

Directional Coupler, 2-18GHz, 20dB, SMA Female

WMC-2-18-20dB-S

Description

Model WMC-2-18-20dB-S from Werbel Microwave is a directional coupler that covers 2 GHz to 18 GHz with broadband flat coupling response, typically ± 0.45 dB, high directivity, and excellent return loss performance. Return loss is 18dB typ. Directivity 17dB typical. Higher directivity is available on special order. Coupling flatness ± 0.45 dB typical. Insertion loss 0.8dB typical. The enclosure is aluminum with threaded mounting holes. Stainless steel SMA female connectors for rugged, reliability. RoHS complaint however lead solder is available on special order. Our unique approach as the design of the coupling segment provides excellent ripple performance, thereby providing highly accurate measurements across the bands. Such bands include S band, C band, X band and Ku band. Assembled and tested in the USA.



Photo is representative.

Specifications	Min.	Typ.	Max.	Units
Frequency	2	--	18	GHz
Impedance	--	50	--	Ohm
Coupling	--	20 ± 1.0	--	dB
Frequency Sensitivity (Flatness)	--	± 0.45	± 1.0	dB
Mainline Loss ¹	--	0.8	1.3	dB
Directivity	15	17	--	dB
Return Loss (In and Out)	14	18	--	dB
Return Loss (Coupling)	14	18	--	dB
Isolation	--	37	--	dB
Input Power (CW) ²	--	--	20	Watts

Mechanical

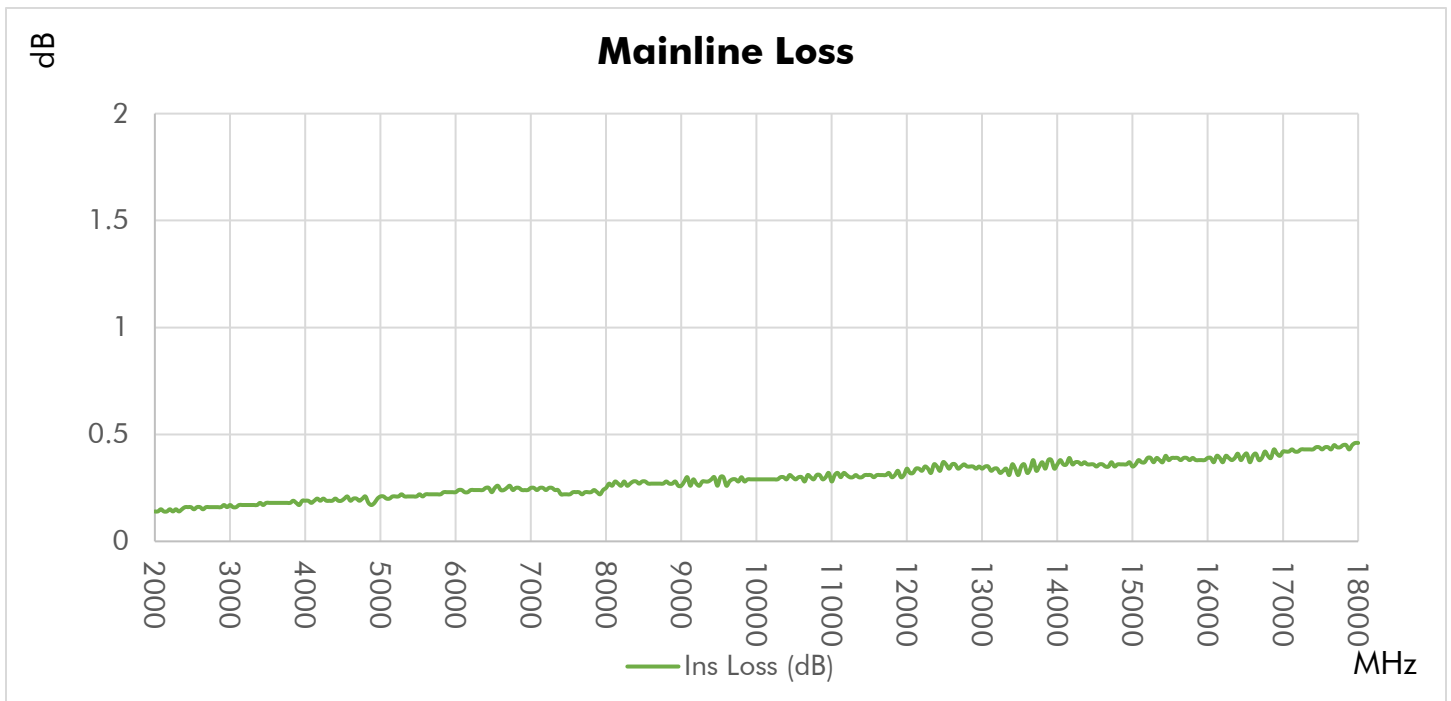
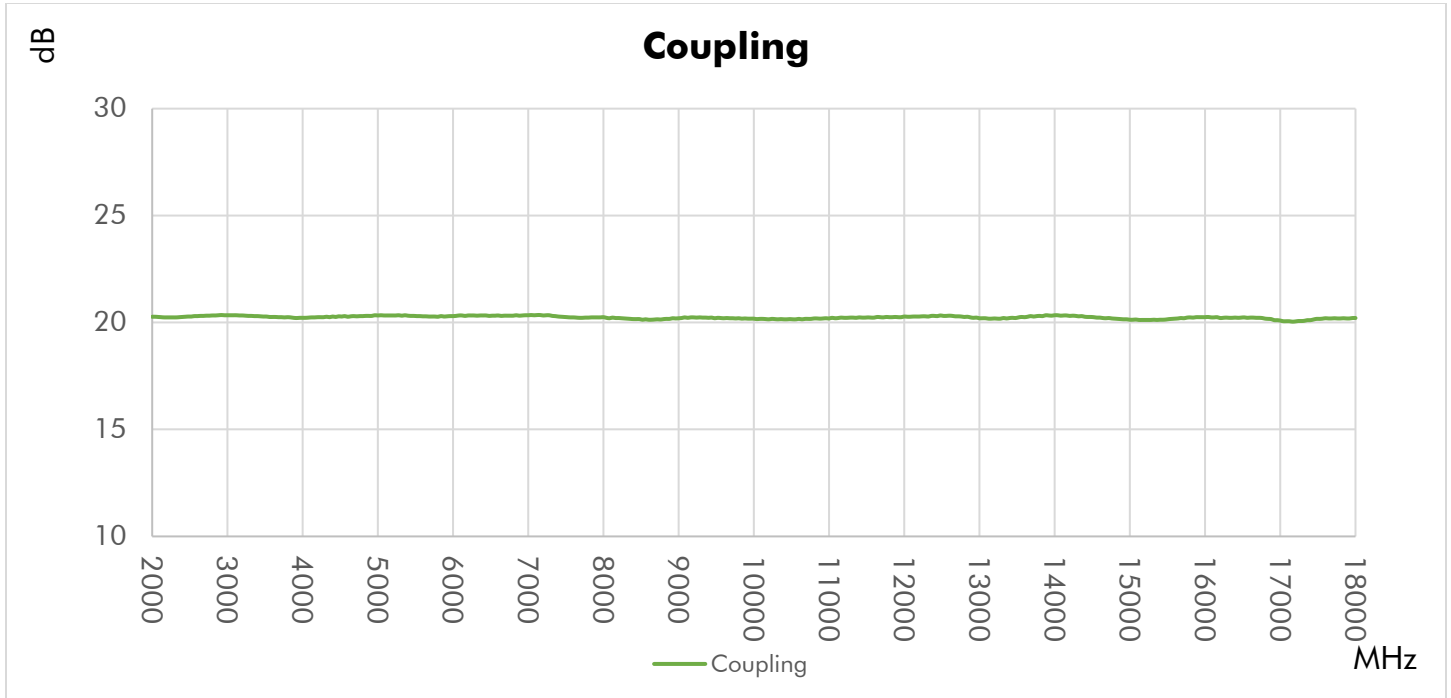
Connector Interface	SMA-Female
Operating Temperature ³	-55 to +85 °C
Storage Temperature	-55 to +100 °C
Weight	1.4 oz (40 g)
Humidity	10-90% non-condensing
Environment	Indoor Use Only

