

Directional Coupler, 2-18GHz, 30dB, SMA Female

WMC-2-18-30dB-S

Description

Model WMC-2-18-30dB-S from Werbel Microwave is a directional coupler that covers 2 to 18 GHz with broadband flat 30dB coupling response. Typical coupling flatness is ± 0.55 dB across the band, with typical directivity 17dB. Reflections are minimal with 19dB typ. main line return loss and 17dB typ. coupling return loss. 20 watts input power. Our unique design approach to coupling line results in a very flat, stable coupling response over the frequency range. The S, C, X and Ku bands are covered in one device with high coupling factor with minimal insertion loss. Designed, assembled and tested in USA.



Photo is representative.

Specifications	Min.	Typ.	Max.	Units
Frequency	2	--	18	GHz
Impedance	--	50	--	Ohm
Coupling	--	30 ± 2.5	--	dB
Frequency Sensitivity (Flatness)	--	± 0.55	± 1.5	dB
Mainline Loss ¹	--	0.6	0.9	dB
Directivity	14	17	--	dB
Return Loss (In and Out)	14	19	--	dB
Return Loss (Coupling)	14	17	--	dB
Isolation	--	47	--	dB
Input Power (CW) ²	--	--	20	Watts

Mechanical

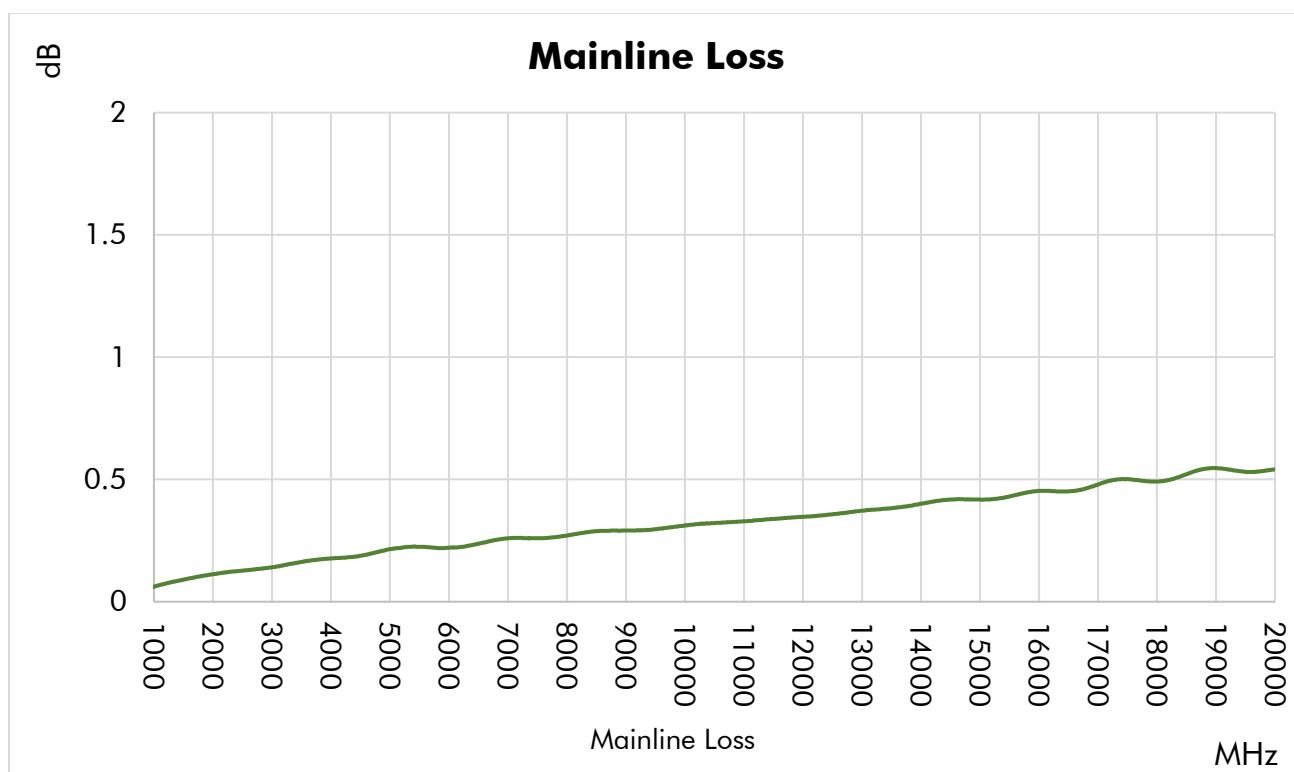
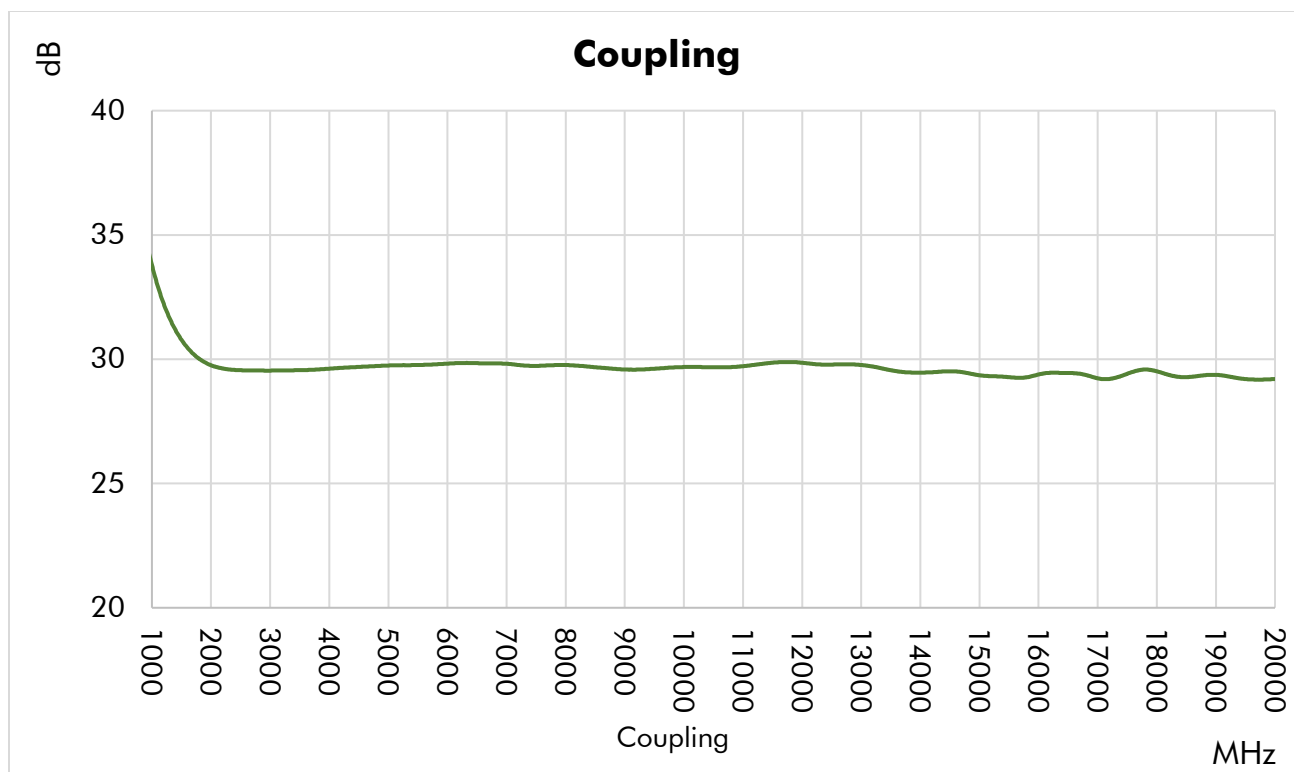
Connector Interface	SMA-Female
Functional Temperature ³	-55 to +85 °C
Storage Temperature	-55 to +100 °C
Weight	1.4 oz (40 g)
Humidity	10-90% non-condensing
Environment	Indoor Use Only

