WERBEL MICROWAVE LLC
628 State Route 10, Unit 14
Whippany, New Jersey 07981
Sales@WerbelMicrowave.com - www.WerbelMicrowave.com

Power Divider, 2-way, 0.5-18GHz, SMA Female

WM2PD-0.5-18-S

This 2-way broadband power divider/combiner is designed for reliable operation from 0.5 to 18 GHz, supporting ultra-wideband RF signal distribution, combining, and monitoring across a broad range of frequencies. The design provides consistent insertion loss, isolation, and port match performance across the band, making it well suited for broadband RF systems, test and measurement applications, and multi-band signal routing in lab and production environments.

The product is engineered using a production-optimized architecture that prioritizes repeatability and manufacturability over narrow, prototype-level optimization. Electrical performance is based on measured results across multiple production units rather than single optimized prototype units, ensuring consistent behavior from unit to unit without the need for post-assembly tuning. This approach supports high production yield, stable supply, and predictable integration into wideband RF and microwave systems.

Manufactured in the United States using robust materials and standard SMA coaxial interfaces, this power divider/combiner is ideal for applications requiring maximum frequency coverage in a single component. Typical use cases include broadband communication systems, WiFi and ISM band infrastructure, multi-band test setups, and general-purpose RF signal distribution where flexibility, cost efficiency, and availability are critical.

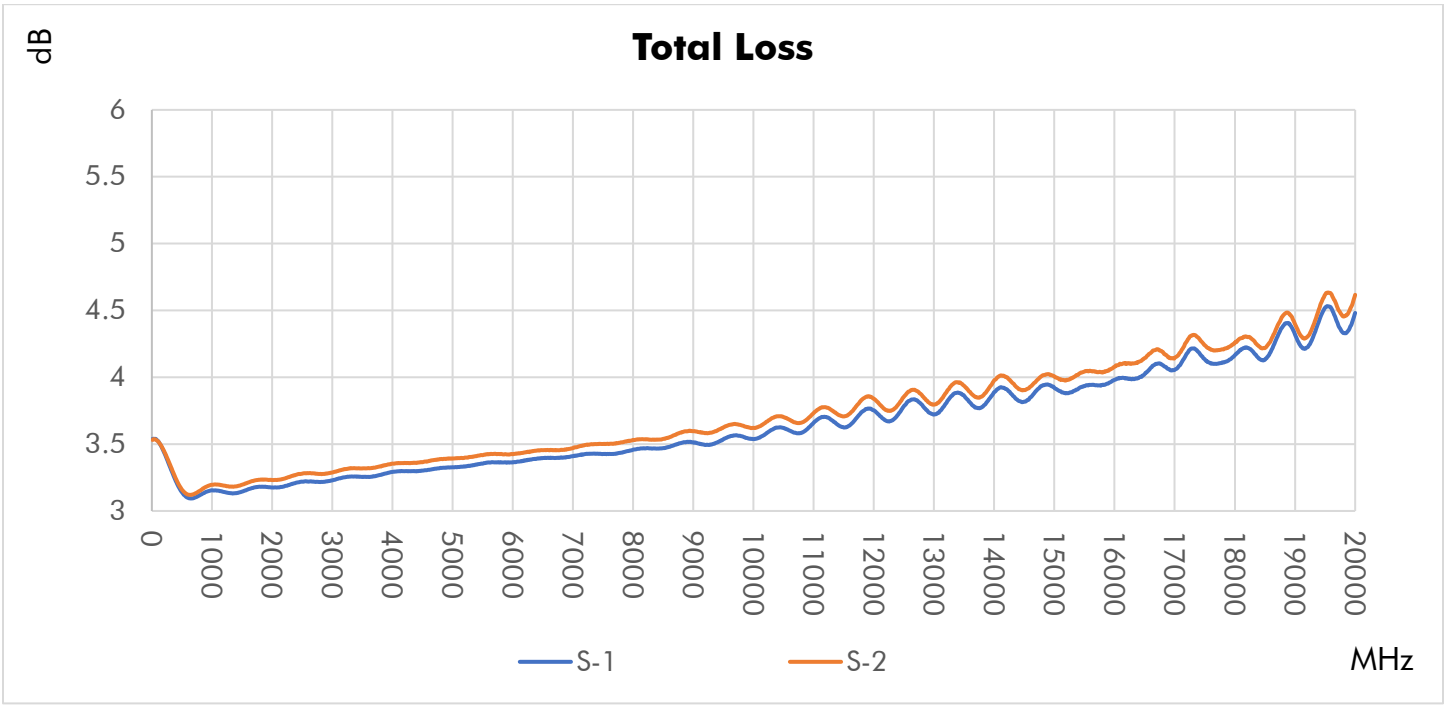
Parameter	Low Band	Mid Band	High Band	Unit
Frequency Range	0.5-8	8-12	12-18	GHz
Impedance		50		Ω
Return Loss (Port S)	10	10	10	dB, min.
Return Loss (Port 1-2)	12	12	12	dB, min.
Insertion Loss above 3.01dB	1.1	1.6	2.1	dB, max.
Isolation	12 (0.5-0.7GHz) 14 (0.7-8GHz)	14	14	dB, min.
Amplitude Unbalance (±)[1]	0.6	0.7	0.9	dB, max.
Phase Unbalance (±)[1]	4	7	10	Degree, max.
Input Power (CW)[2]		20		W, max.
Combining Power (CW)[2]		0.075		W/port, max.
DC Current		0.3		A/port, max.