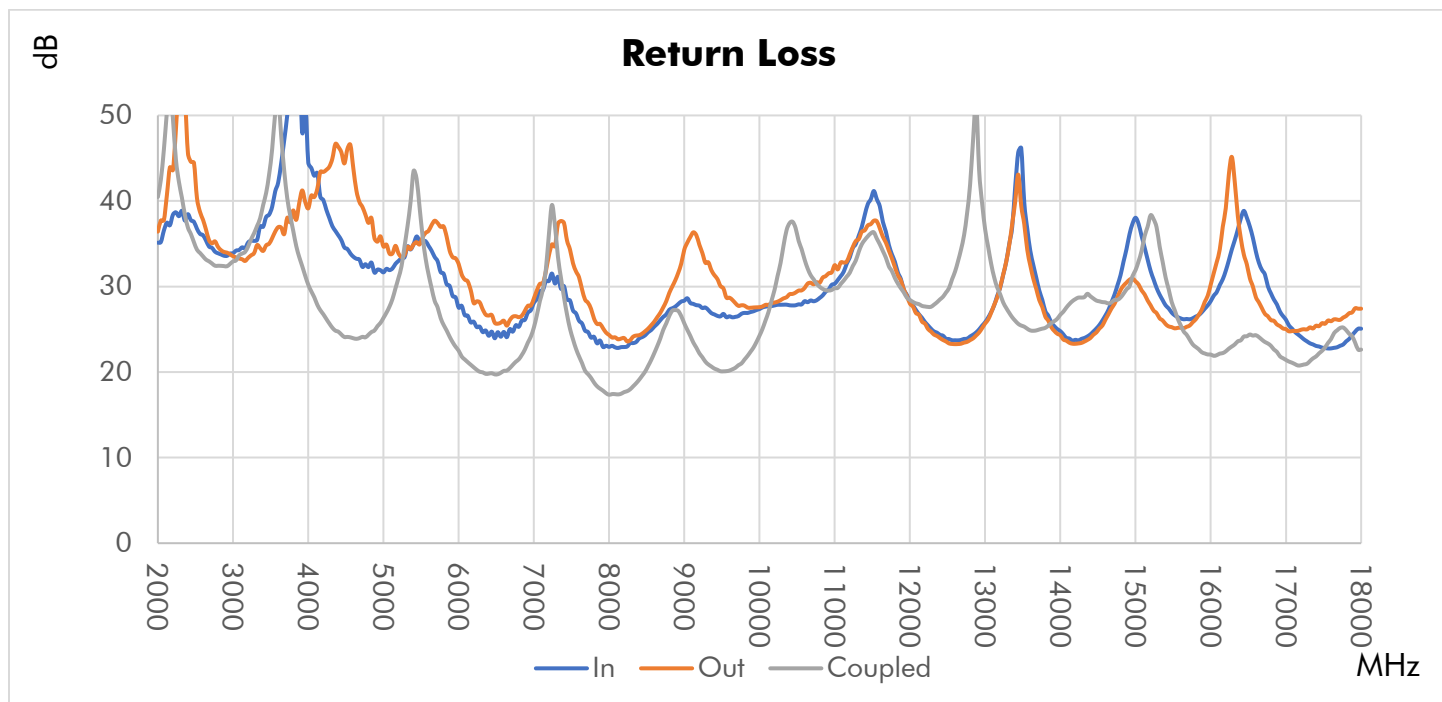
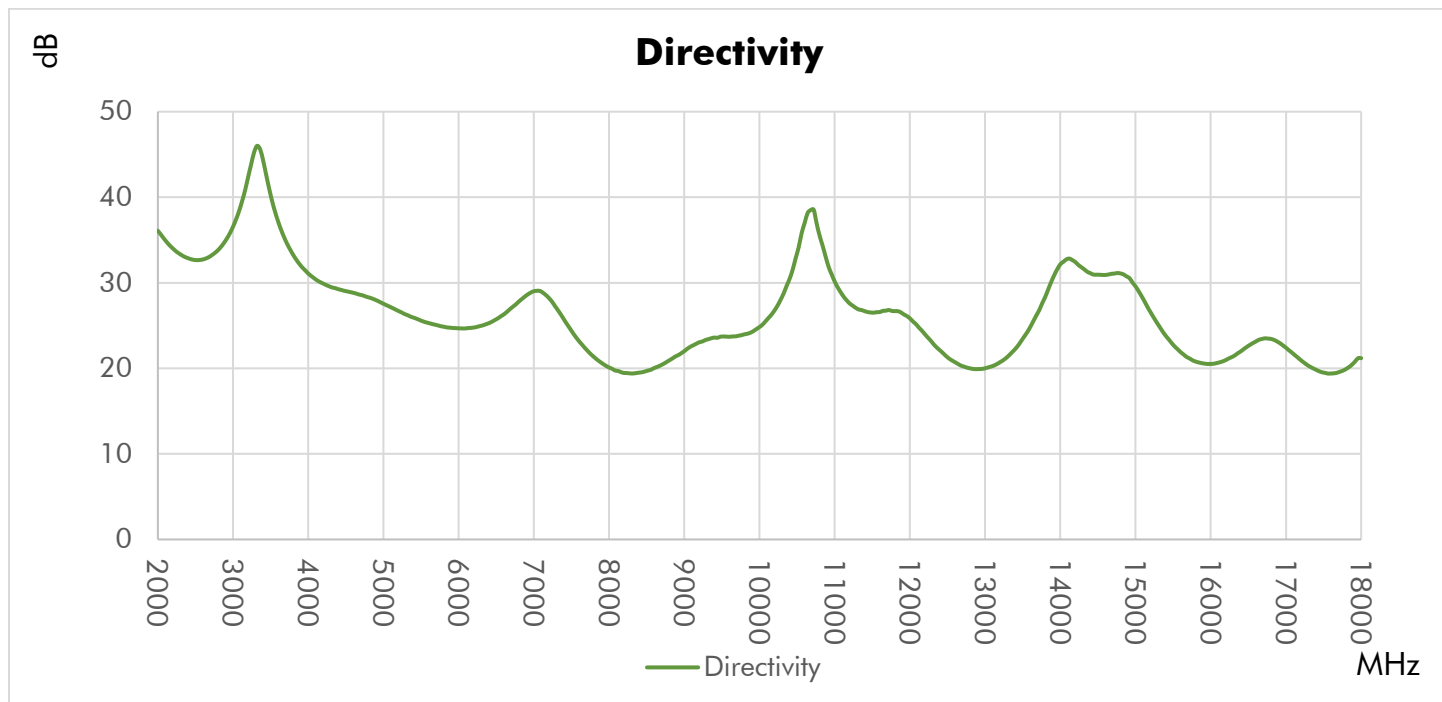
1. Mainline loss includes coupling loss.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications at +25 °C.
4. To the best of our knowledge at the time of publication.

