

Directional Coupler, 6-18GHz, 10dB, SMA Female

WMC-6-18-10dB-S

Description

Model WMC-6-18-10dB-S from Werbel Microwave is a directional coupler that covers 6 to 18 GHz with broadband flat coupling response, high directivity, and excellent return loss performance. Coupling flatness response, also referred to as frequency sensitivity, is typically ± 0.3 dB or better across the band. Directivity 15dB typical. Return loss 18dB typical. Insertion loss 0.82dB typical. The enclosure is compact, measuring 1.00 x 0.60 x 0.38 inches, with SMA-Female connectors. The unique approach at creating a coupled line structure results in a super flat coupling response. This allows for highly accurate and dependable measurements. The device covers both X and Ku bands in one compact size enclosure. Our own design, assembled and tested in the USA.



Photo is representative.

Specifications	Min.	Typ.	Max.	Units
Frequency	6	--	18	GHz
Impedance	--	50	--	Ohm
Coupling	--	10	± 1.25	dB
Frequency Sensitivity	--	± 0.30	± 1.00	dB
Mainline Loss ¹	--	0.82	1.05	dB
Directivity	12	15	--	dB
Return Loss (In and Out)	15	18	--	dB
Return Loss (Coupling)	14	16	--	dB
Isolation	--	25	--	dB
Input Power (CW) ²	--	--	50	Watts

Mechanical

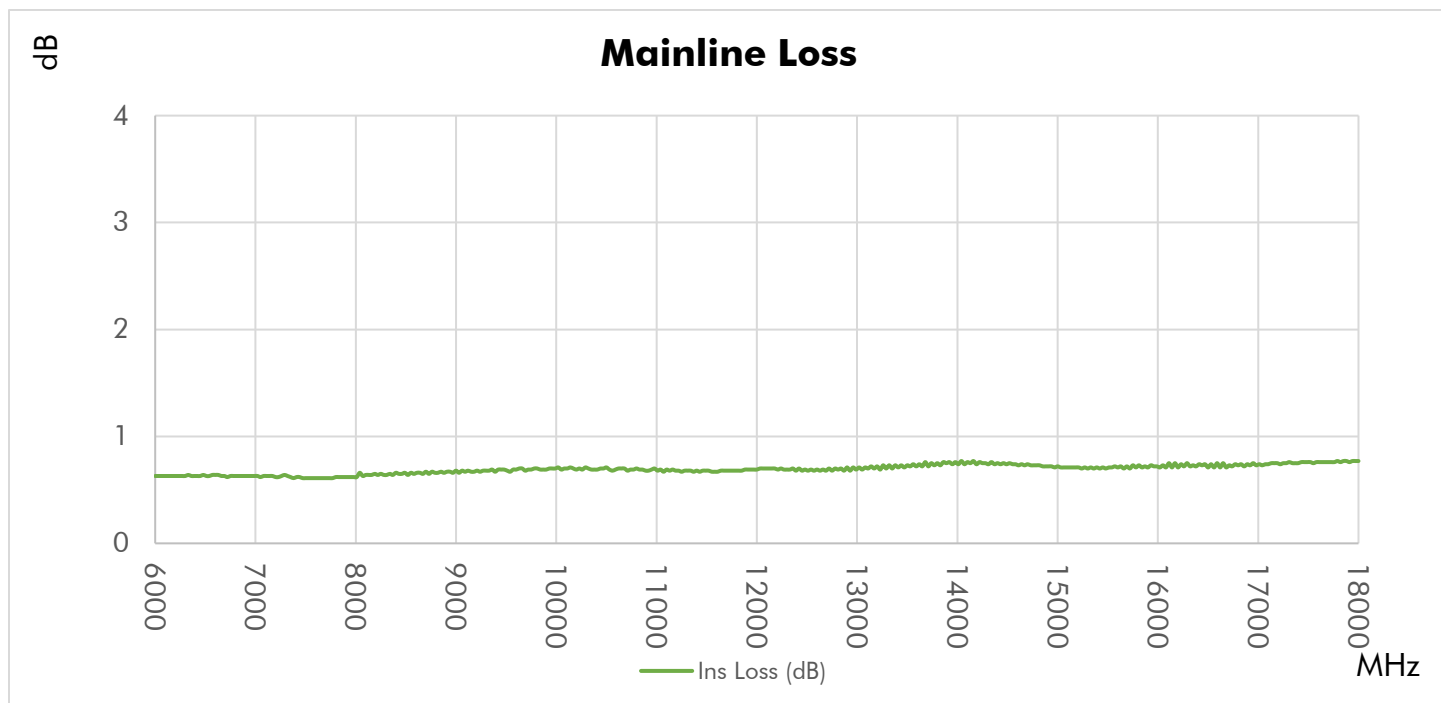
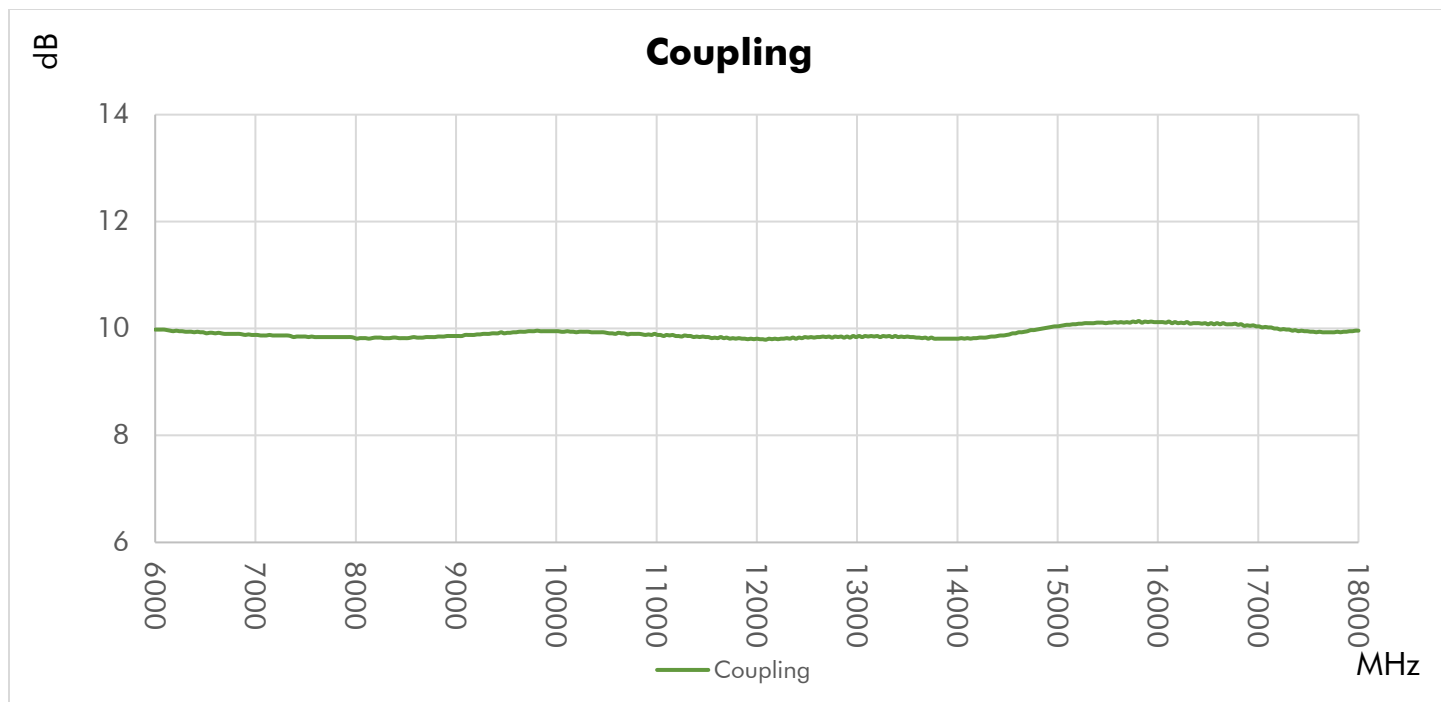
Connector Interface	SMA-Female
Operating Temperature ³	-55 to +85 °C
Storage Temperature	-55 to +100 °C
Weight	0.8 oz (22.7 g)
Humidity	10-90% non-condensing
Environment	Indoors Use Only