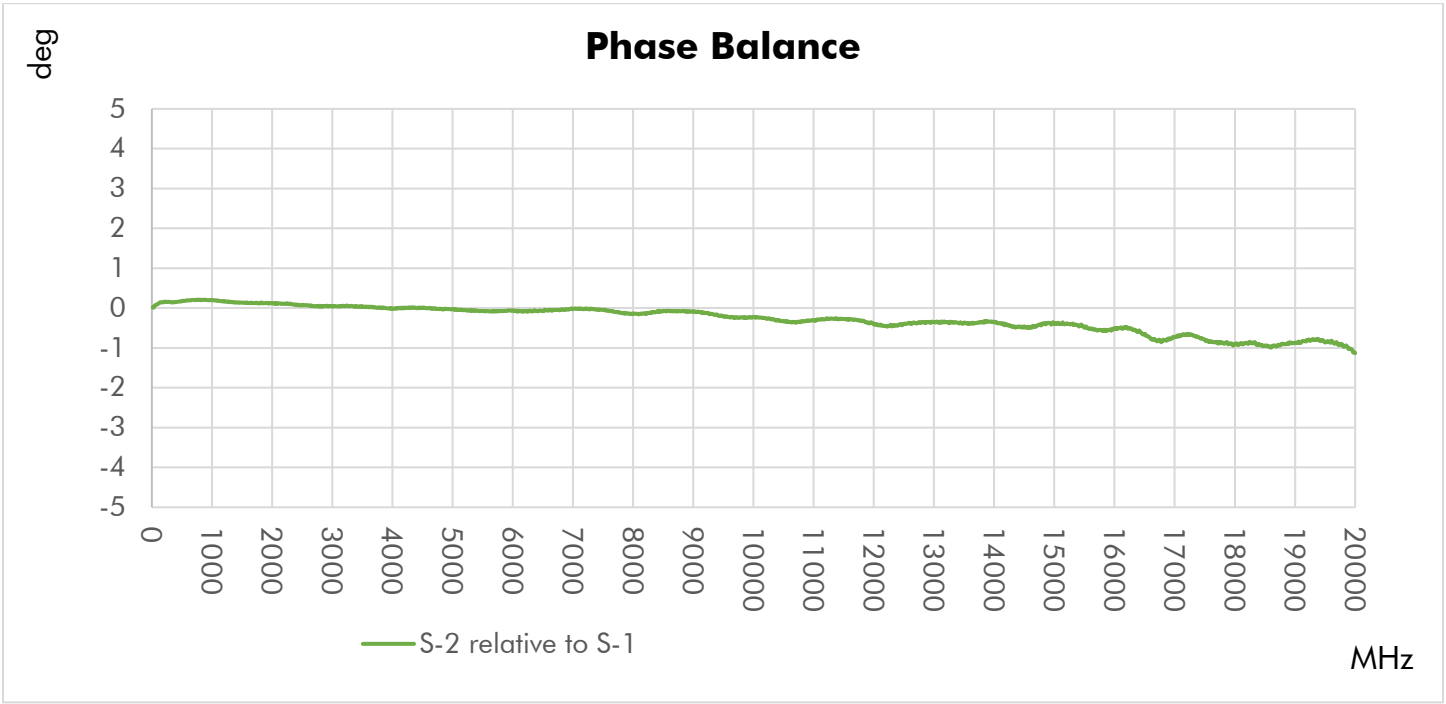
Mechanical and Environmental Specifications