Materials

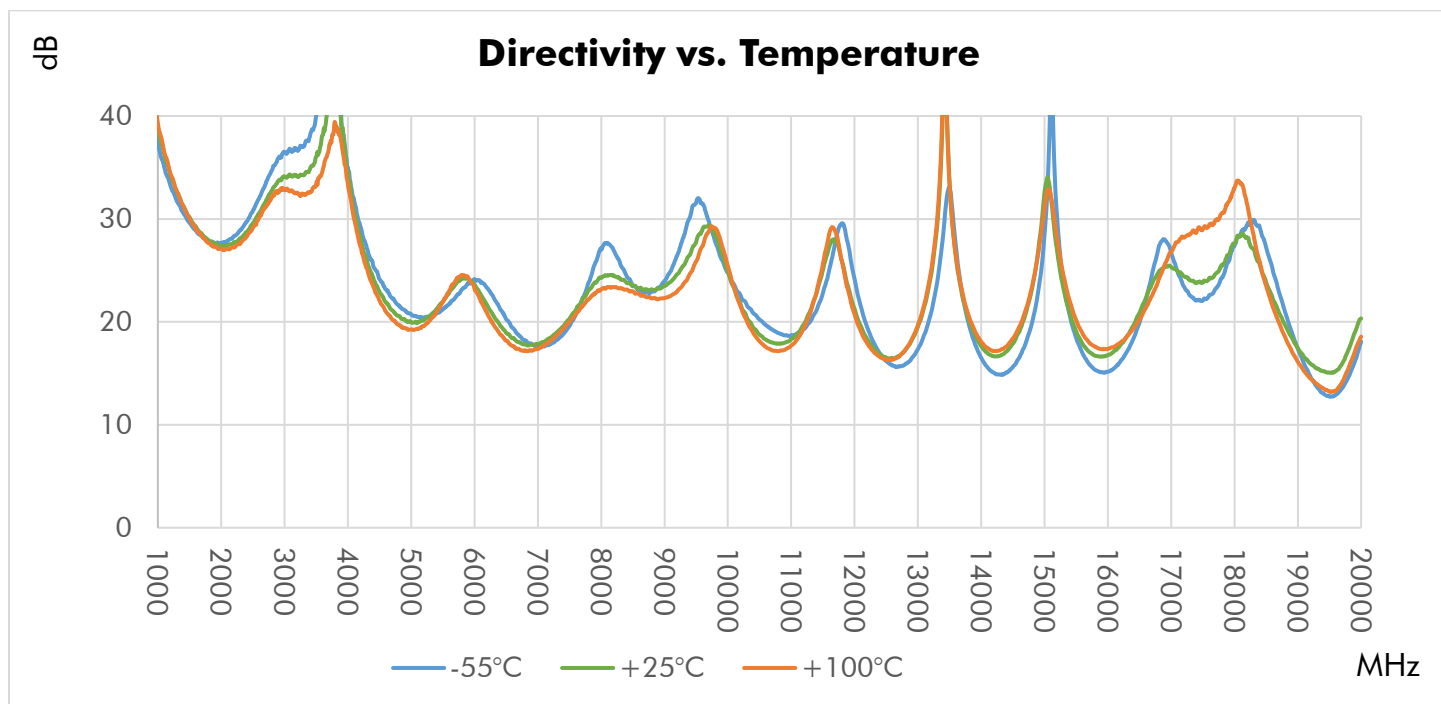
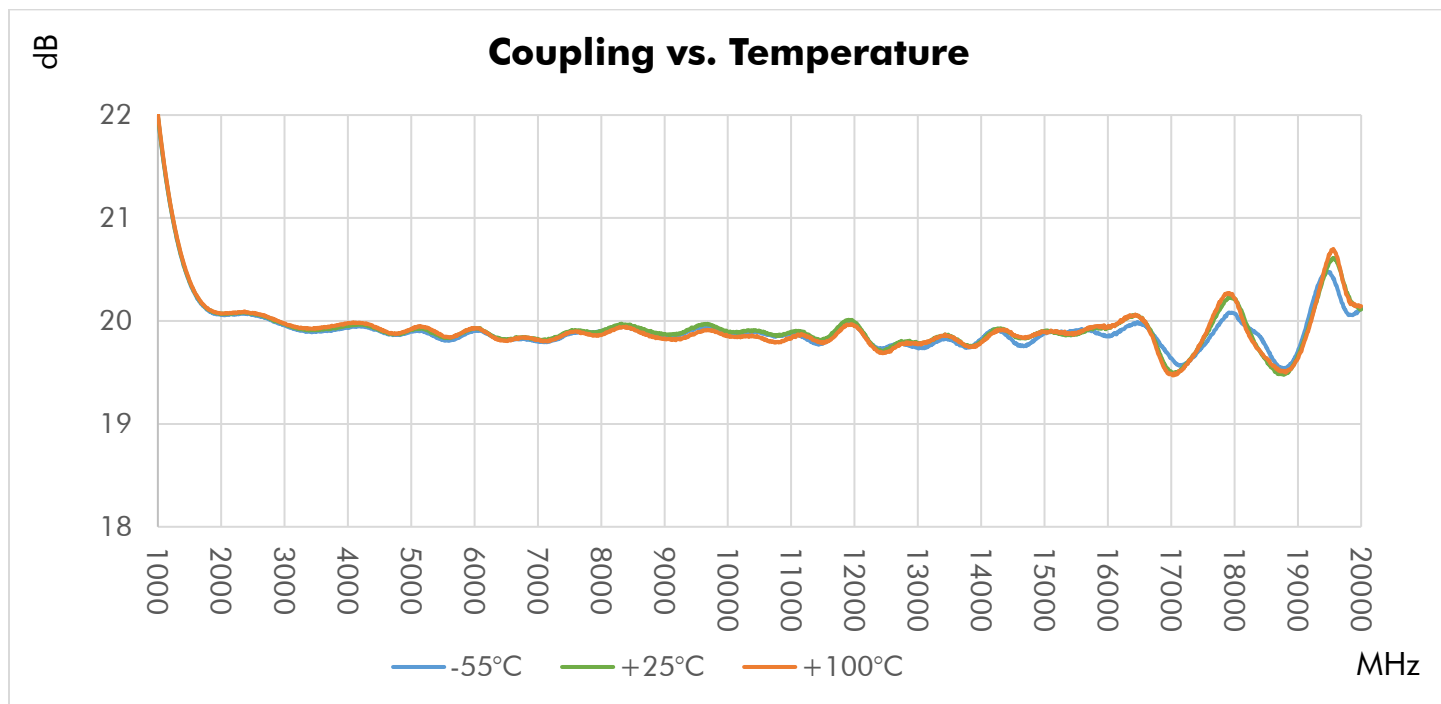
RoHS and REACH Compliant ⁴	
Enclosure	Aluminum
Connectors	Stainless Steel
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Green Paint