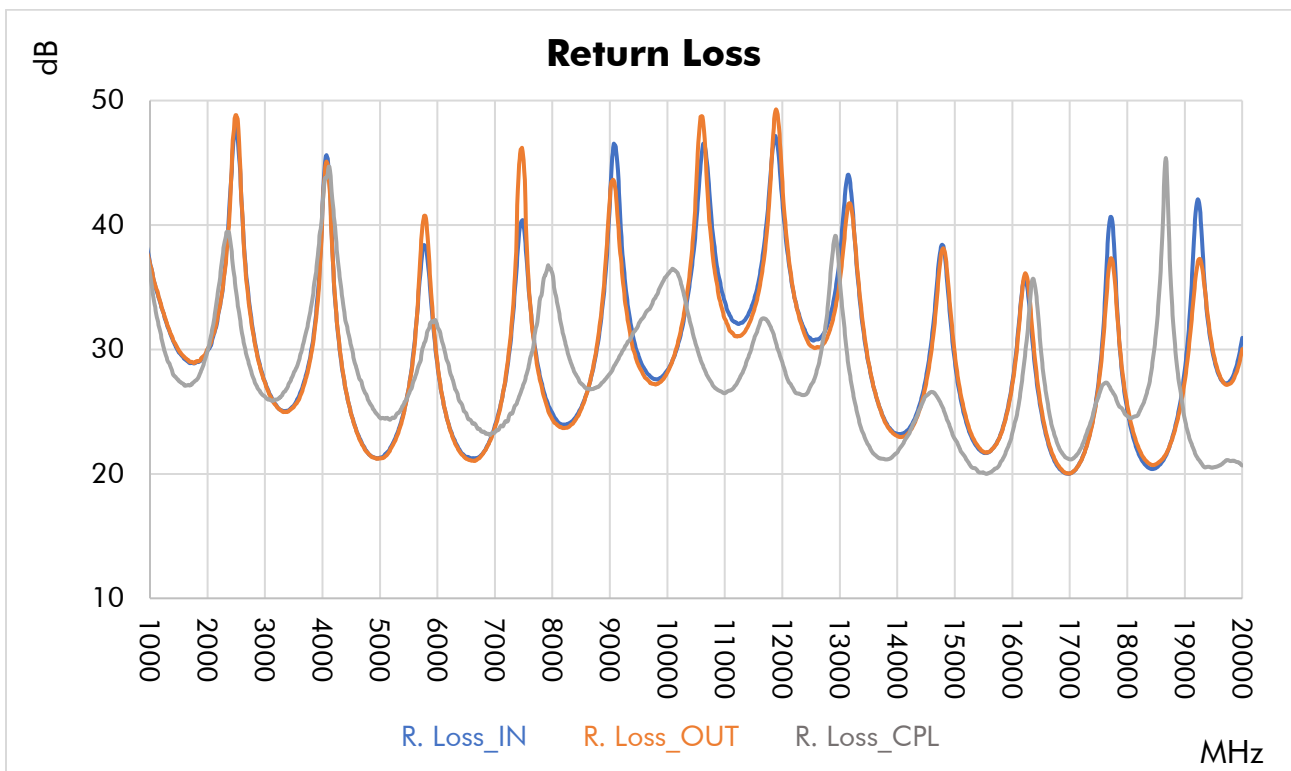
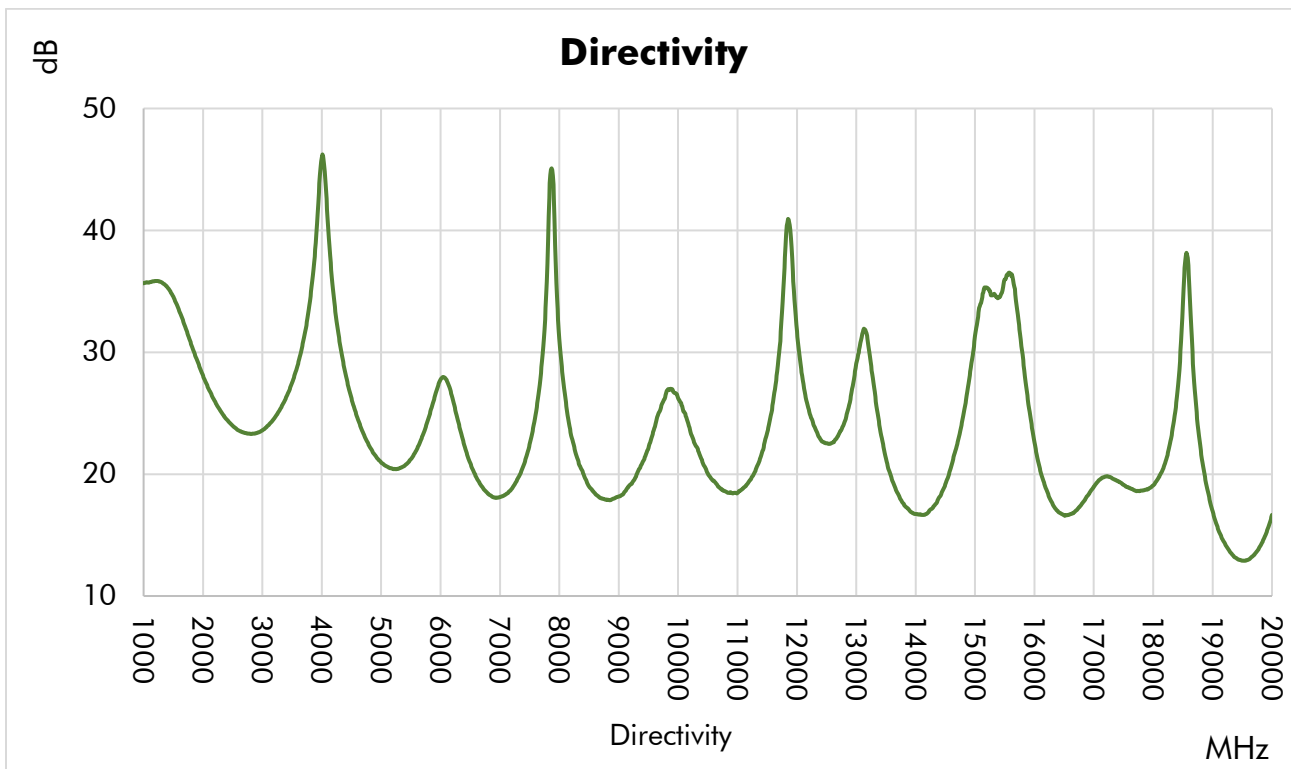
1. Mainline loss includes coupling loss.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications at +25 °C.
4. To the best of our knowledge at the time of publication.