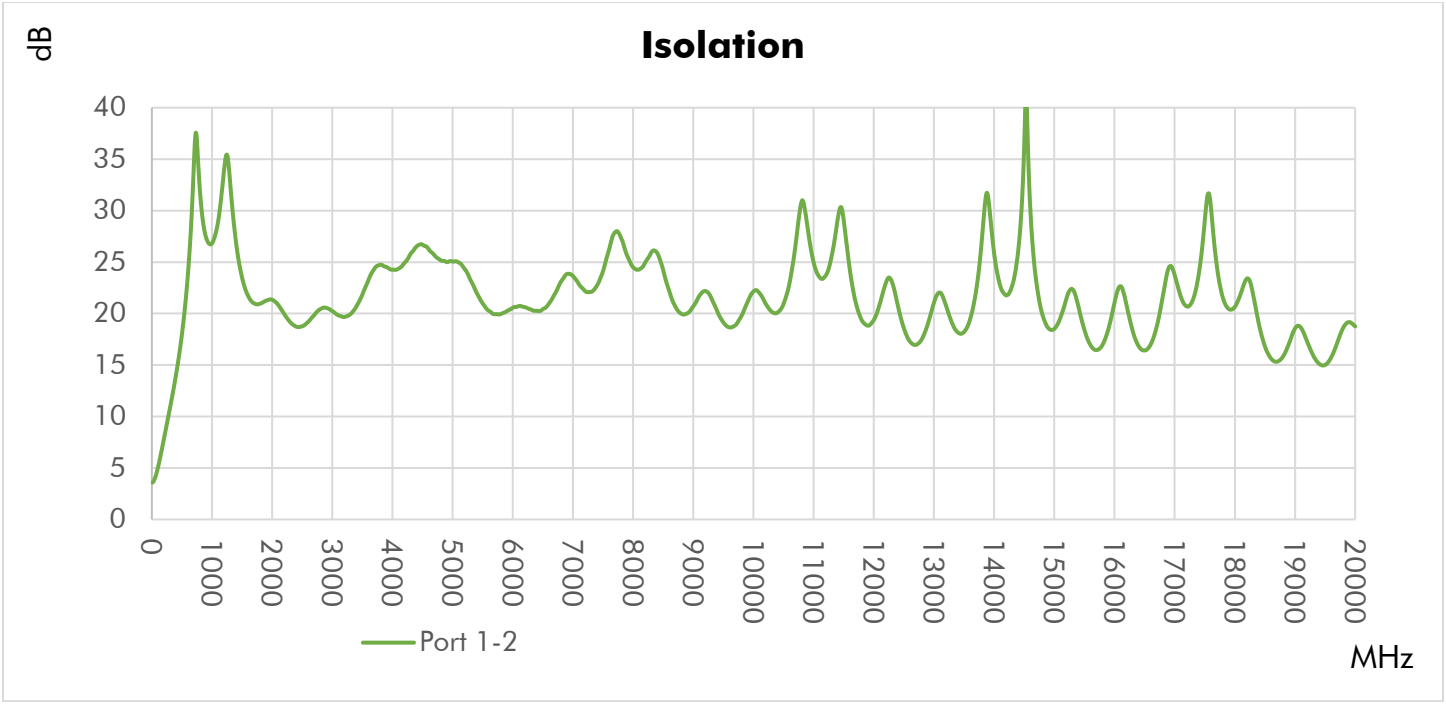
Connector Interface	SMA Female	RoHS Status[4]	RoHS3 Compliant
Operating Temperature[3]	-55 to +85 °C	REACH Status[4]	REACH Unaffected
Storage Temperature	-55 to +100 °C	Enclosure Material	Aluminum
Nominal Weight	105 g (3.7 oz)	Connectors Material	Stainless Steel
Operating Humidity	10-90% (non-condensing)	Contacts Material	Beryllium Copper, Gold Plated
Operating Environment	Indoor Use Only	Insulators Material	Virgin PTFE
HTSUS Code	8548.00.0000	Finish	Green Paint
ECCN	EAR99	Country of Origin	United States of America

