

Directional Coupler, 0.5-20GHz, 6dB, SMA Female

WMC-0.5-20-6dB-S

Description

Model WMC-0.5-20-6dB-S is a wideband directional coupler that provides a flat nominal 6dB coupling value (units measure near 7.5dB) over the continuous bandwidth of 500MHz to 20GHz. Made in the USA.

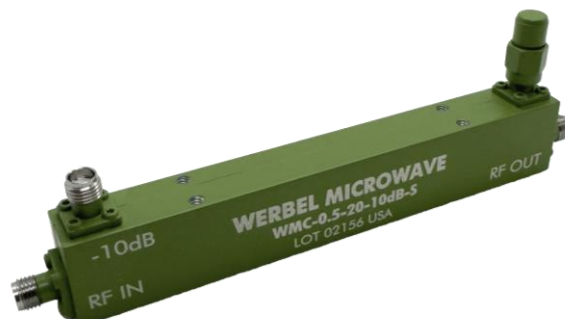


Photo is representative.

Specifications	Min.	Typ.	Max.	Units
Frequency	500	-	20000	MHz
Impedance	-	50	-	Ohm
Coupling	-	7.5±1.5	-	dB
Frequency Sensitivity (Flatness)	-	±0.72	±1.80	dB
Mainline Loss ¹	-	2.67	3.50	dB
Directivity	12	15.9	-	dB
Return Loss (In and Out)	12.7	15.5	-	dB
Return Loss (Coupling)	12.7	15.6	-	dB
Isolation	-	23.4	-	dB
Forward Power (CW) ²	-	-	20	Watts
Reverse Power (CW) ²	-	-	4	Watts

Mechanical

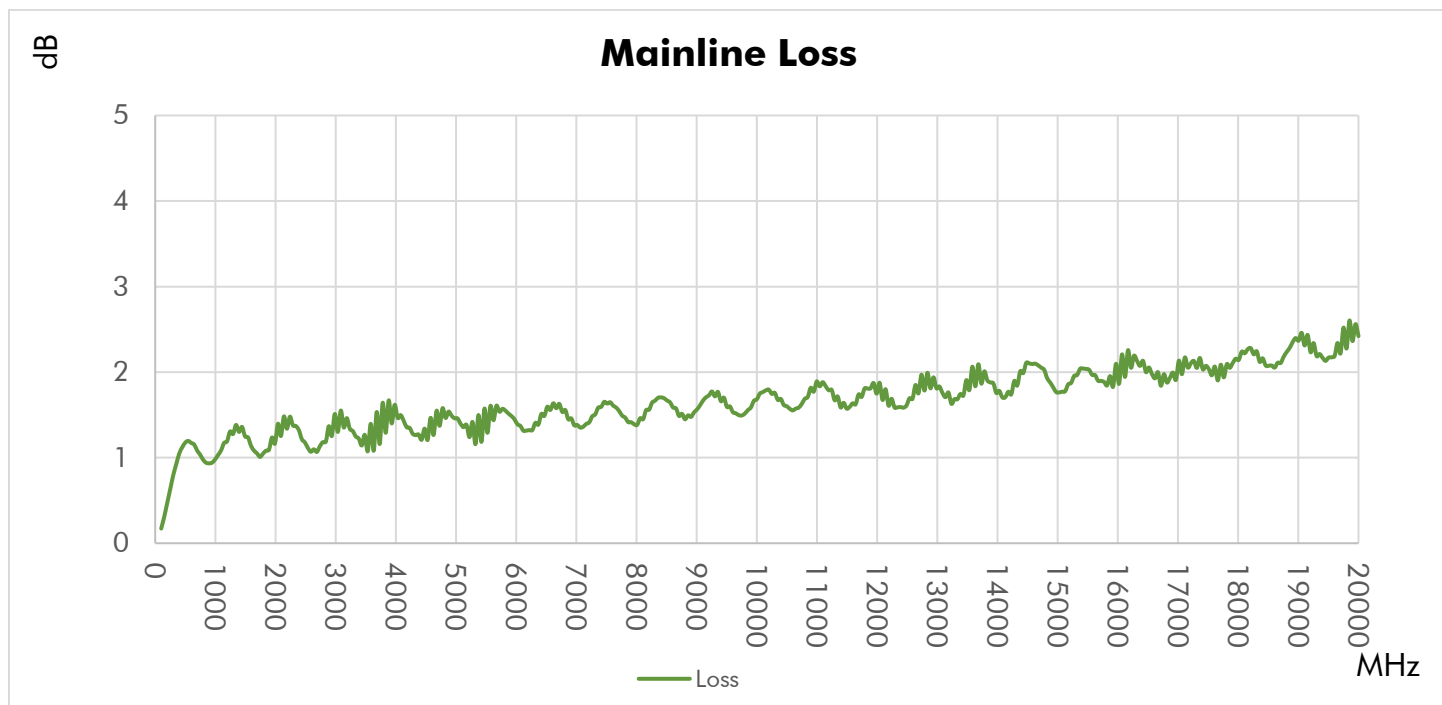
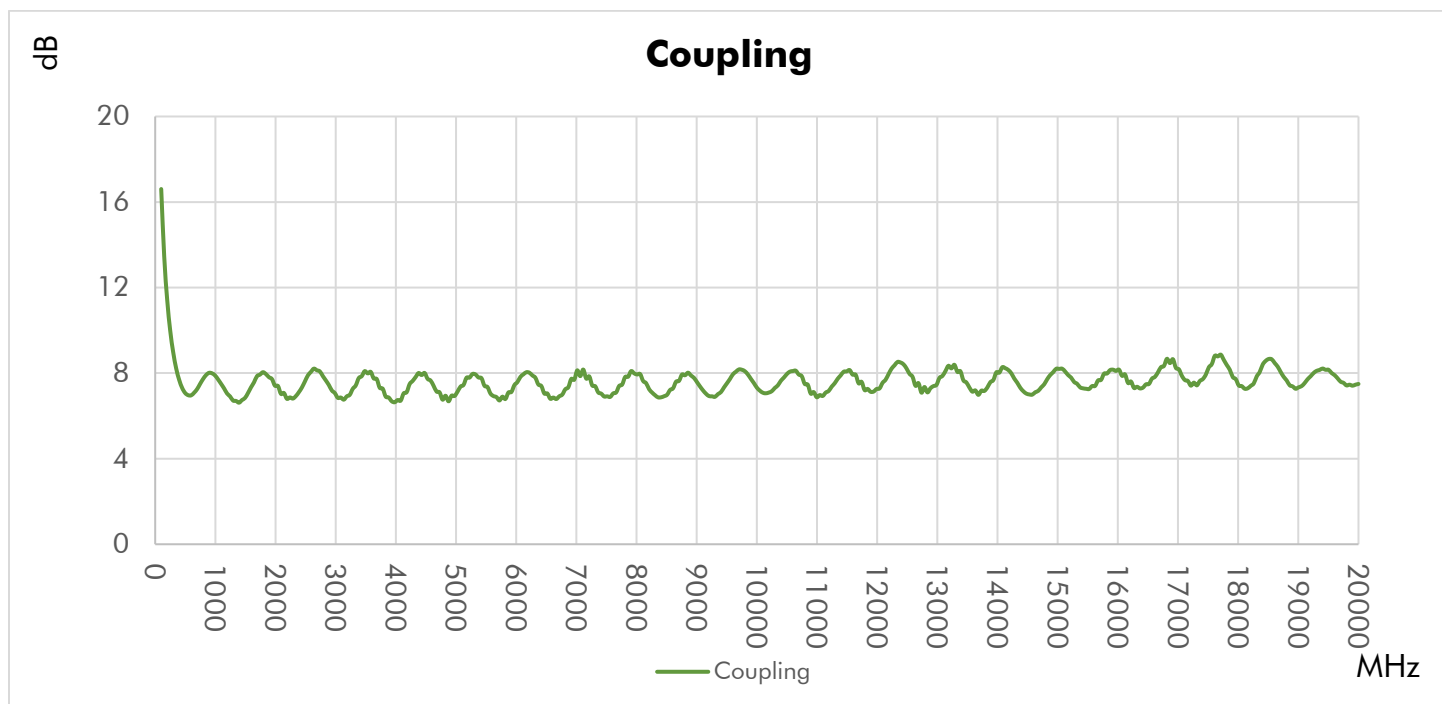
Connector Interface	SMA-Female
Operating Temperature ³	-55 to +85 °C
Storage Temperature	-55 to +100 °C
Weight	3.5 oz (86 g)
Humidity	10-90% non-condensing
Environment	Indoors Use Only