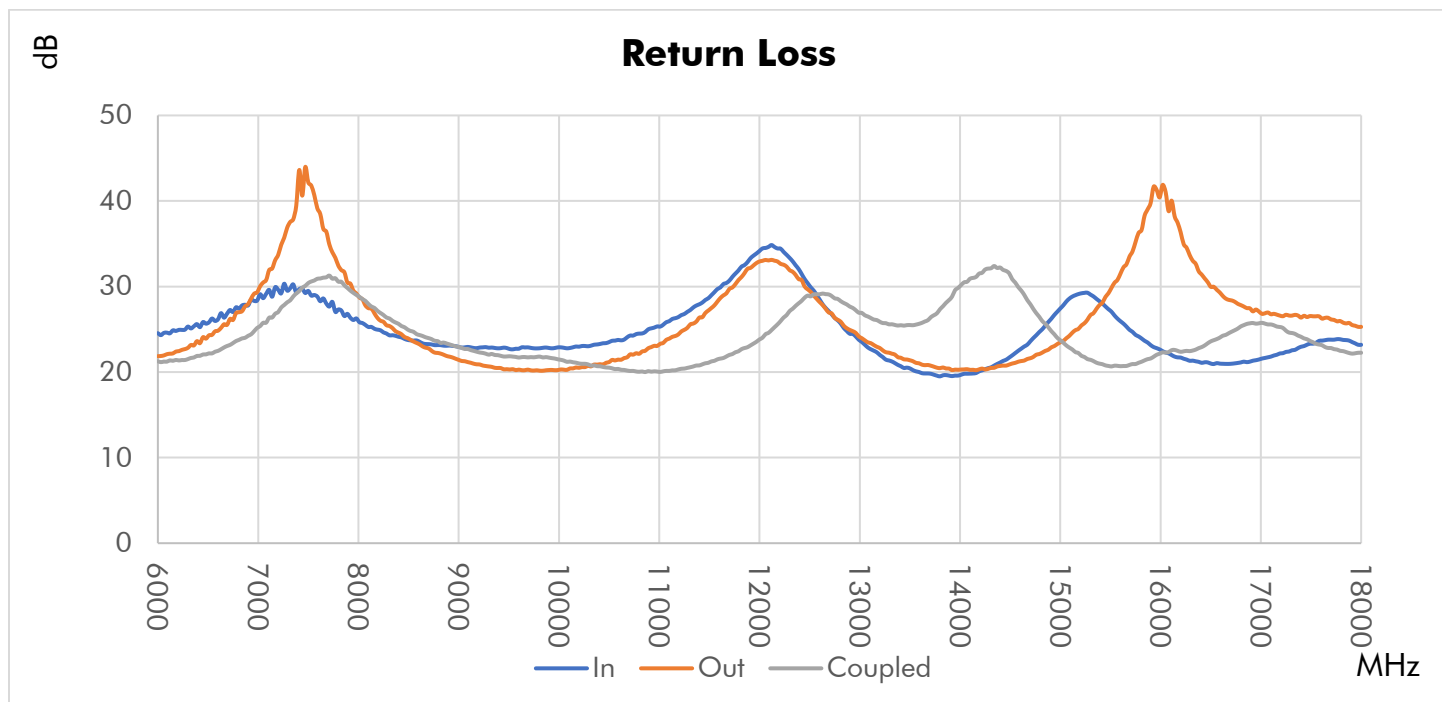
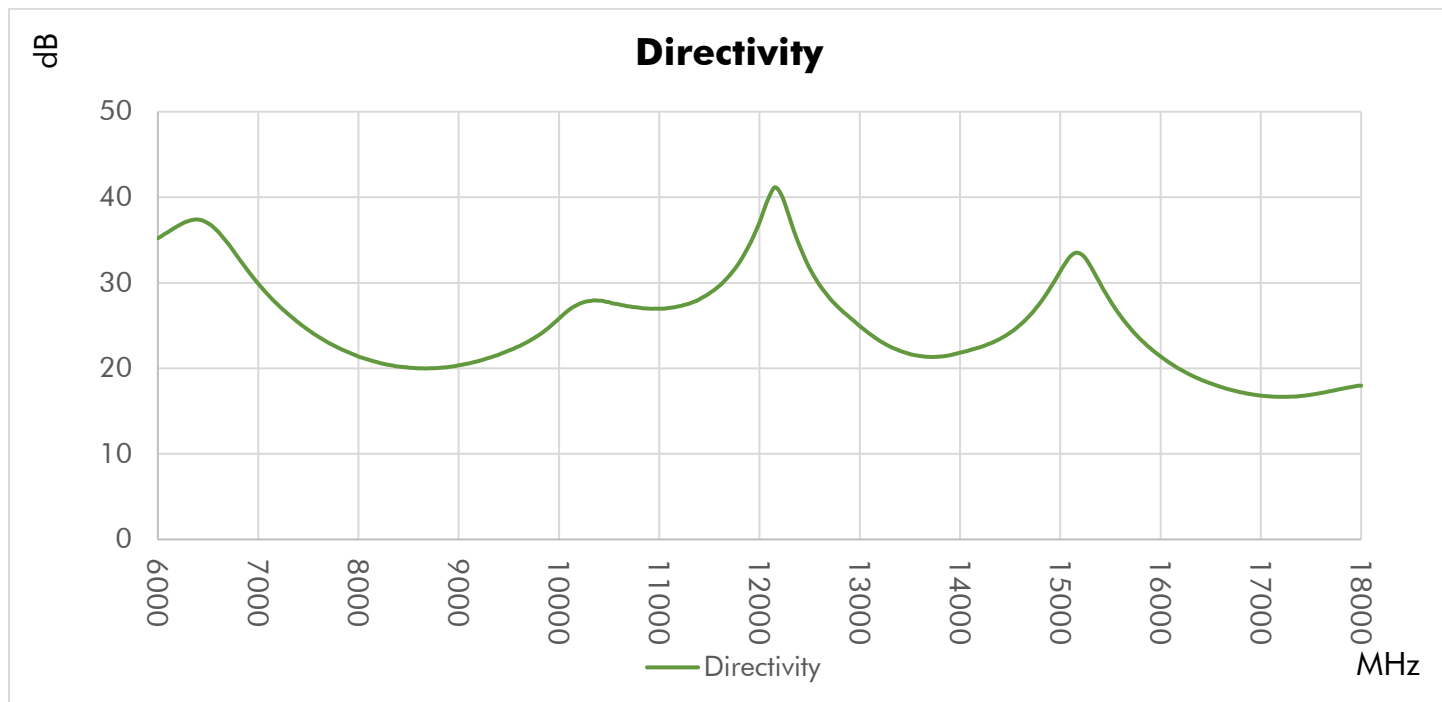
1. Mainline loss includes coupling loss.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications at +25 °C only.
4. To the best of our knowledge at the time of publication