Materials

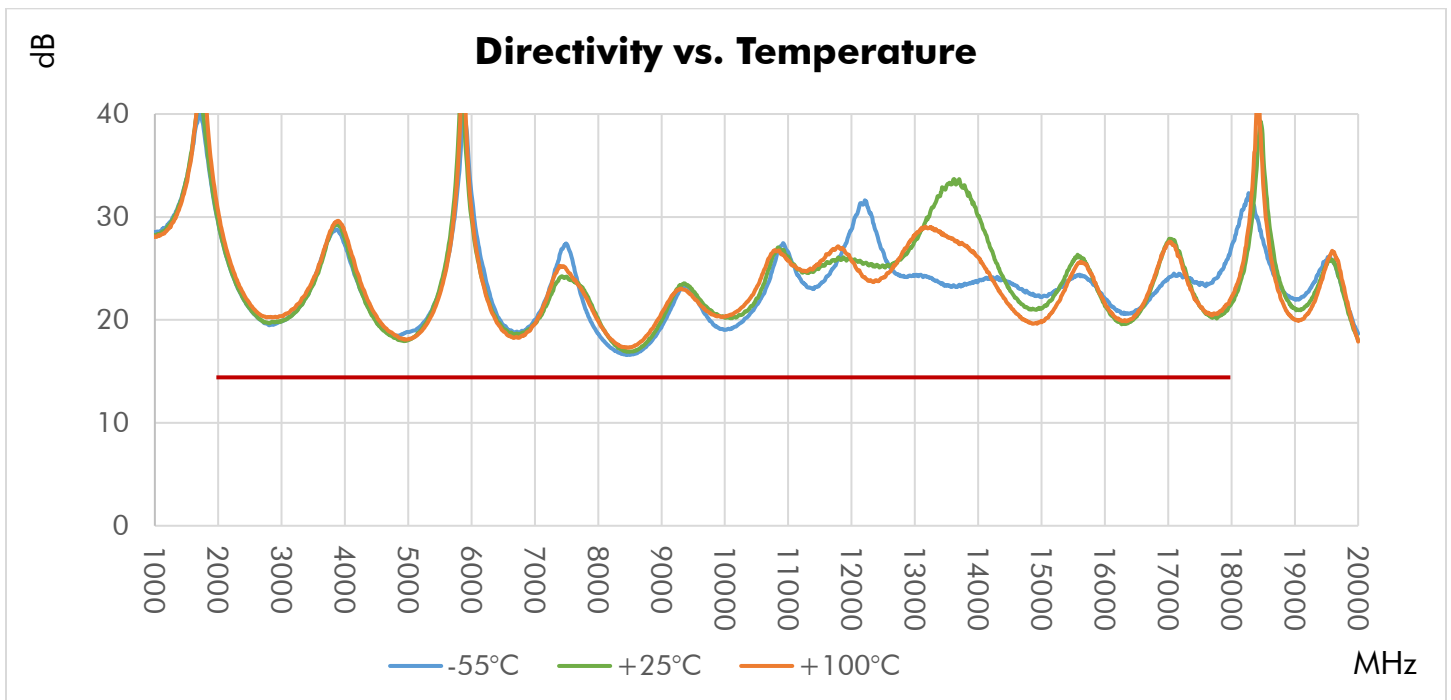
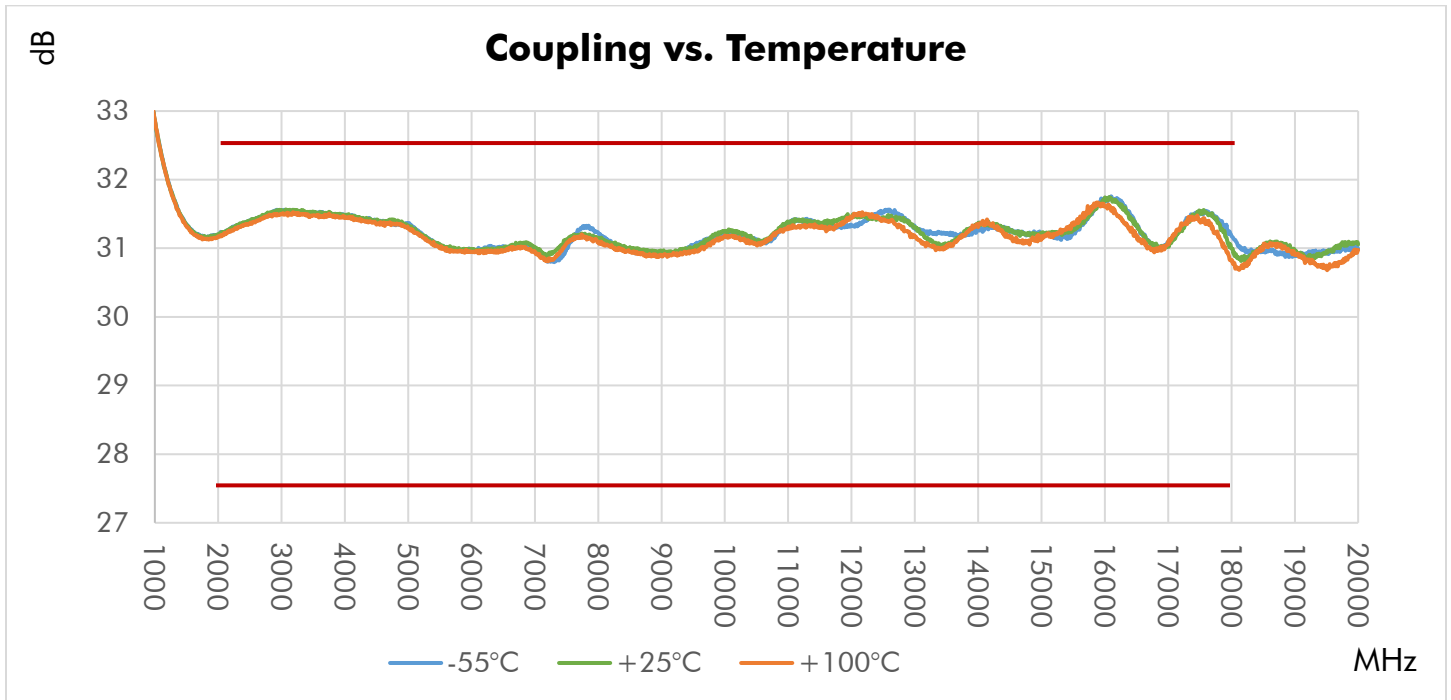
RoHS and REACH Compliant ⁴	
Enclosure	Aluminum
Connectors	Stainless Steel
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Green Paint