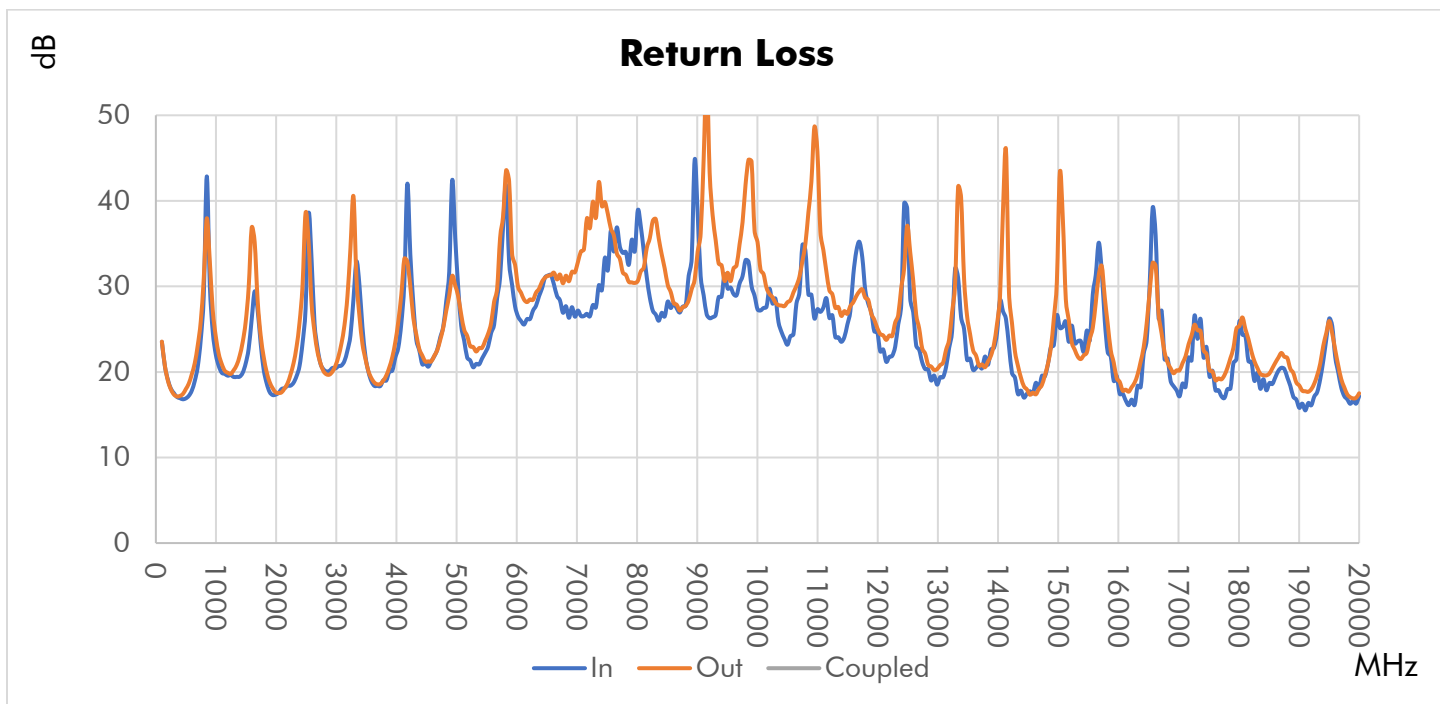
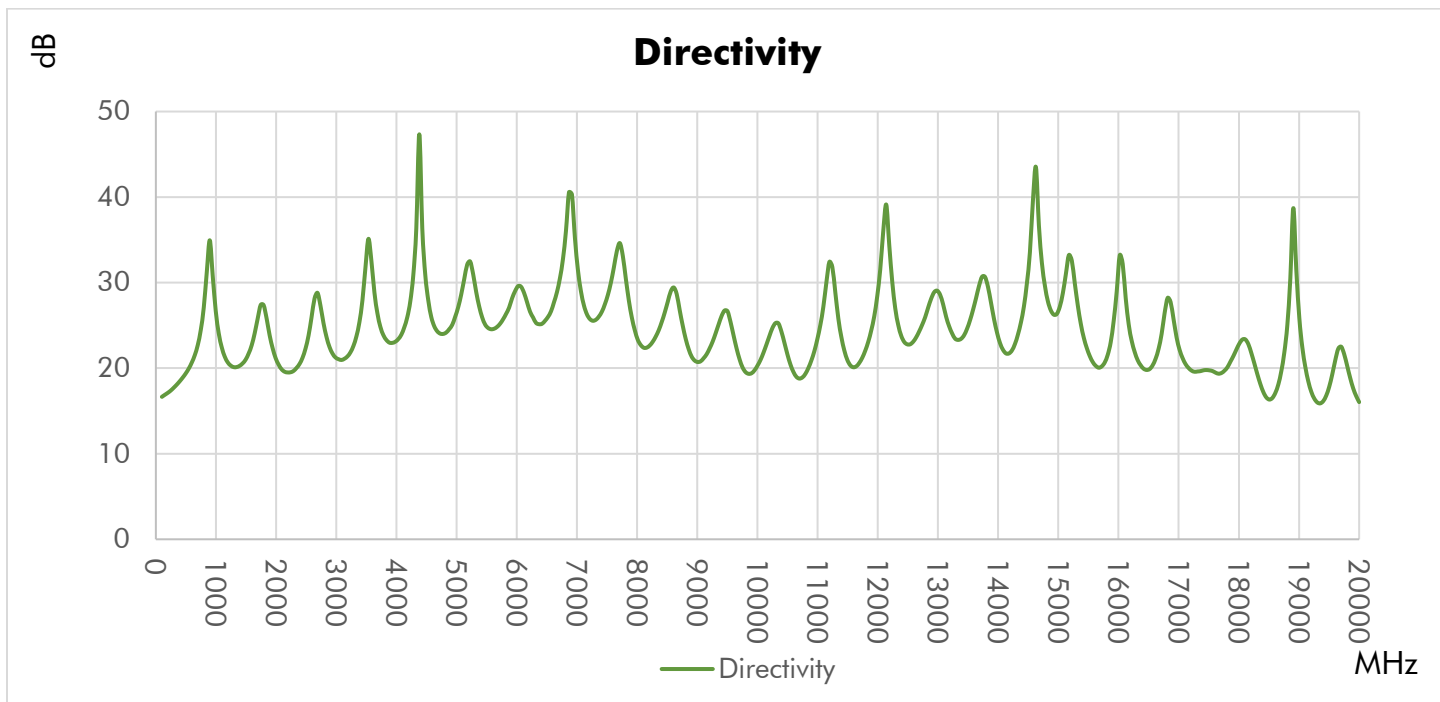
Materials