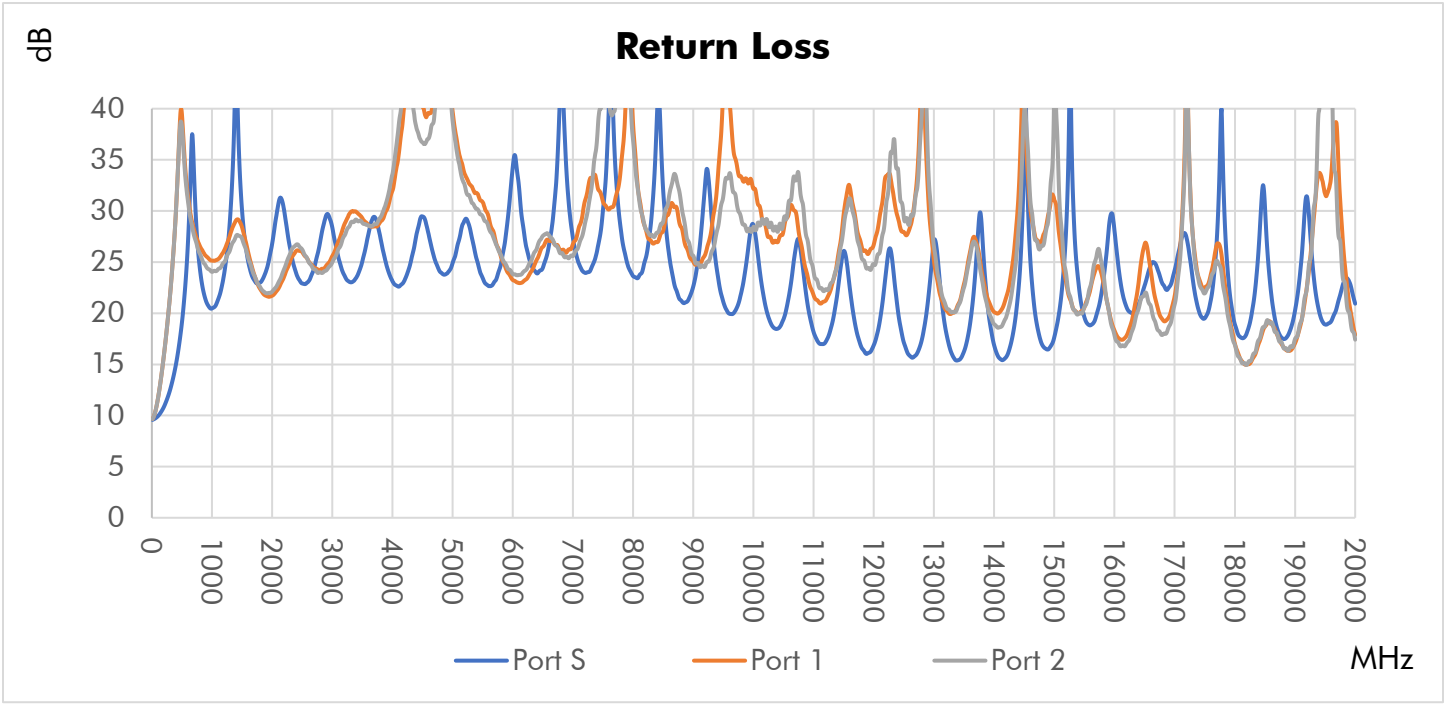
1. With reference to average.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications are tested at +25 °C.
4. To the best of our knowledge at the time of publication.