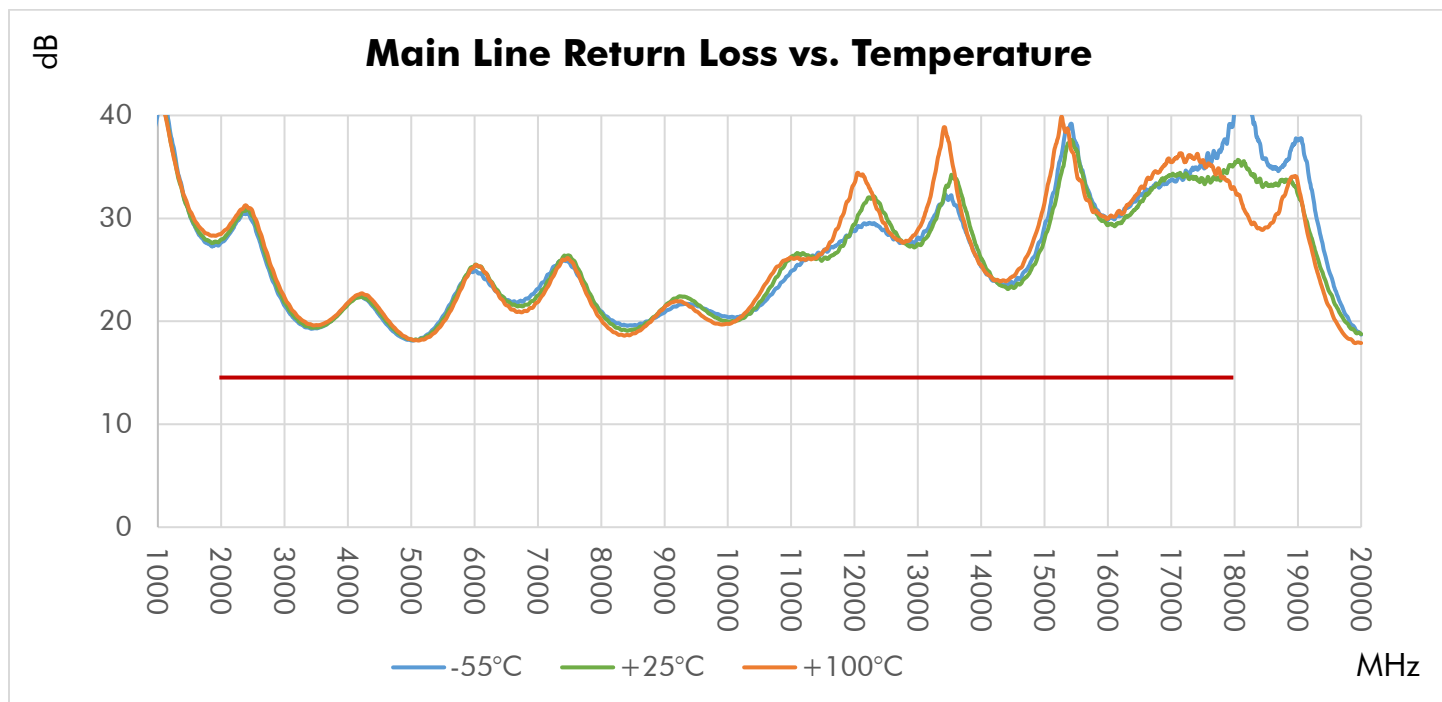
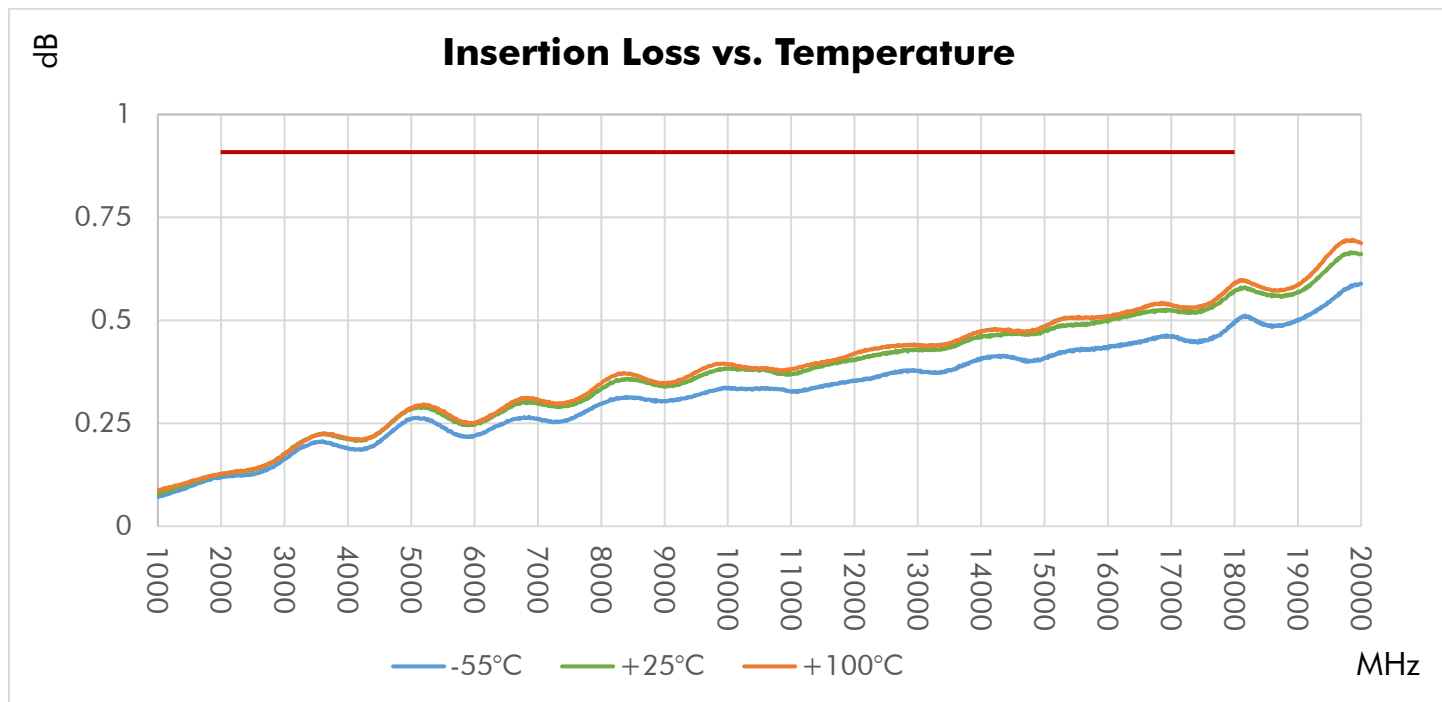
Typical Performance at +25 °C