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

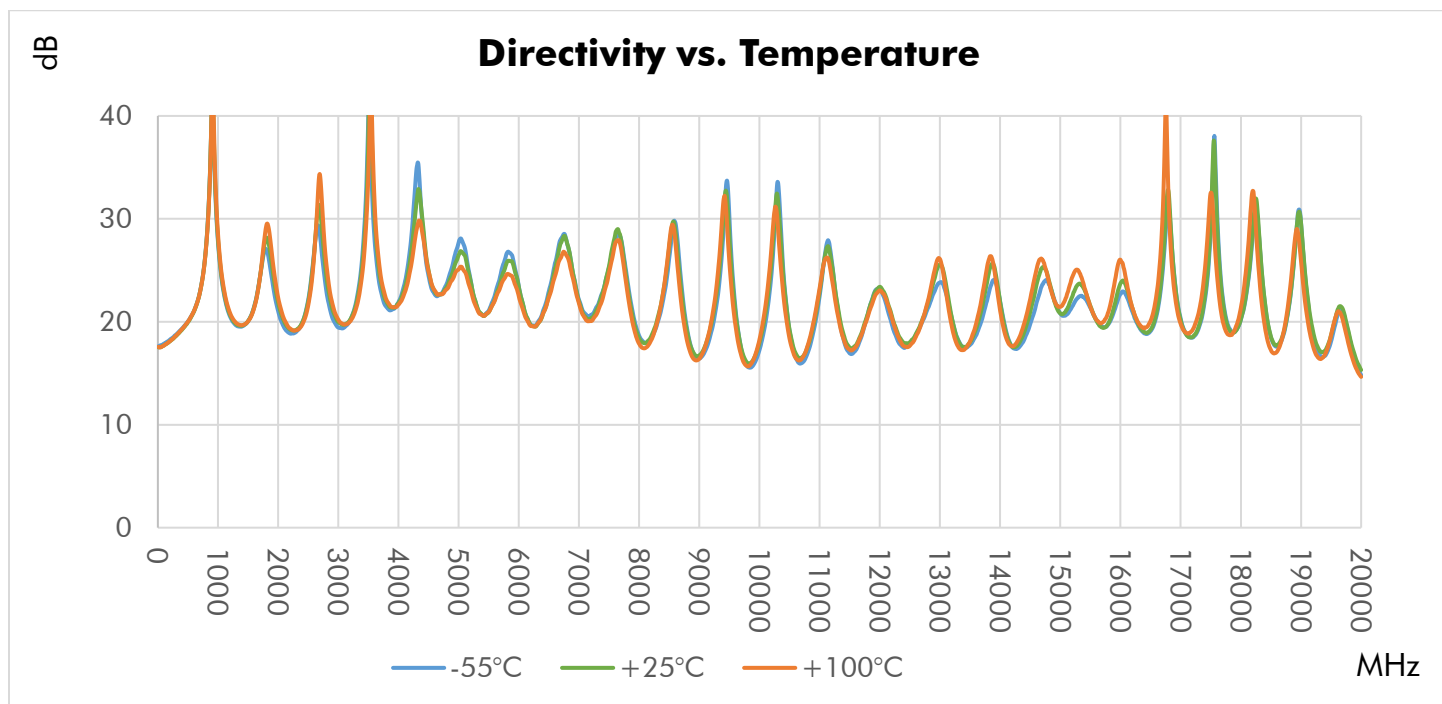
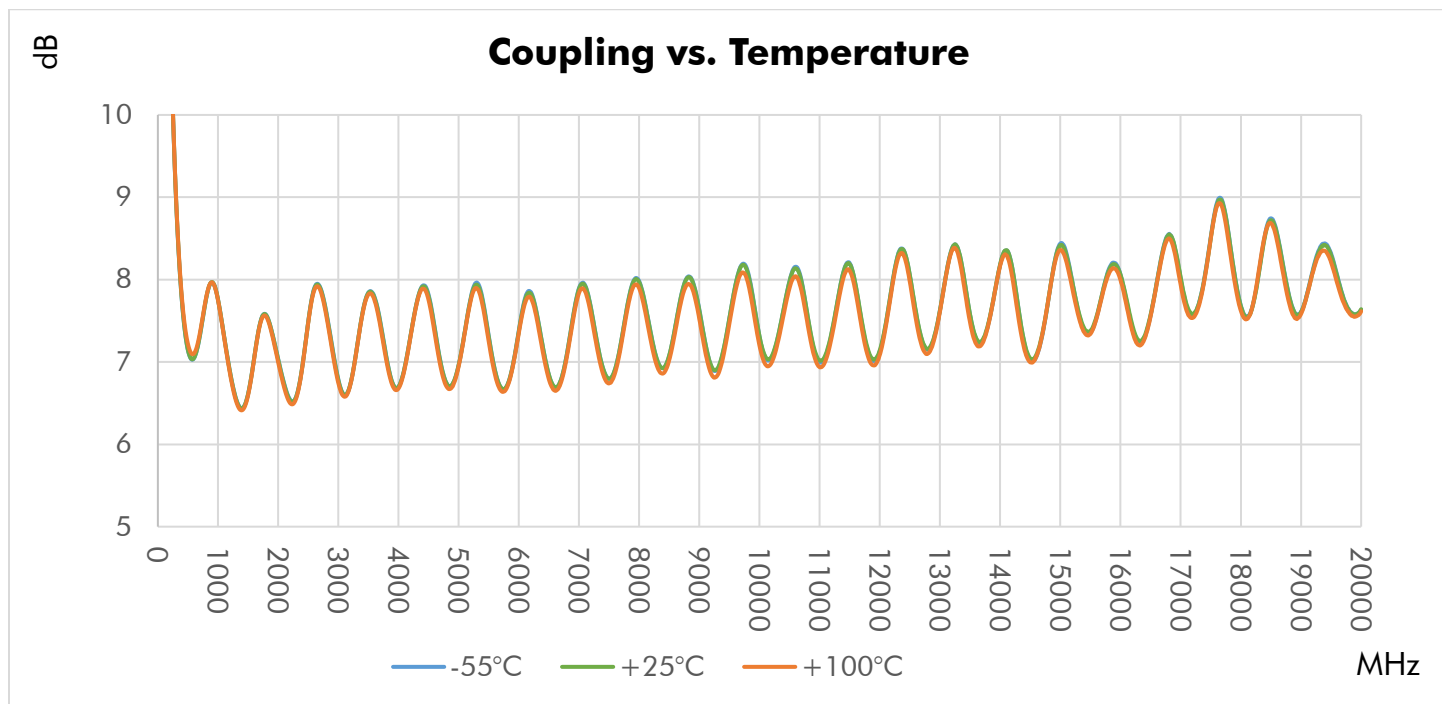
1. Mainline loss includes coupling loss.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications at +25 °C only.
4. To the best of our knowledge at the time of publication.