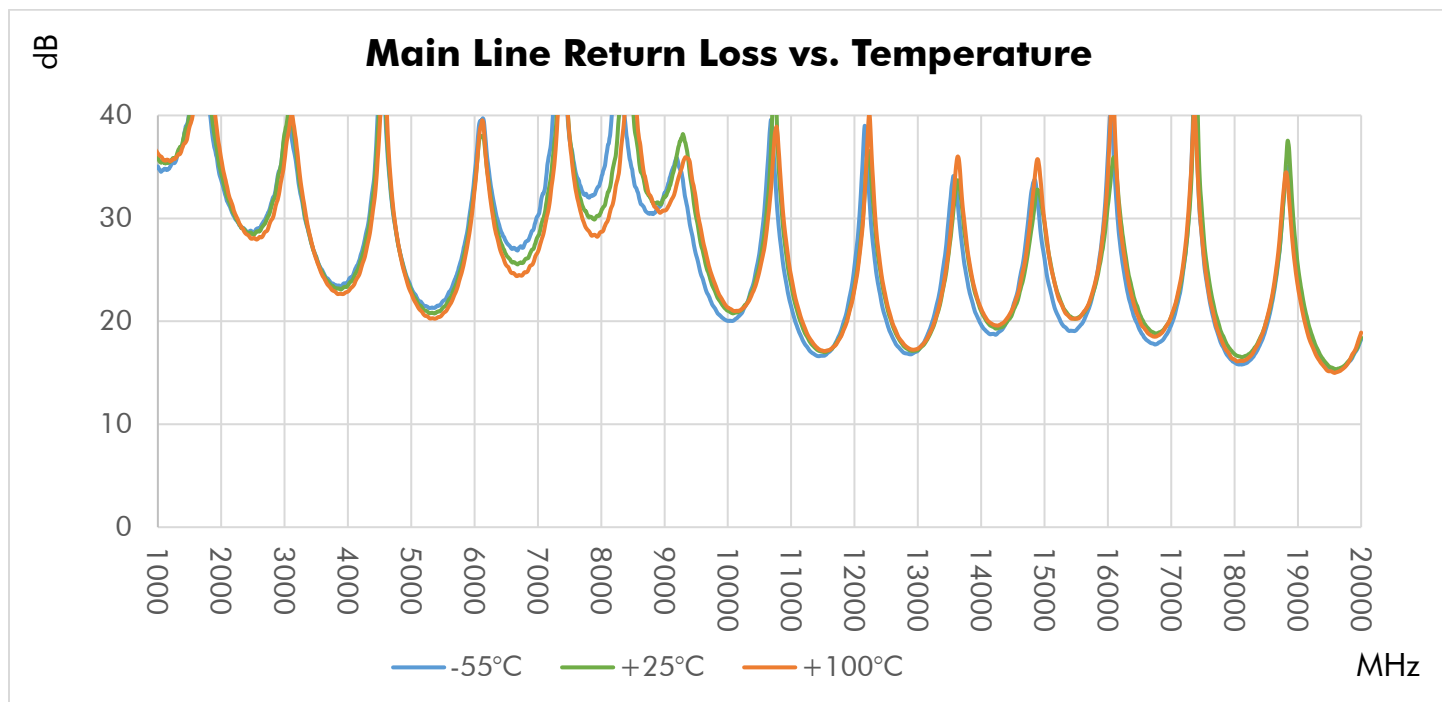
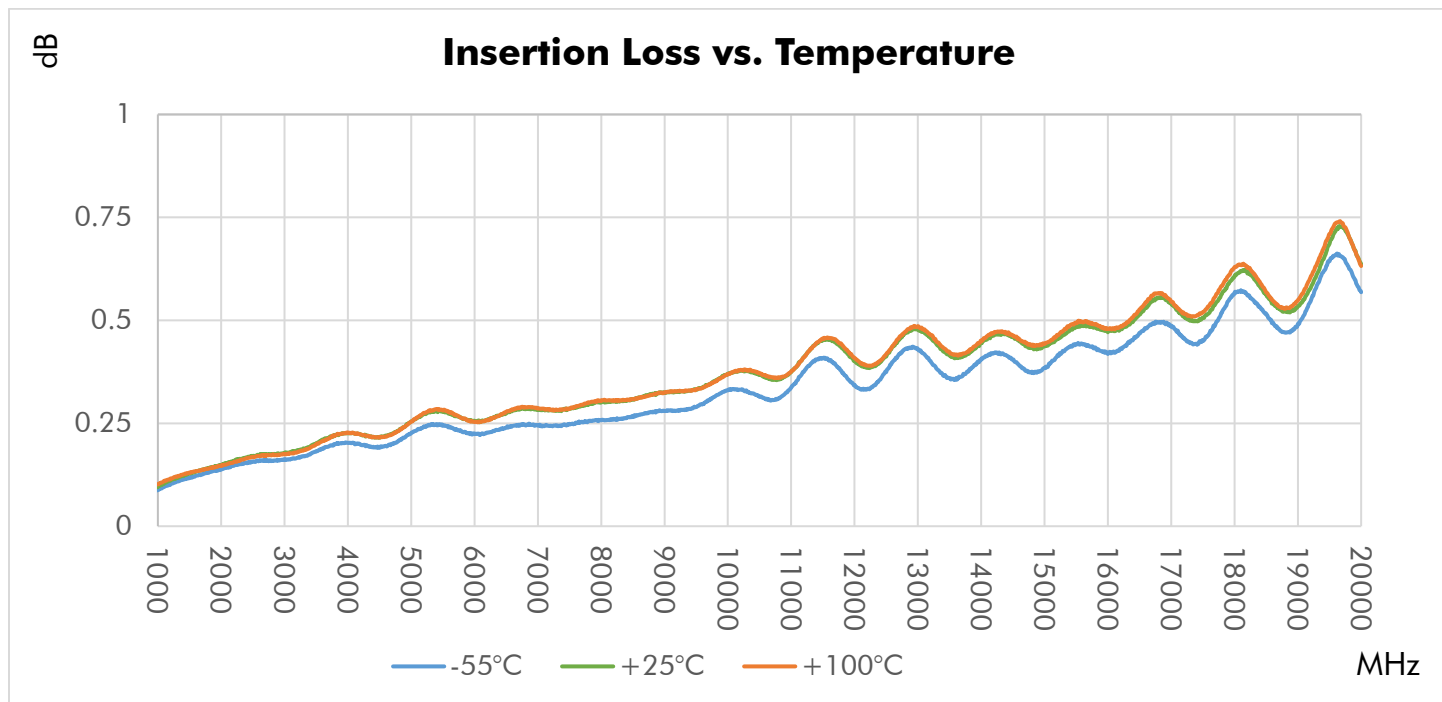
Typical Performance at +25 °C