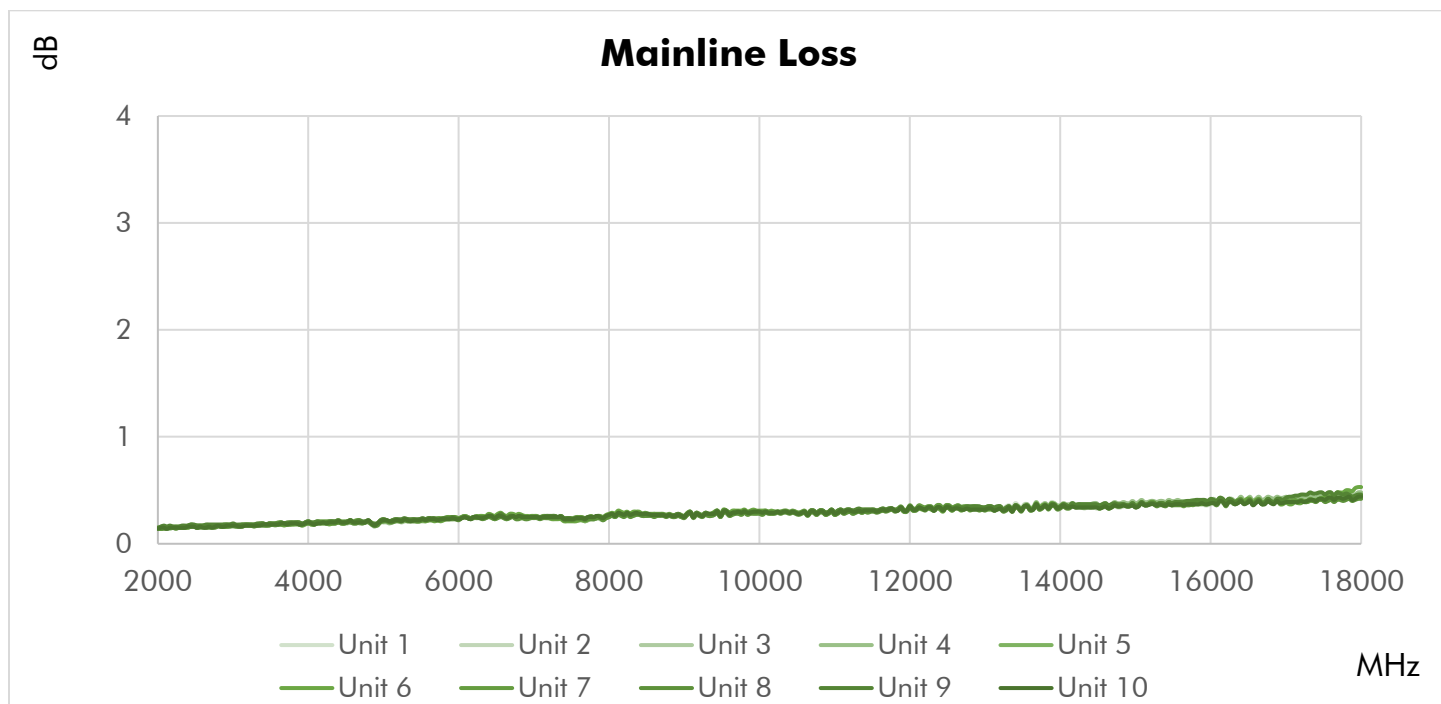
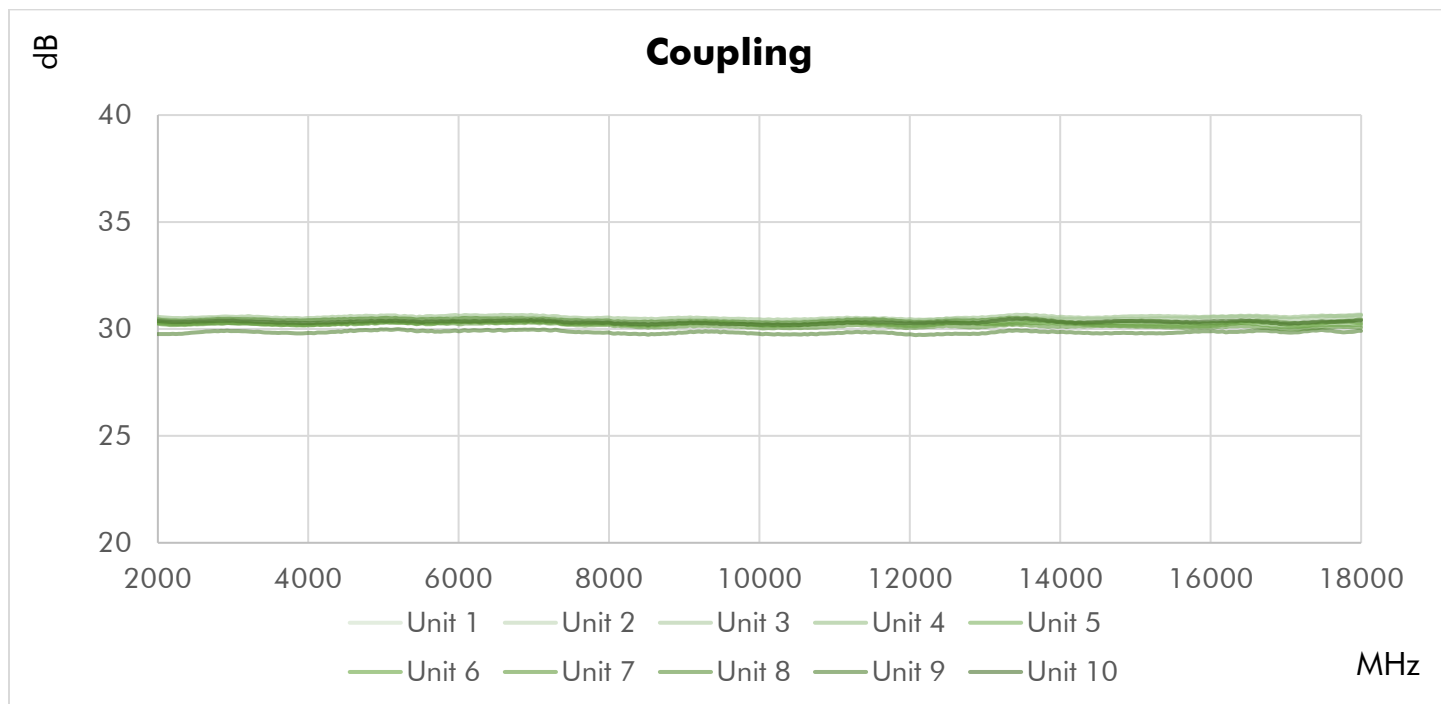