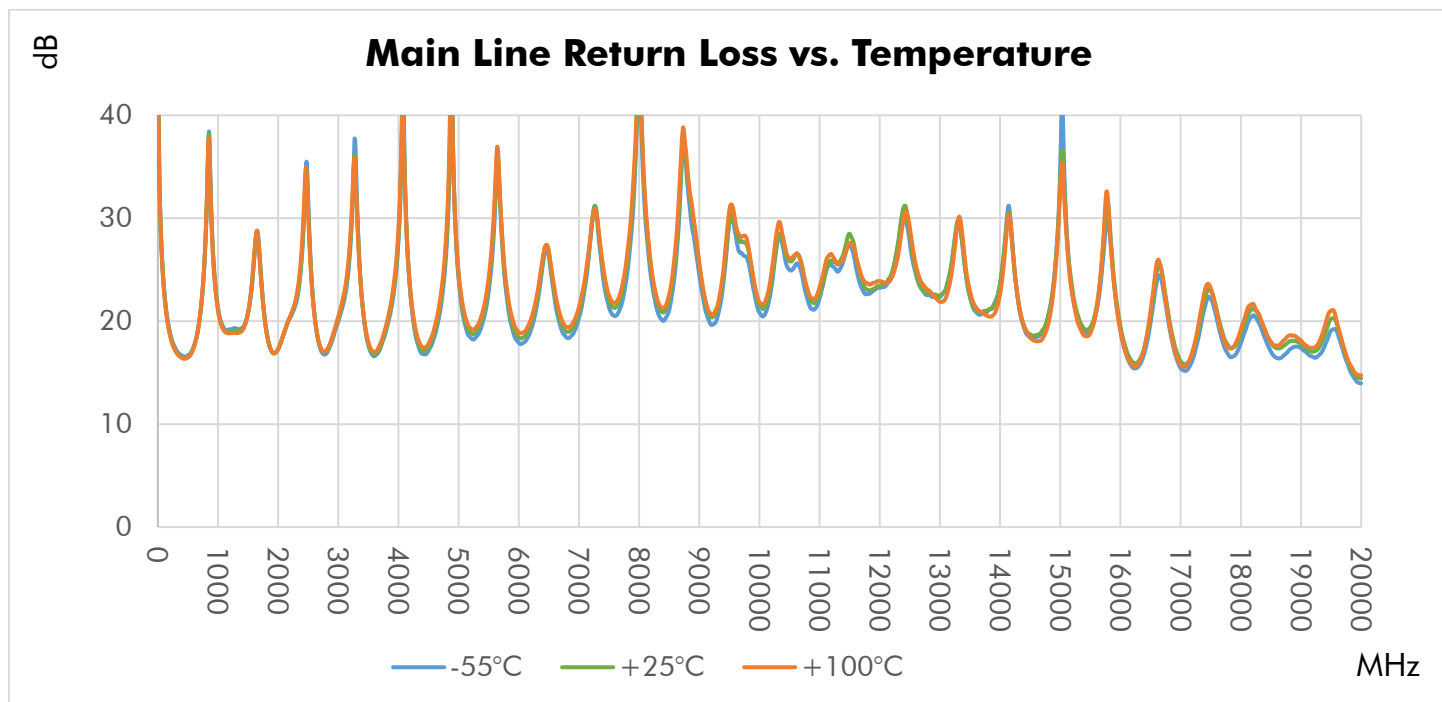
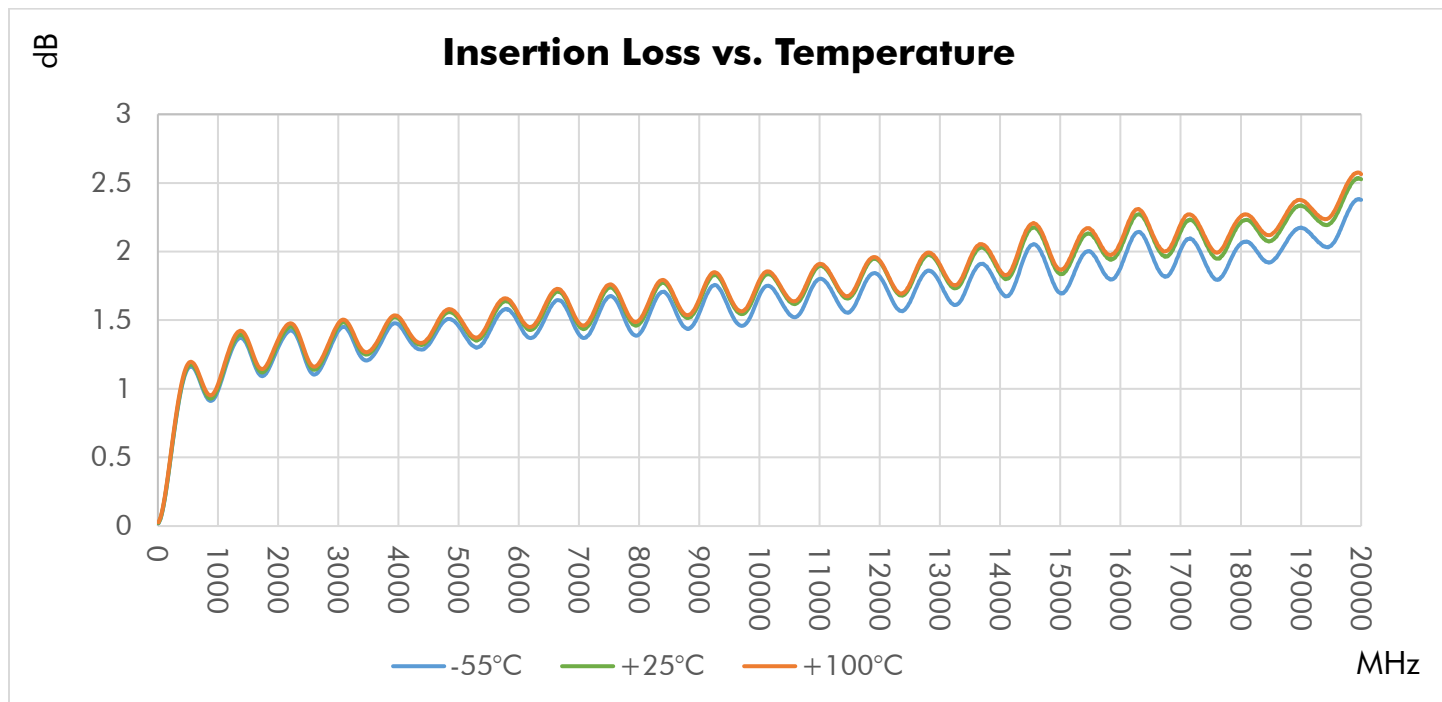
Typical Performance at +25 °C