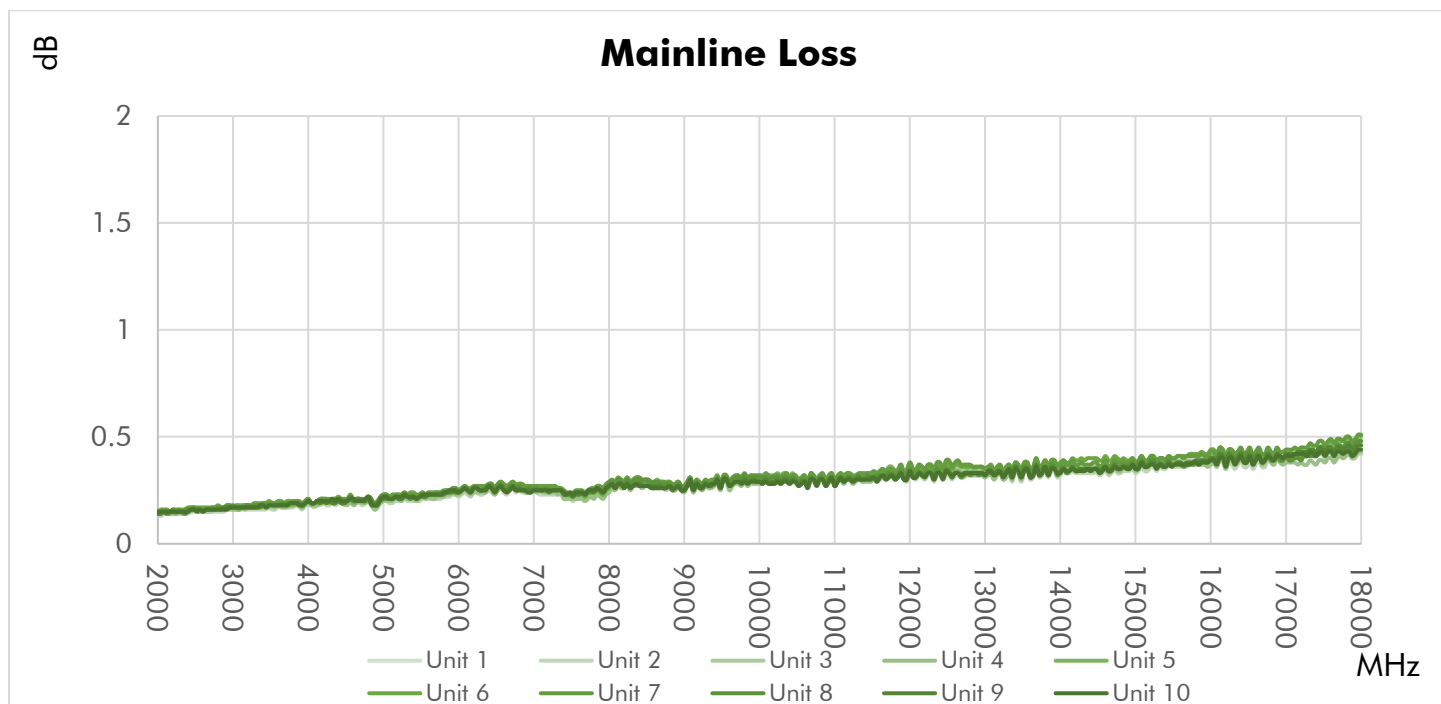
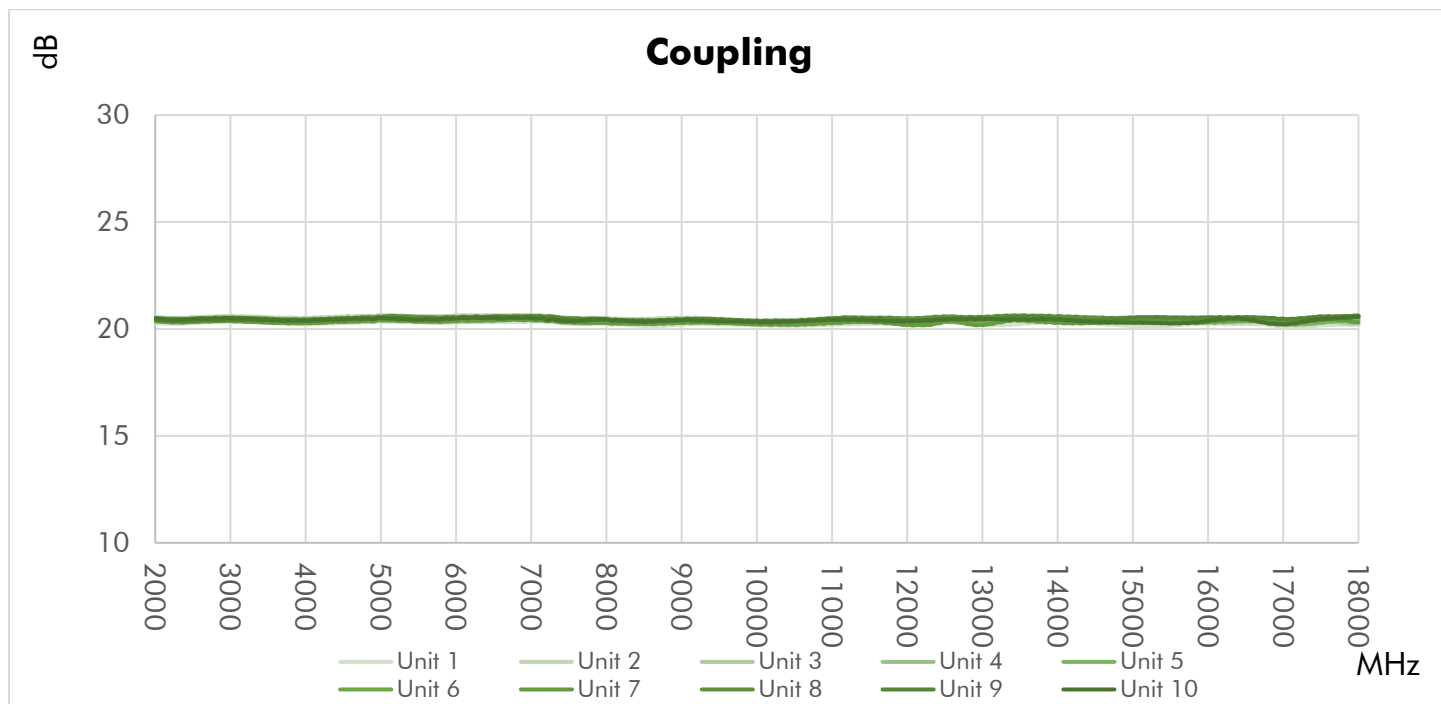