Typical Performance Over Temperature





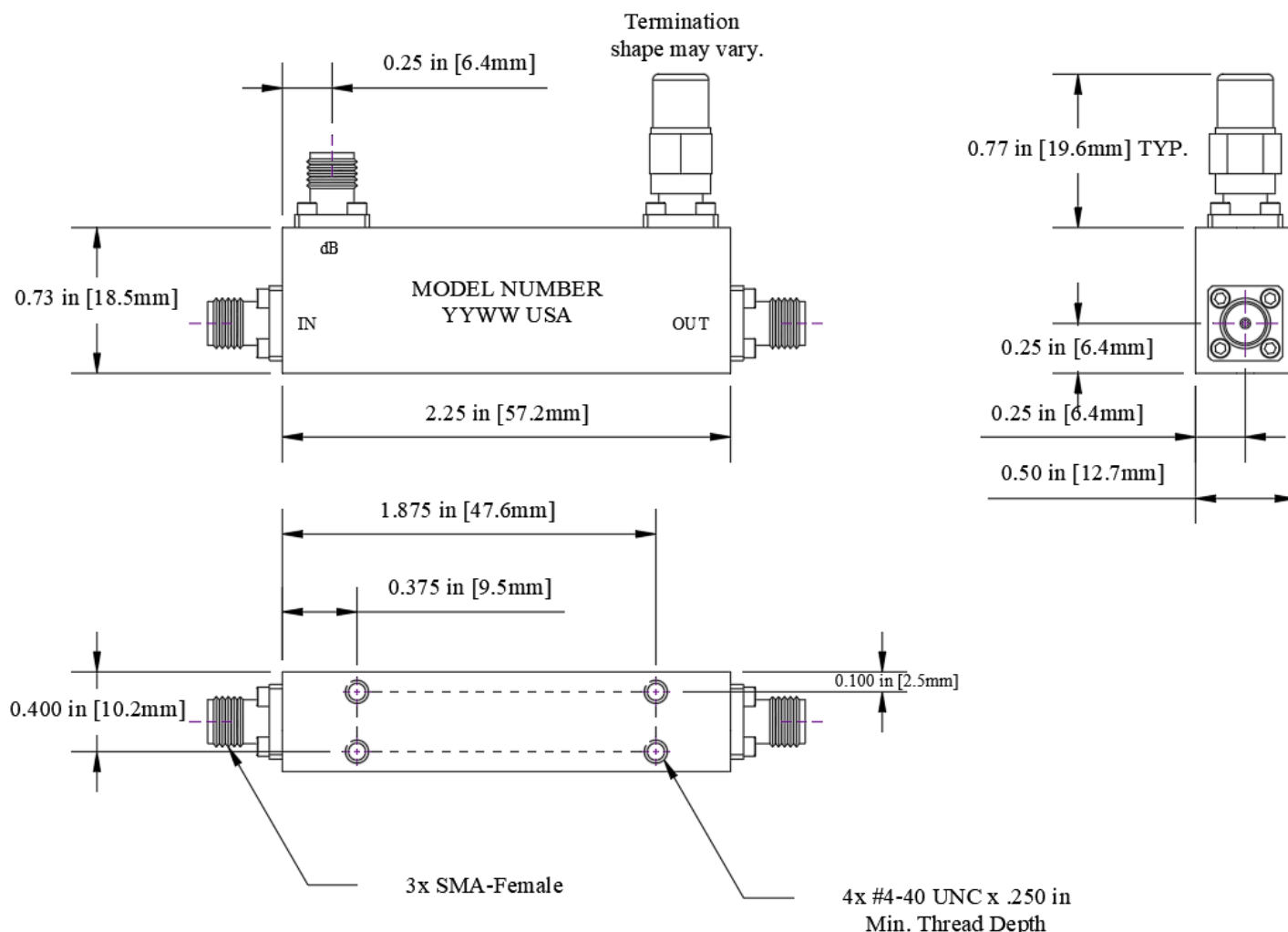
Repeatability in Production



Typical Performance Data

Frequency (MHz)	Return Loss (dB)			Mainline Loss (dB)	Coupling (dB)	Directivity (dB)
	In	Out	Cpl.	In-Out	In-Cpl.	
1000	35.4	35.6	35.5	0.1	31.9	35.6
1500	29.4	29.4	27.3	0.1	30.1	34.0
2000	30.8	30.4	30.3	0.1	29.6	27.4
2500	43.8	44.2	33.8	0.1	29.5	23.8
3000	26.8	26.5	26.0	0.2	29.6	23.8
3500	26.0	25.7	28.5	0.2	29.6	28.3
4000	48.4	51.3	43.5	0.2	29.7	45.2
4500	23.8	23.6	29.9	0.2	29.7	25.3
5000	21.8	21.1	24.5	0.2	29.8	20.7
5500	28.6	29.2	26.6	0.2	29.8	21.6
6000	26.1	26.6	31.4	0.2	29.8	28.1
6500	21.5	21.3	24.4	0.3	29.8	20.3
7000	24.9	24.9	23.6	0.3	29.8	18.2
7500	36.6	36.0	27.5	0.3	29.8	23.4
8000	24.0	23.6	34.7	0.3	29.8	28.3
8500	26.1	26.0	27.2	0.3	29.6	18.6
9000	49.5	45.4	28.2	0.3	29.6	18.4
9500	28.6	28.2	32.4	0.3	29.6	23.0
