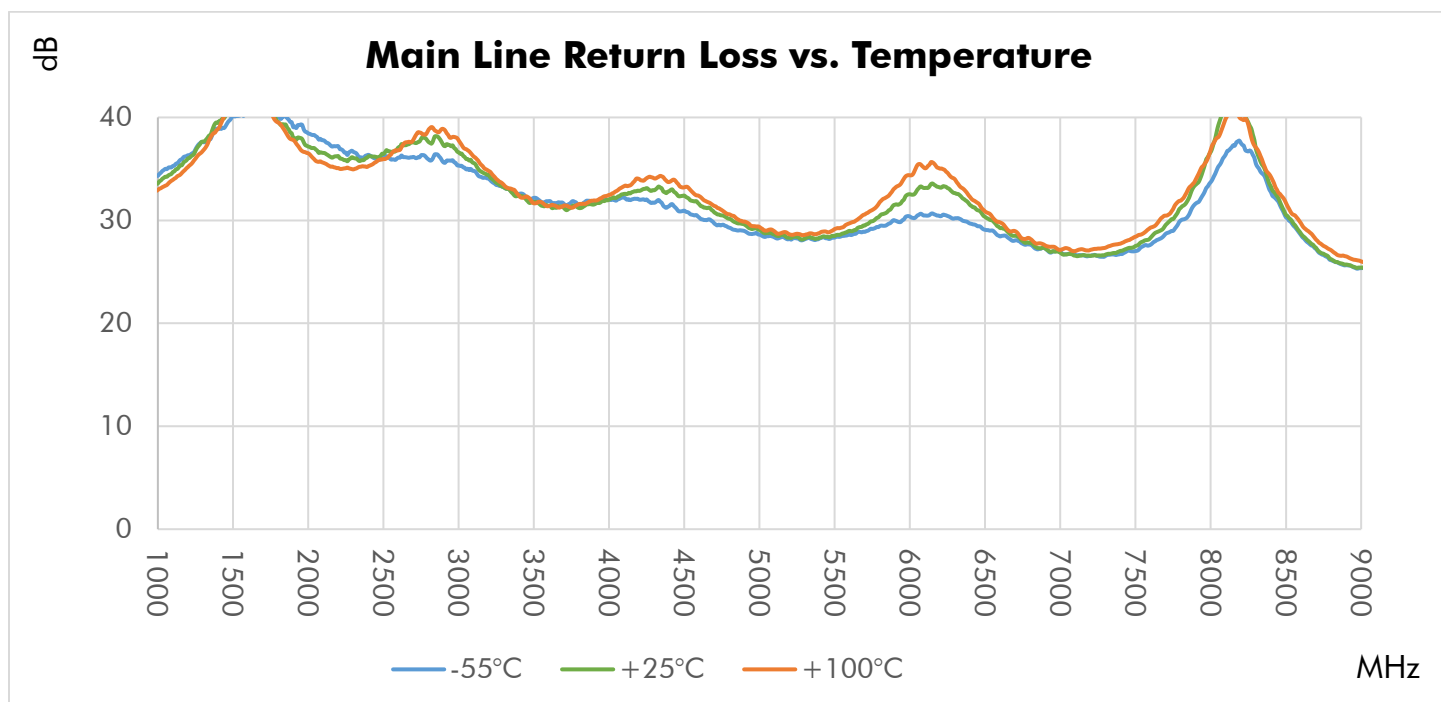
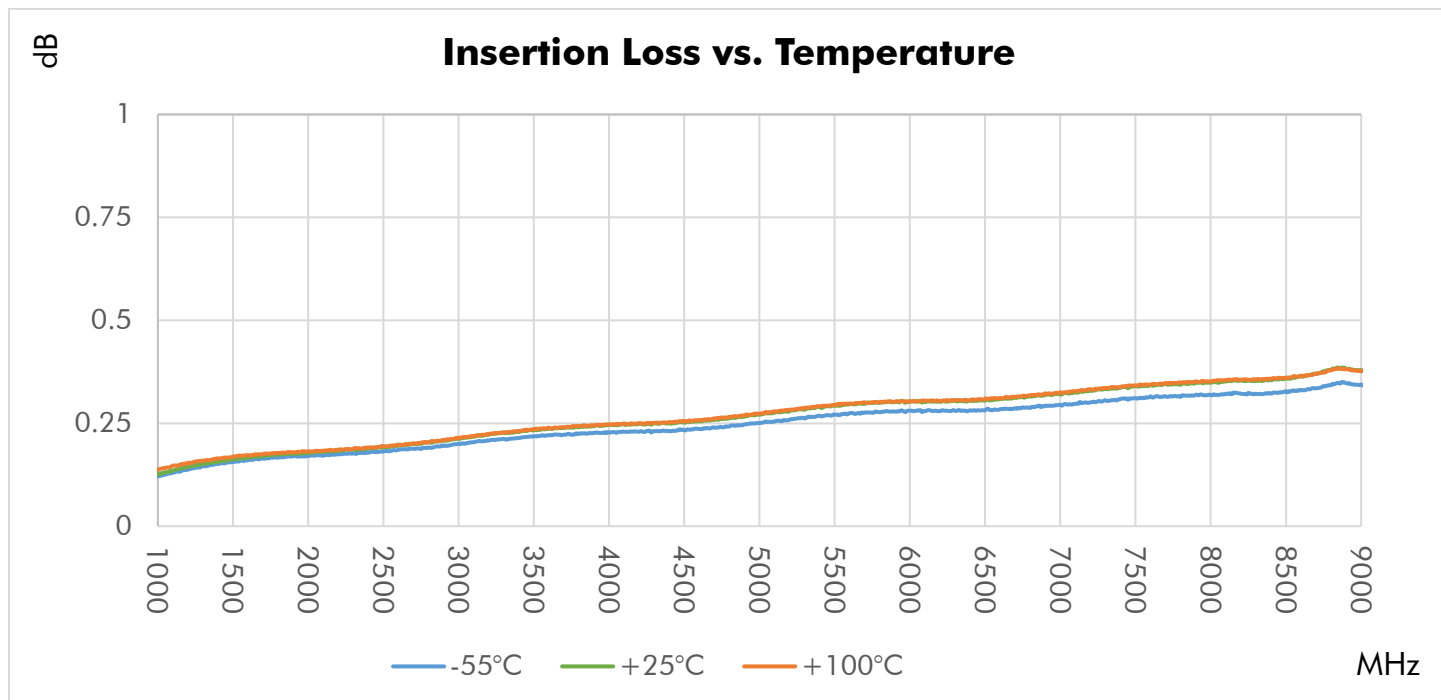
## Typical Performance at +25 °C