Typical Performance Over Temperature





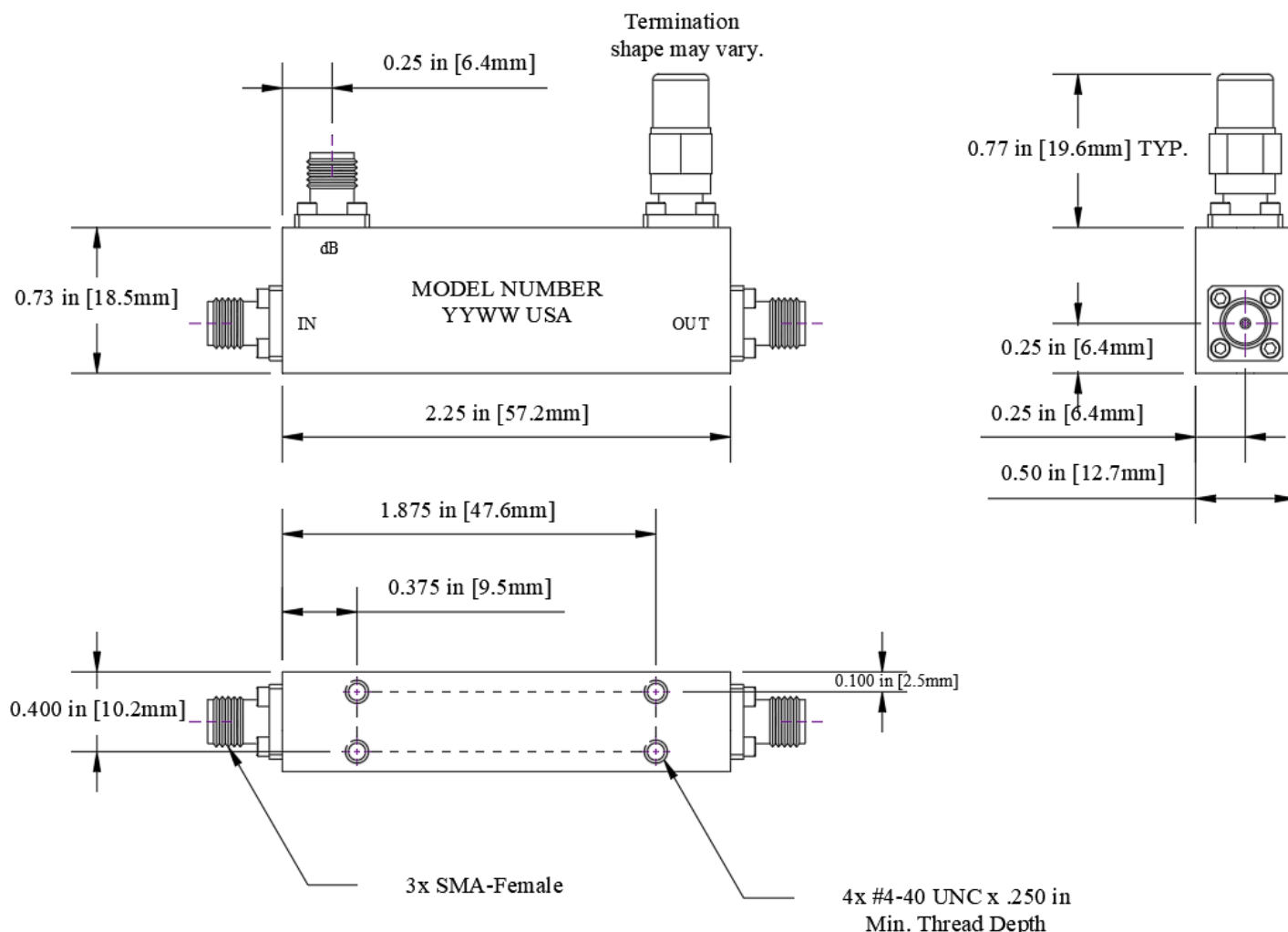
Repeatability in Production



Typical Performance Data

Frequency (MHz)	Return Loss (dB)			Mainline Loss (dB)	Coupling (dB)	Directivity (dB)
	In	Out	Cpl.	In-Out	In-Cpl.	
1000	44.8	42.2	33.4	0.1	22.5	34.6
1500	34.2	33.8	33.7	0.1	20.4	34.4
2000	29.3	29.3	28.8	0.2	19.8	37.5
2500	33.2	33.5	31.3	0.2	19.7	33.5
3000	54.3	45.8	40.1	0.2	19.8	28.9
3500	34.8	36.9	29.4	0.2	19.7	30.2
4000	29.6	32.0	29.9	0.2	19.6	49.3
4500	31.4	30.6	37.4	0.2	19.7	29.7
5000	34.0	33.8	36.3	0.2	19.7	25.9
5500	31.8	39.5	33.7	0.3	19.8	24.2
6000	25.7	25.9	28.3	0.1	19.6	21.8
6500	24.4	24.3	24.2	0.4	19.9	22.7
7000	33.4	40.9	30.4	0.2	19.7	34.9
7500	27.1	27.1	23.6	0.3	19.7	25.1
8000	24.9	24.7	21.3	0.4	19.8	20.6
8500	29.5	27.7	25.3	0.2	19.7	21.8
9000	51.8	35.2	22.3	0.3	19.9	24.1
9500	32.2	31.9	22.9	0.2	19.5	22.7
10000	34.6	24.3	29.6	0.4	19.4	22.4
10500	32.4	25.3	24.9	0.4	19.5	25.0
11000	24.5	24.8	22.4	0.3	19.8	35.3
11500	27.8	22.0	23.2	0.3	19.8	25.0
12000	29.9	21.9	21.3	0.3	19.7	20.4
12500	21.2	21.3	21.9	0.2	19.6	21.8
13000	23.1	21.3	21.4	0.4	19.6	23.0
13500	35.1	23.6	18.7	0.4	19.5	17.0
14000	22.5	22.5	24.5	0.4	19.5	15.9
14500	23.4	23.8	22.9	0.4	19.6	19.6
15000	30.5	32.9	21.6	0.4	19.7	31.4
15500	38.4	38.7	26.6	0.4	19.5	36.5
16000	26.1	36.0	25.0	0.4	19.6	24.6
16500	25.0	29.1	27.5	0.5	19.7	23.7
17000	25.1	22.7	19.6	0.5	19.5	20.0
17500	21.0	26.0	22.3	0.5	19.6	18.2
18000	21.8	28.8	24.0	0.5	19.6	21.1
18500	20.5	19.3	16.0	0.5	19.7	30.4
19000	19.8	22.3	18.4	0.4	19.6	30.5
19500	20.9	22.6	20.8	0.6	19.6	24.8
20000	17.0	16.7	16.8	0.6	19.8	20.7

Outline Dimensions



Outline # OL-1182

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

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

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