Materials

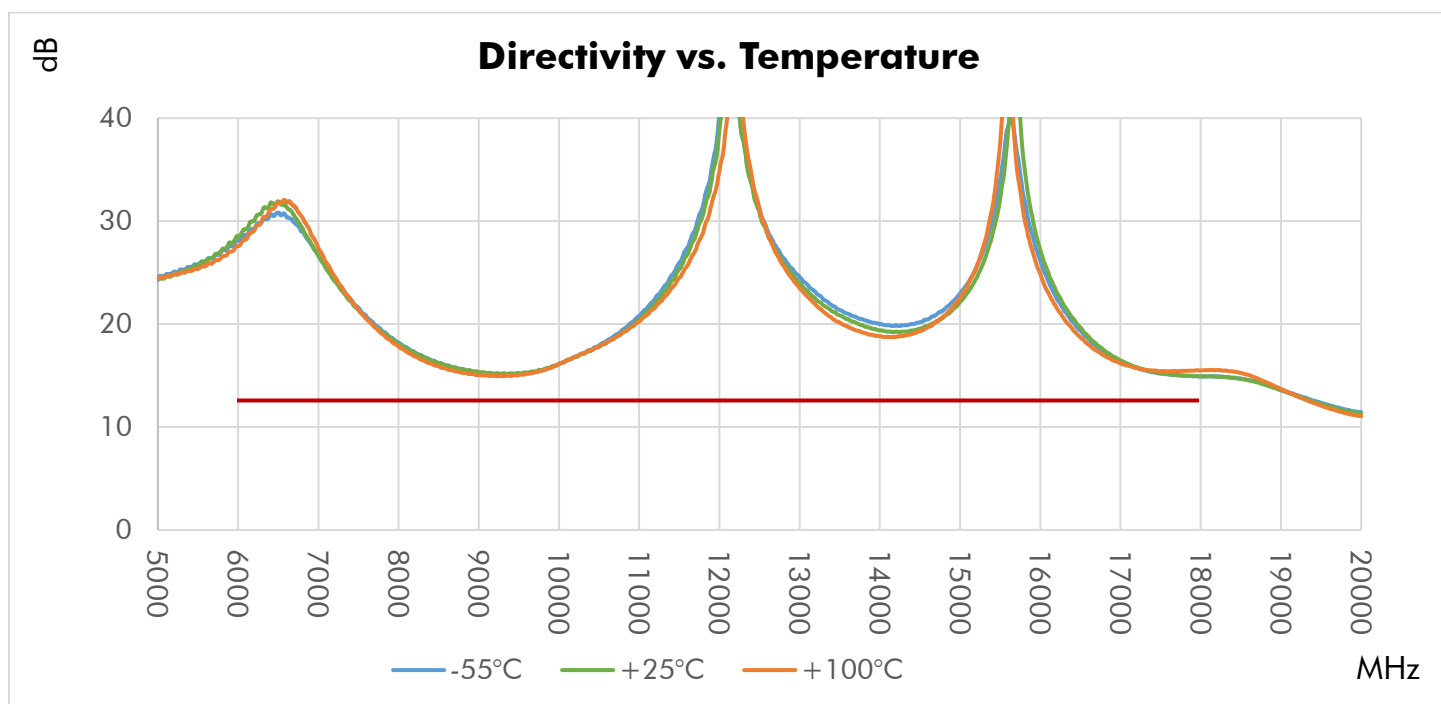
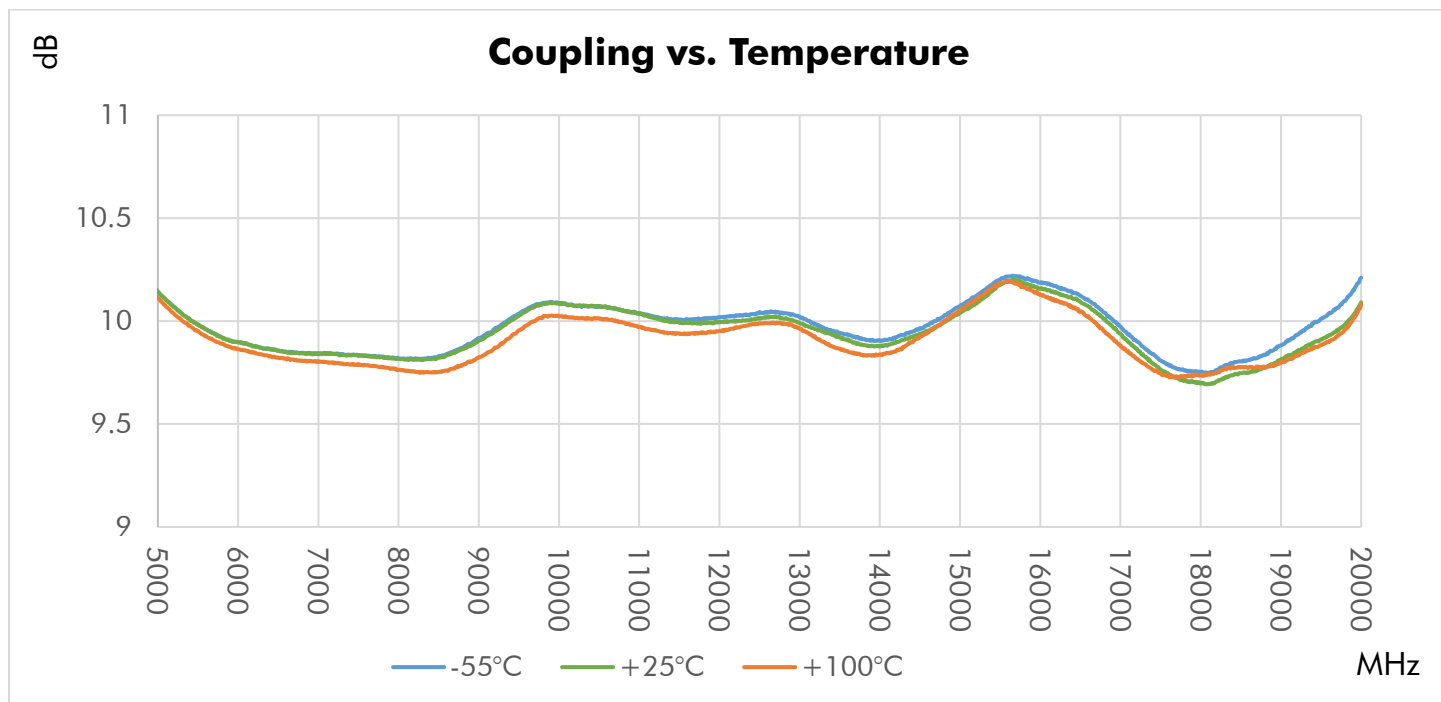
RoHS and REACH Compliant ⁴	
Enclosure	Aluminum
Connectors	Stainless Steel
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Green Paint