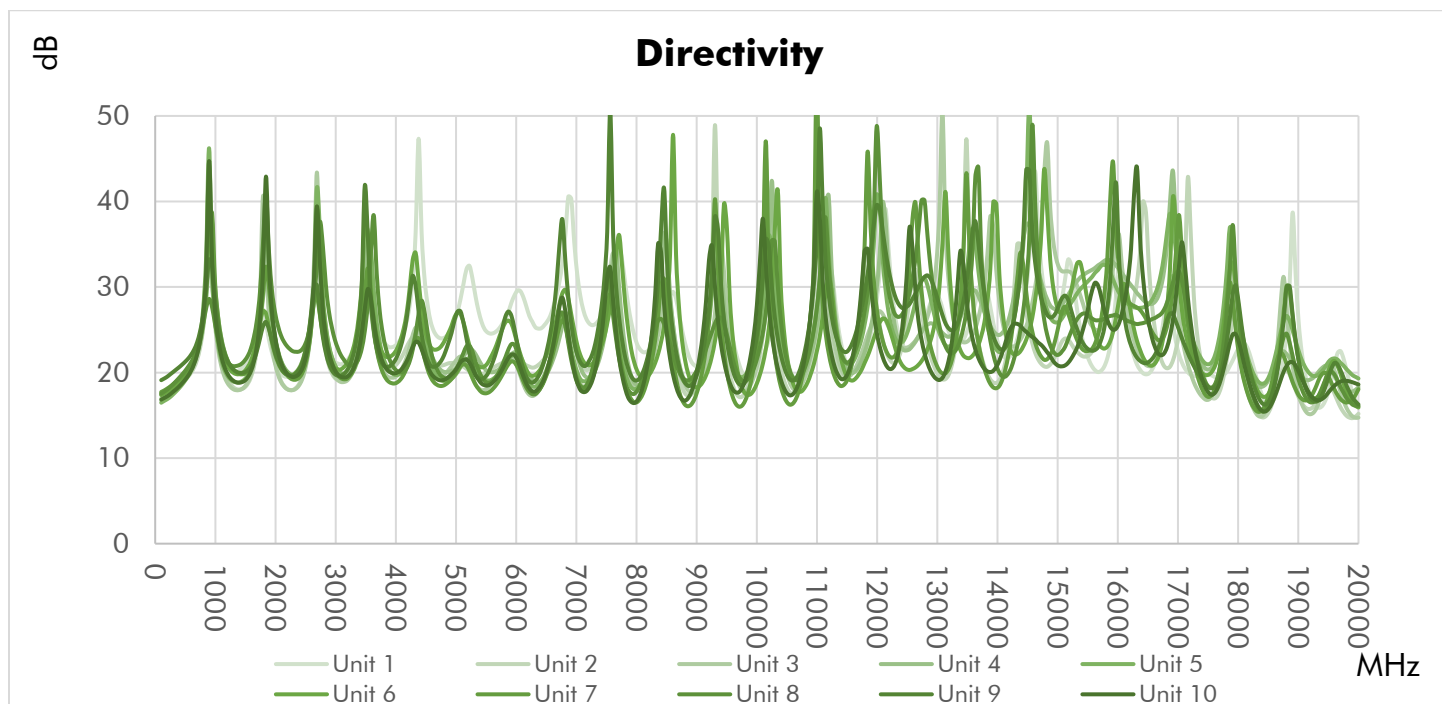
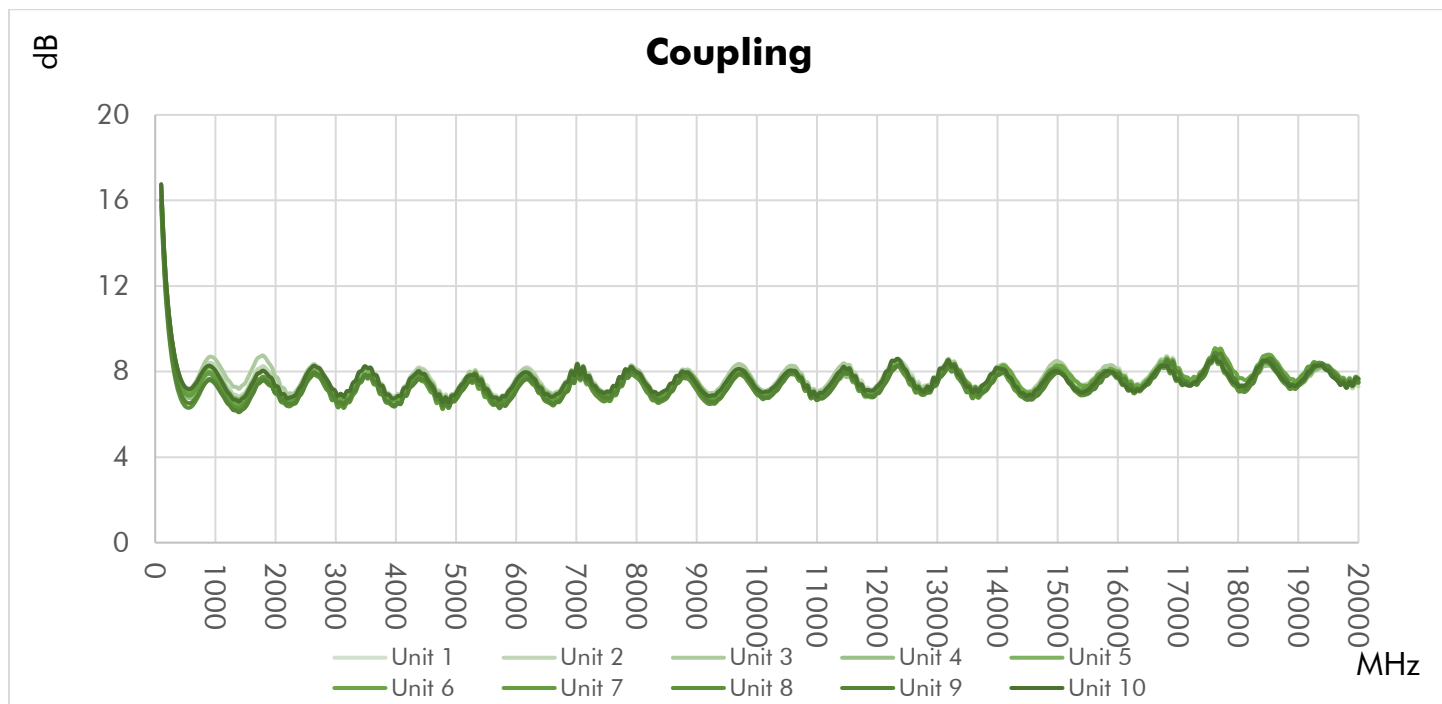