10000	28.9	28.8	36.2	0.3	29.7	25.2
10500	45.6	50.6	30.0	0.3	29.7	19.8
11000	32.9	32.1	26.5	0.3	29.8	18.7
11500	35.1	34.1	31.0	0.3	29.9	24.5
12000	38.6	39.2	28.6	0.4	29.8	29.5
12500	30.8	30.4	27.3	0.4	29.8	22.7
13000	40.9	38.2	34.0	0.4	29.7	30.5
13500	27.3	27.3	22.1	0.4	29.5	20.4
14000	23.1	22.9	22.0	0.4	29.5	16.8
14500	29.7	29.0	26.3	0.4	29.5	19.8
15000	26.8	27.1	22.7	0.4	29.3	33.4
15500	21.6	21.6	20.0	0.5	29.2	36.1
16000	29.7	29.5	23.9	0.4	29.5	21.4
16500	23.4	23.7	28.7	0.5	29.5	16.6
17000	20.1	20.1	21.1	0.5	29.2	19.4
17500	30.5	30.0	26.6	0.5	29.6	19.1
18000	23.4	23.8	24.6	0.5	29.3	19.3
18500	20.7	21.0	32.5	0.6	29.3	41.6
19000	31.2	29.9	23.9	0.5	29.3	16.2
19500	28.1	28.4	20.5	0.5	29.2	12.9
20000	33.2	32.1	20.7	0.6	29.3	17.6

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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