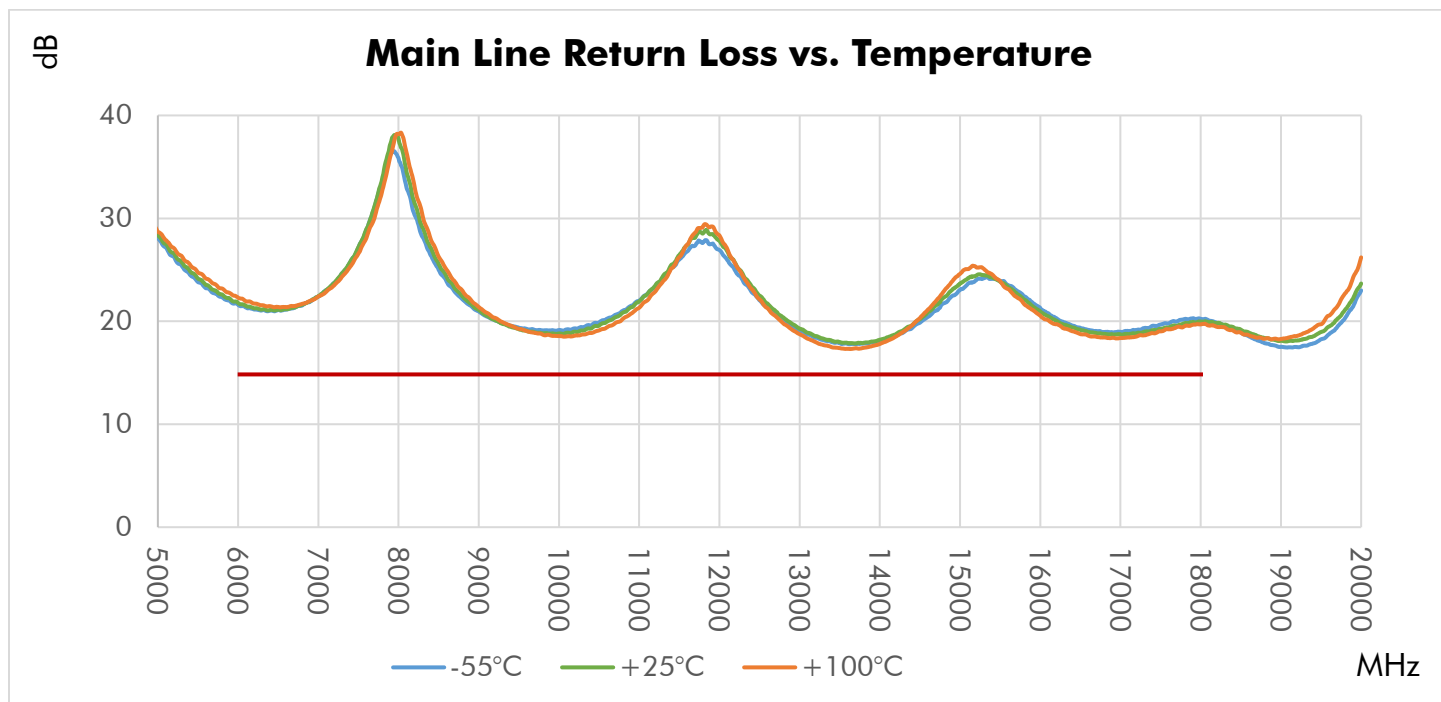
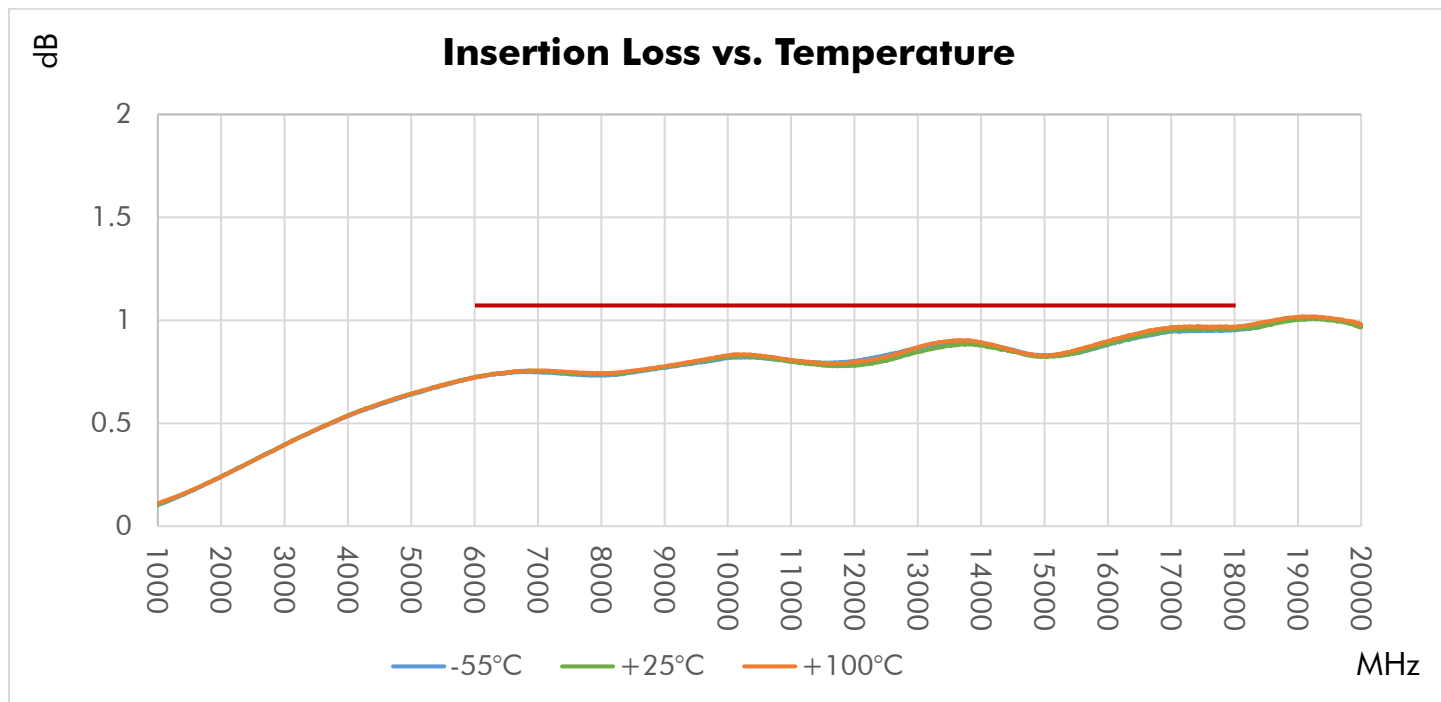
Typical Performance at +25 °C