Typical Performance Over Temperature





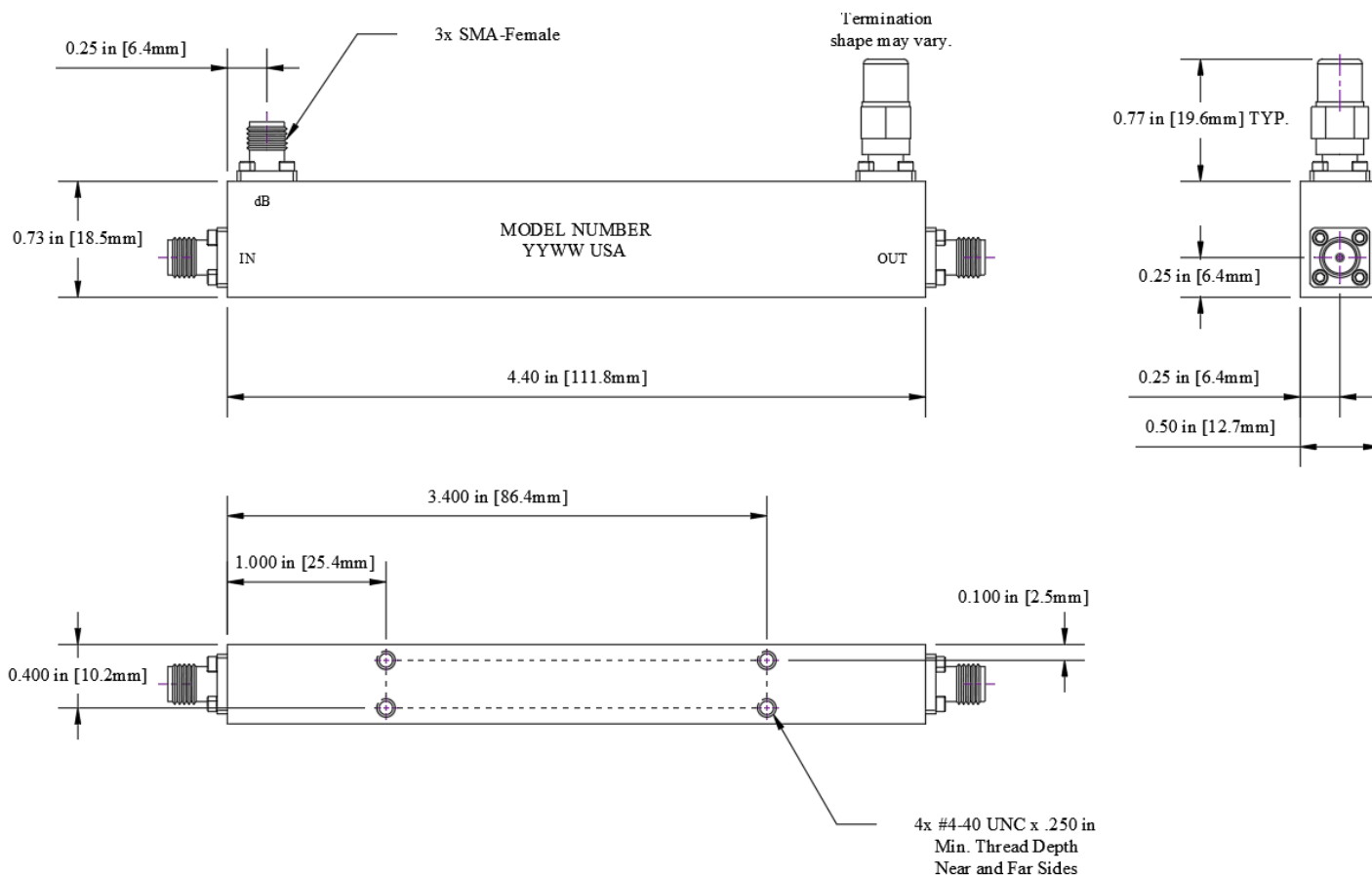
Repeatability in Production



Typical Performance Data

Frequency (MHz)	Return Loss (dB)			Mainline Loss (dB)	Coupling (dB)	Directivity (dB)
	In	Out	Cpl.	In-Out	In-Cpl.	
100	23.52	23.55	22.87	0.17	16.61	16.65
200	19.11	18.99	18.45	0.47	11.43	17.12
300	17.54	17.38	16.93	0.79	8.98	17.73
400	16.94	17.20	16.87	1.05	7.69	18.49
500	16.91	18.00	17.88	1.17	7.07	19.40
600	17.82	19.74	20.05	1.17	6.96	20.66
700	20.67	23.16	24.43	1.08	7.25	22.72
800	28.94	30.97	38.14	0.98	7.73	27.09
900	30.29	33.01	28.71	0.93	8.02	34.95
1000	22.07	24.19	22.18	0.98	7.89	26.68
1500	21.00	25.85	31.26	1.25	6.84	21.01
2000	17.35	17.62	17.89	1.17	7.41	21.18
3000	20.68	21.82	28.62	1.30	6.84	21.05
4000	22.86	25.93	22.62	1.47	6.74	23.41
5000	29.89	28.83	22.32	1.46	7.14	27.13
6000	26.48	29.94	27.00	1.39	7.58	29.58
7000	27.18	32.85	22.33	1.38	8.13	31.47
8000	38.89	30.63	21.84	1.38	7.94	23.31
9000	38.55	34.07	34.29	1.56	7.58	20.72
10000	27.32	35.19	20.14	1.68	7.32	20.31
11000	27.02	36.38	20.99	1.83	6.97	25.06
12000	22.40	24.43	30.11	1.88	7.29	31.55
13000	19.38	20.79	22.89	1.83	7.78	28.58
14000	28.36	28.76	16.77	1.78	8.02	22.94
15000	25.15	43.33	19.54	1.76	8.20	27.21
16000	17.43	18.84	19.95	1.86	8.16	33.19
17000	17.16	20.19	15.36	2.14	8.18	22.15
18000	25.92	25.37	18.65	2.14	7.42	22.90
19000	15.80	18.41	26.68	2.37	7.34	25.88
20000	17.17	17.51	23.31	2.42	7.50	16.03

Outline Dimensions



Outline # OL-1185

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

Tolerances on 2-pl decimals: ± 0.03 . 3-pl decimals: ± 0.015 .

The information contained in this document is accurate to the best of our knowledge and representative of the product described herein at the date of publication. It may be necessary to make modifications to the product and/or documentation of the product. Werbel Microwave LLC reserves the right to make such changes as required without notice. Unless otherwise stated, all specifications and dimensions are nominal. Werbel Microwave LLC does not make any representation or warranty regarding the suitability of the product described herein for any particular purpose or application, and Werbel Microwave LLC does not assume any liability arising out of the use of any part of documentation. This document gives only a description of the product(s) and shall not form part of any contract. Please contact a Werbel Microwave LLC Applications Engineer for the most current specification drawing.

Reliability testing was performed as an internal requalification of the product to substantiate the published specifications, which were previously arrived at by calculation and/or similarity to existing products. The results of these tests are provided as a courtesy and shall not form part of a contract or warranty. While reliability tests may depict the product being tested beyond the published specification ratings for the purpose of stress testing the product, this does not imply that the product should be operating above the rated limits for any length of time. Specifications related to reliability (e.g., performance over temperature, power handling, DC current, HI-POT) are "designed to meet" and are not individually tested in production of commercially available products. Please contact a Werbel Microwave LLC Applications Engineer if specific reliability testing is needed on a particular product.