Typical Performance at +25 °C

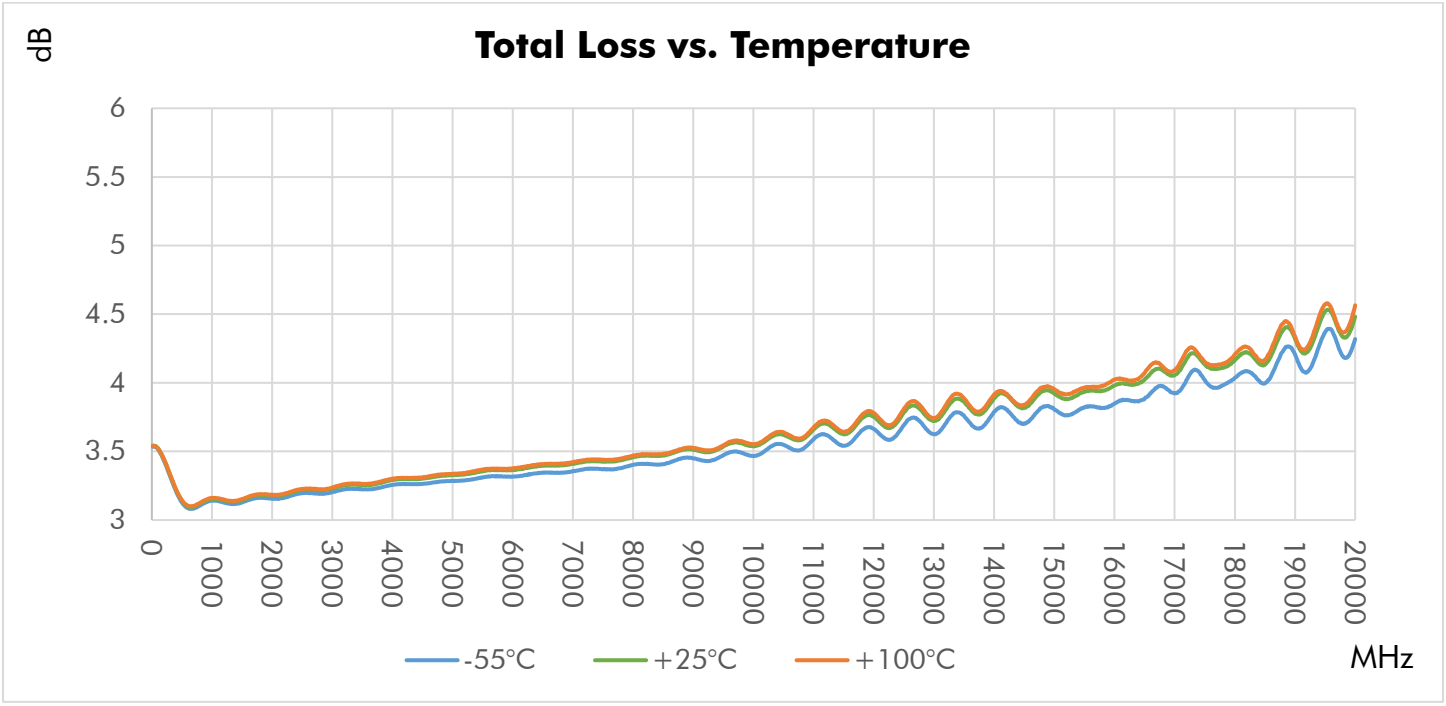


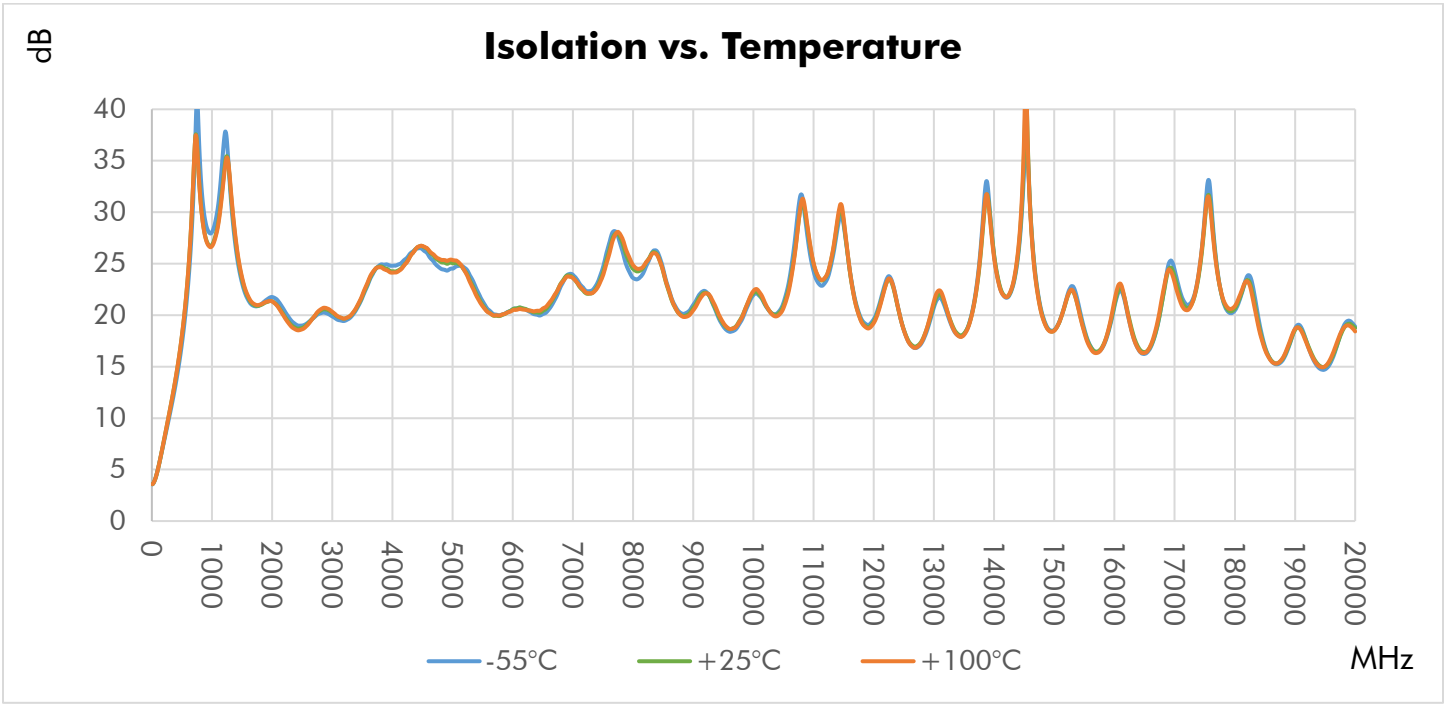


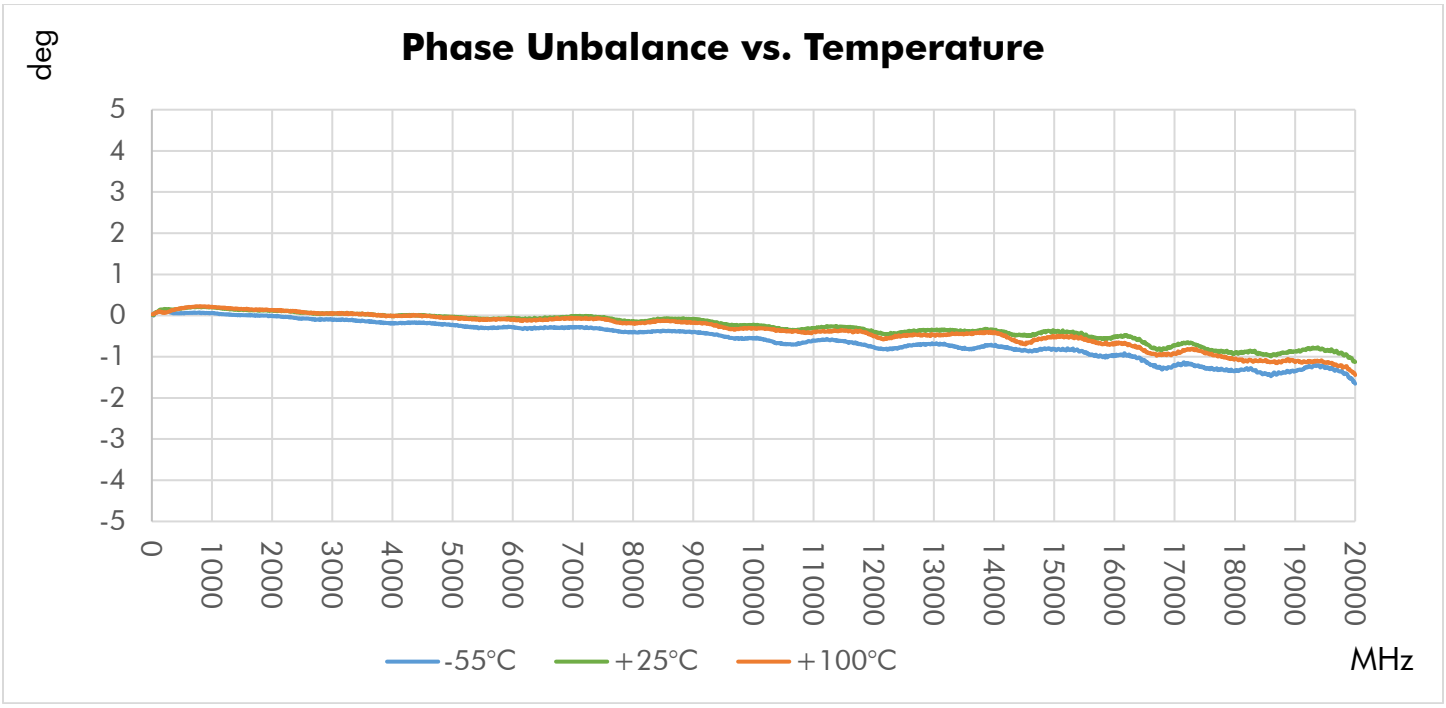

Isolation
dB
40
35
30
25
20
15
10
5
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000
16000
17000
18000
19000
20000
Port 1-2
MHz