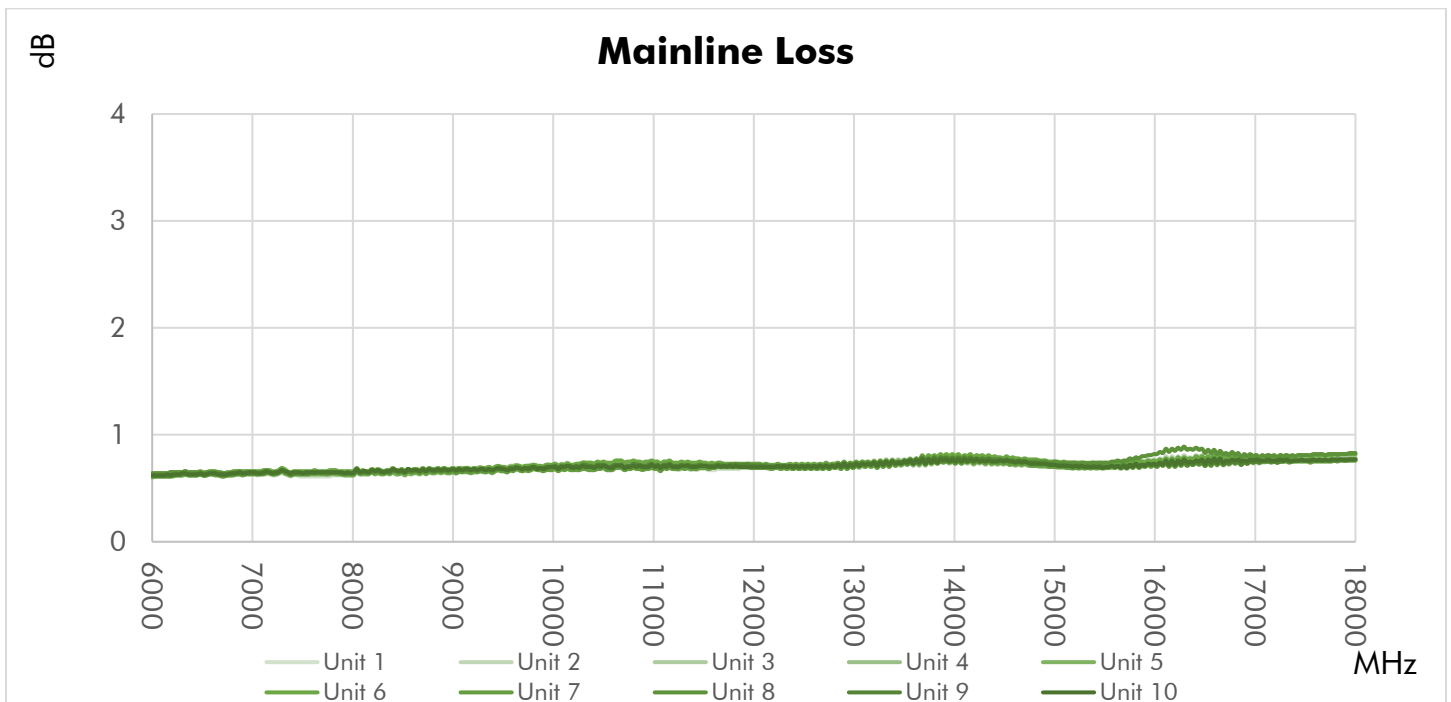
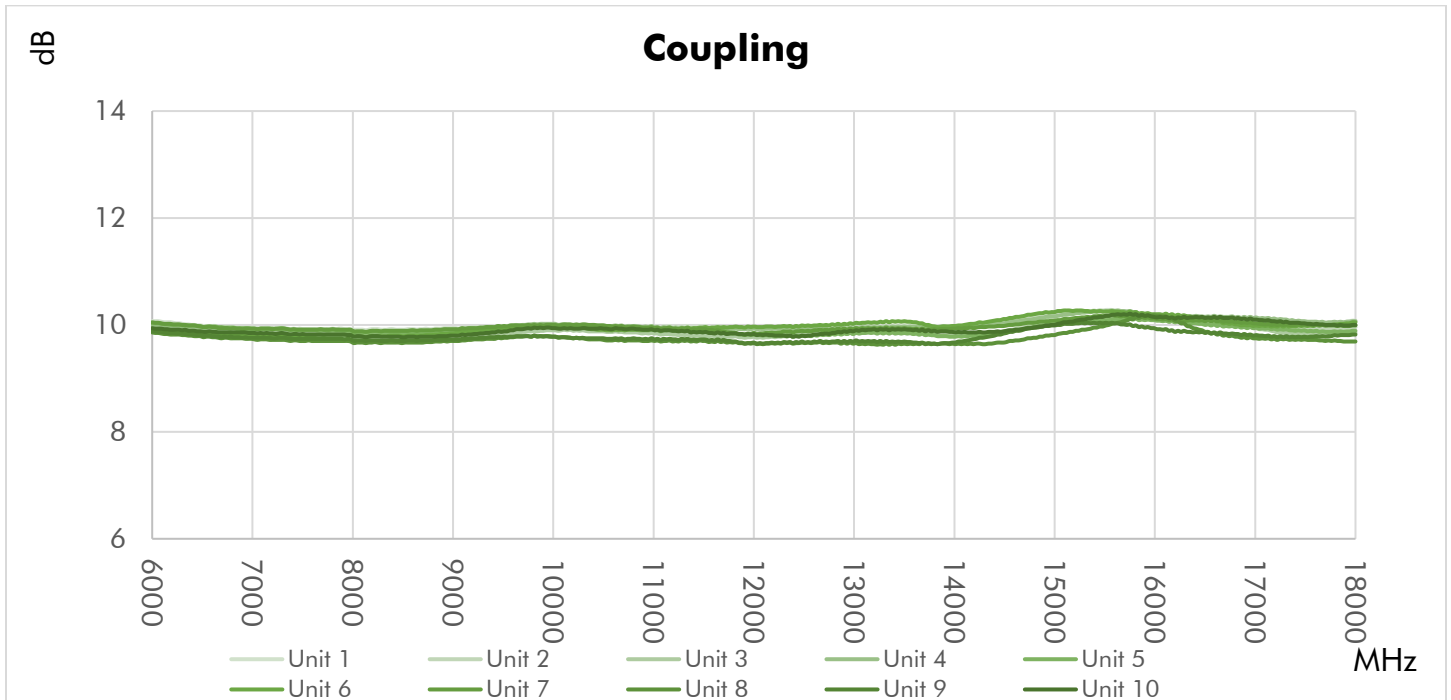