## Typical Performance Over Temperature

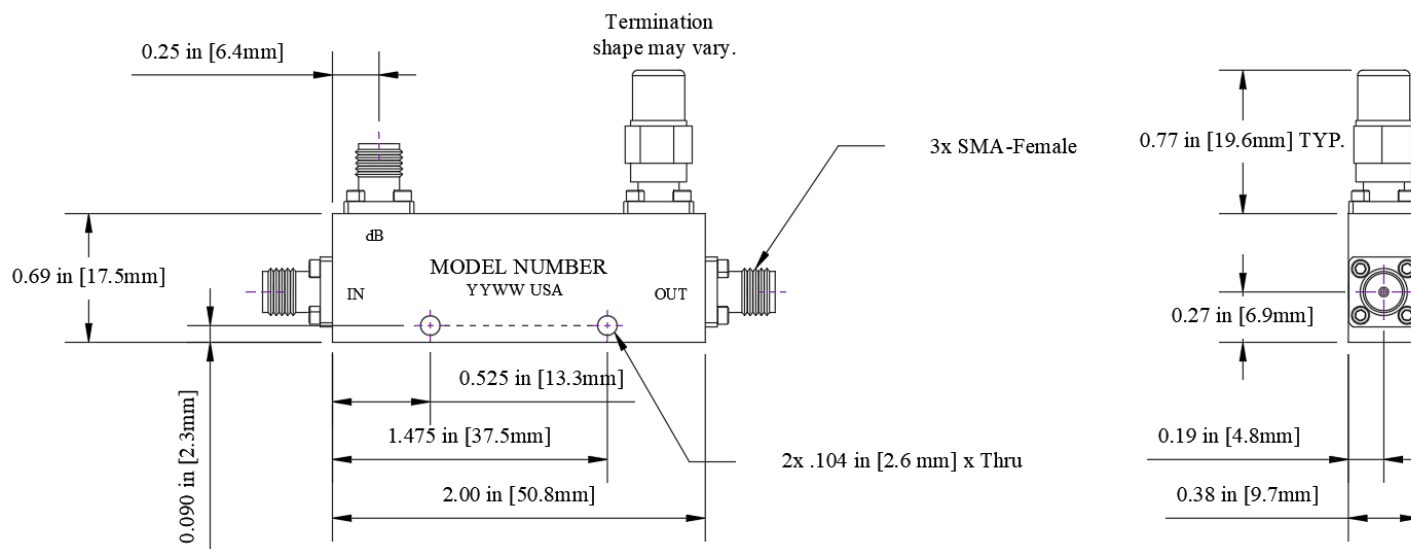




## Typical Performance Data

Frequency (MHz)	Return Loss (dB)			Mainline Loss (dB)	Coupling (dB)	Directivity (dB)
	In	Out	Cpl.	In-Out	In-Cpl.	
2000	41.6	38.0	36.9	0.17	20.4	38.8
2500	36.6	38.5	28.2	0.17	20.9	28.6
3000	36.4	40.2	40.1	0.18	20.4	32.2
3500	46.2	44.4	26.2	0.22	20.0	35.1
4000	40.2	35.4	24.4	0.24	20.4	25.9
4500	31.9	31.3	36.0	0.21	20.8	27.0
5000	35.3	32.2	25.2	0.28	20.6	53.6
5500	39.5	41.5	24.6	0.26	19.9	30.6
6000	35.2	32.0	28.0	0.22	19.9	33.1
6500	27.7	30.9	25.7	0.21	20.5	27.7
7000	31.6	29.4	31.2	0.33	20.7	23.8
7500	33.3	34.4	27.2	0.29	20.3	28.6
8000	35.9	35.8	25.4	0.34	19.8	27.8

## Outline Dimensions



### Outline # OL-1305

Dimensions are in inches, [mm] shown for convenience.

Tolerances on 2-pl decimals:  $\pm .03$ . 3-pl decimals:  $\pm .015$ .

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