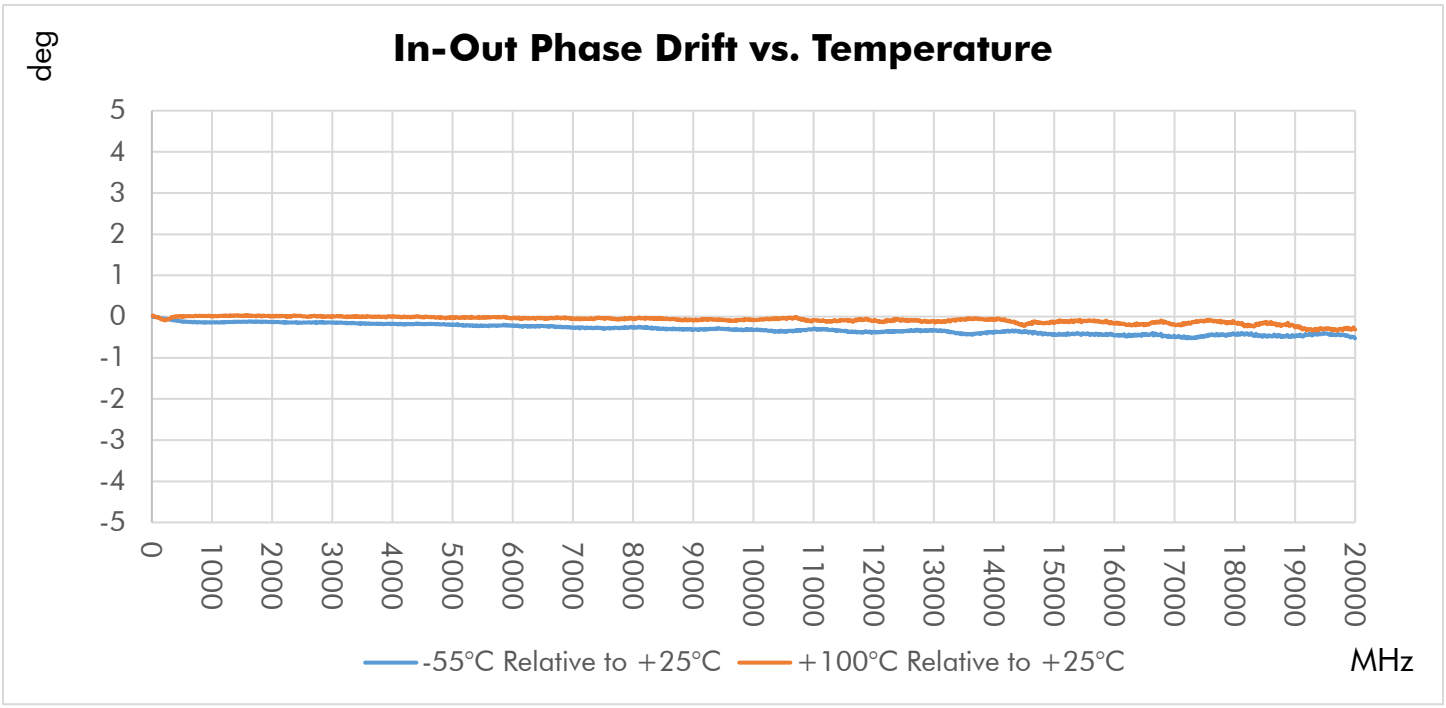

Return Loss
dB
40
35
30
25
20
15
10
5
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000
16000
17000
18000
19000
20000
Port S
Port 1
Port 2
MHz