Typical Performance Over Temperature





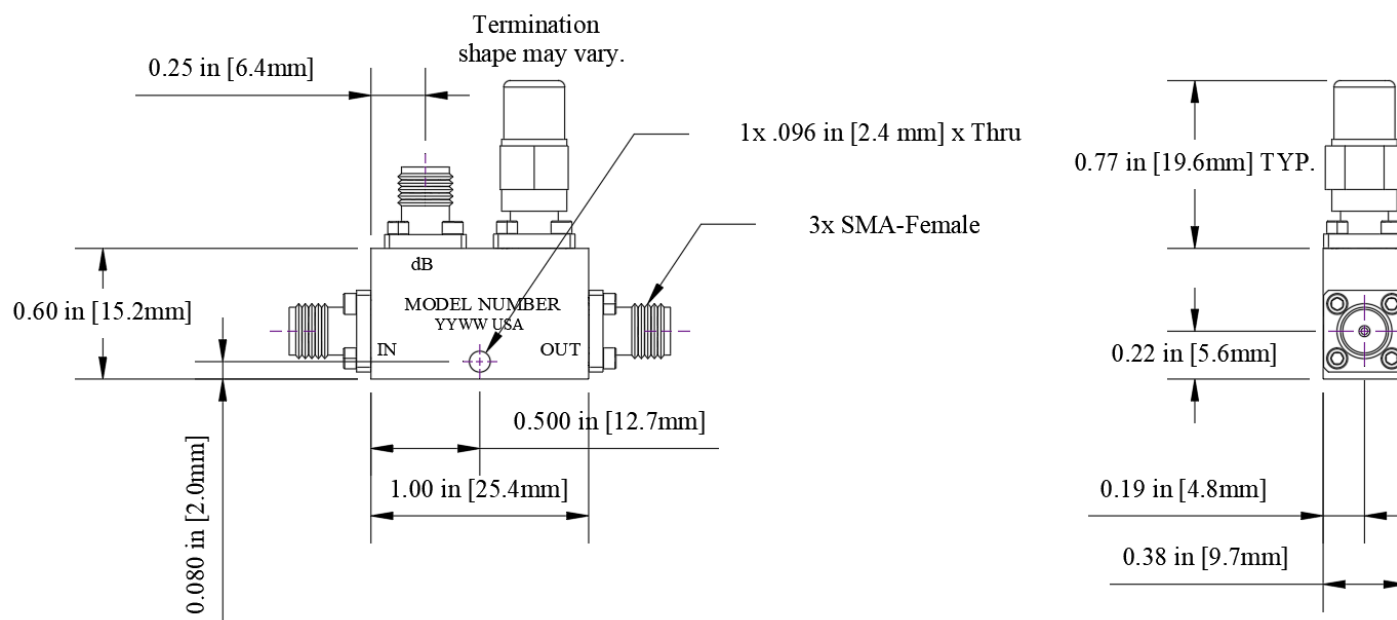
Repeatability in Production



Typical Performance Data

Frequency (MHz)	Return Loss (dB)			Mainline Loss (dB)	Coupling (dB)	Directivity (dB)
	In	Out	Cpl.	In-Out	In-Cpl.	
5000	26.3	24.1	17.9	0.6	10.3	19.2
5500	25.0	22.8	17.3	0.7	10.1	21.0
6000	24.6	23.4	18.6	0.7	9.9	24.4
6500	25.9	25.2	21.8	0.7	9.8	27.2
7000	31.7	28.6	25.3	0.7	9.8	24.9
7500	42.7	34.4	28.0	0.7	9.8	22.2
8000	32.1	37.7	30.7	0.7	9.8	20.2
8500	26.4	30.2	28.1	0.7	9.7	18.2
9000	24.0	26.5	23.5	0.8	9.7	16.1
9500	23.3	24.7	21.4	0.7	9.7	14.6
10000	23.7	24.4	21.0	0.8	9.7	14.0
10500	25.3	24.8	21.6	0.8	9.7	14.2
11000	27.3	26.6	23.6	0.8	9.8	15.8
11500	30.7	29.3	26.7	0.8	9.7	18.2
12000	32.5	32.7	28.4	0.8	9.7	20.6
12500	27.7	34.8	27.7	0.8	9.7	22.0
13000	23.9	29.4	27.0	0.8	9.7	21.0
13500	21.8	26.3	28.5	0.8	9.8	18.9
14000	20.5	24.6	31.7	0.8	9.8	16.4
14500	20.9	24.6	28.0	0.8	9.7	14.6
15000	22.9	26.0	21.4	0.8	9.7	14.2
15500	28.1	29.5	18.5	0.8	9.9	16.9
16000	32.5	33.4	17.8	0.8	10.1	25.4
16500	26.4	28.8	19.3	0.8	9.9	14.4
17000	21.8	27.2	21.4	0.8	9.8	13.9
17500	19.3	25.0	19.6	0.9	9.7	13.9
18000	18.4	22.0	18.6	0.9	9.8	14.4
18500	17.9	19.2	21.9	0.9	10.0	16.4
19000	17.4	17.7	31.0	0.9	10.1	19.8
19500	17.8	17.5	19.8	0.9	10.1	16.5
20000	21.7	19.7	16.5	0.9	10.1	12.7

Outline Dimensions



Outline # OL-1006

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

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

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