Typical Performance Over Temperature



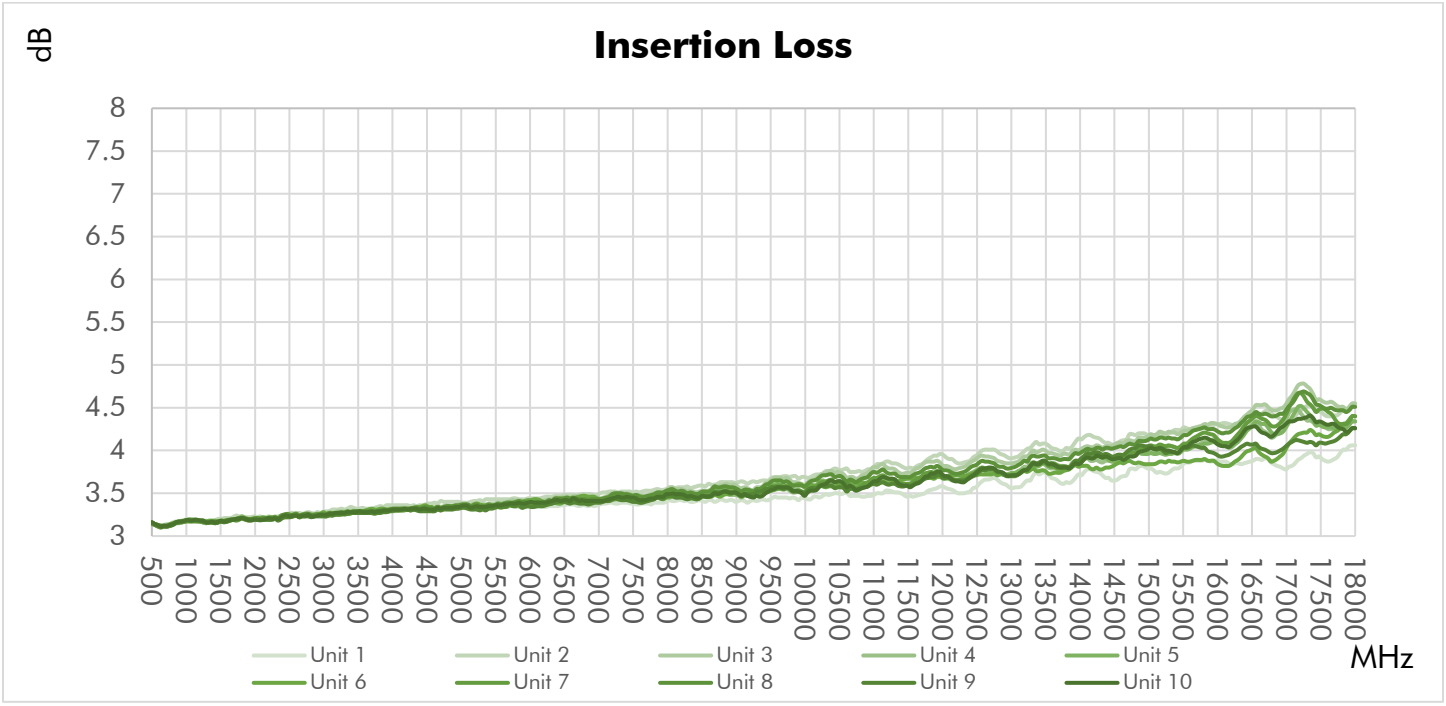


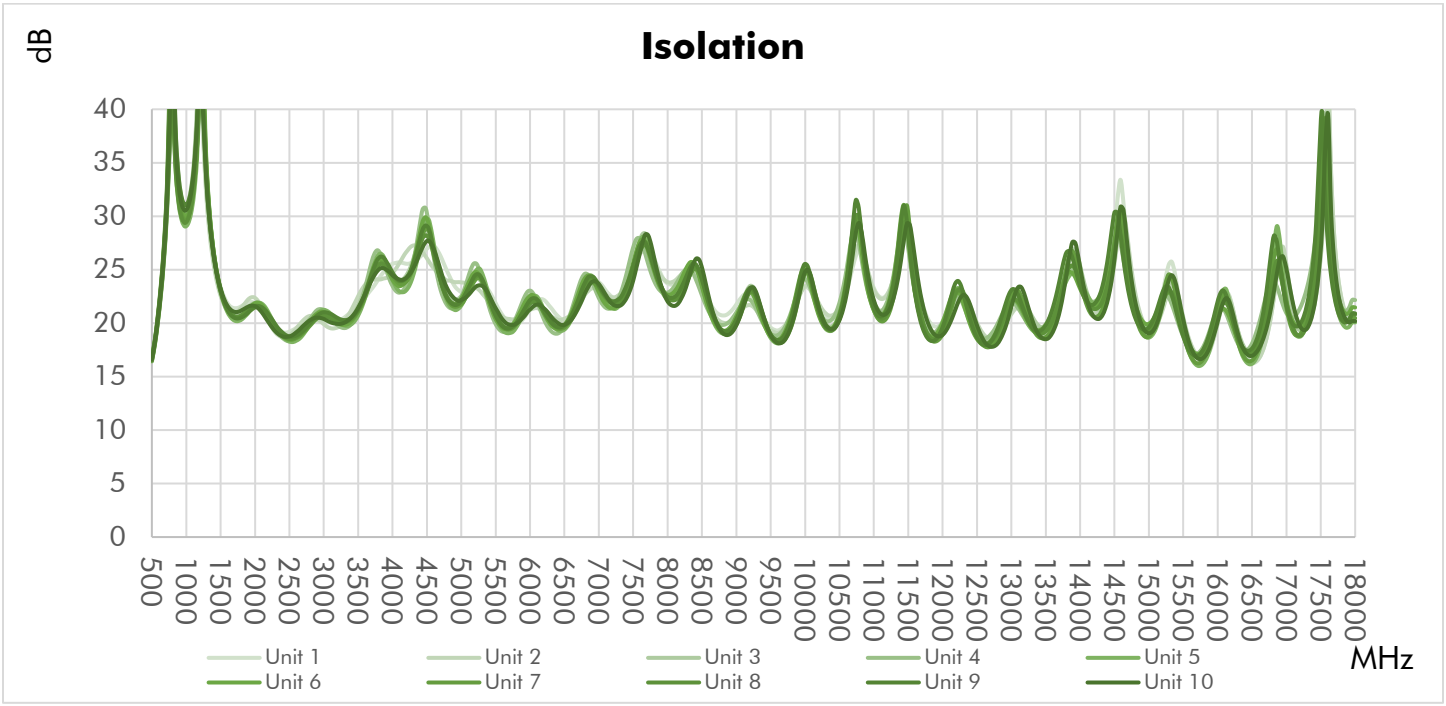

Phase Unbalance vs. Temperature
deg
5
4
3
2
1
0
-1
-2
-3
-4
-5
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000
16000
17000
18000
19000
20000
-55°C
+25°C
+100°C
MHz


In-Out Phase Drift vs. Temperature
deg
5
4
3
2
1
0
-1
-2
-3
-4
-5
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000
16000
17000
18000
19000
20000
-55°C Relative to +25°C
+100°C Relative to +25°C
MHz

WERBEL MICROWAVE LLC
628 State Route 10, Unit 14
Whippany, New Jersey 07981
Sales@WerbelMicrowave.com - www.WerbelMicrowave.com

Repeatability in Production

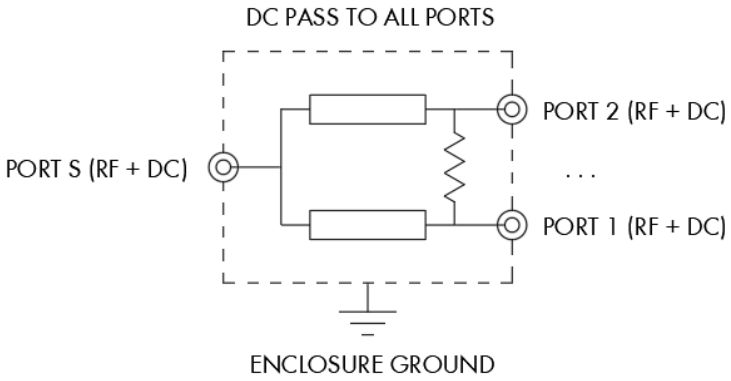




Typical Performance Data

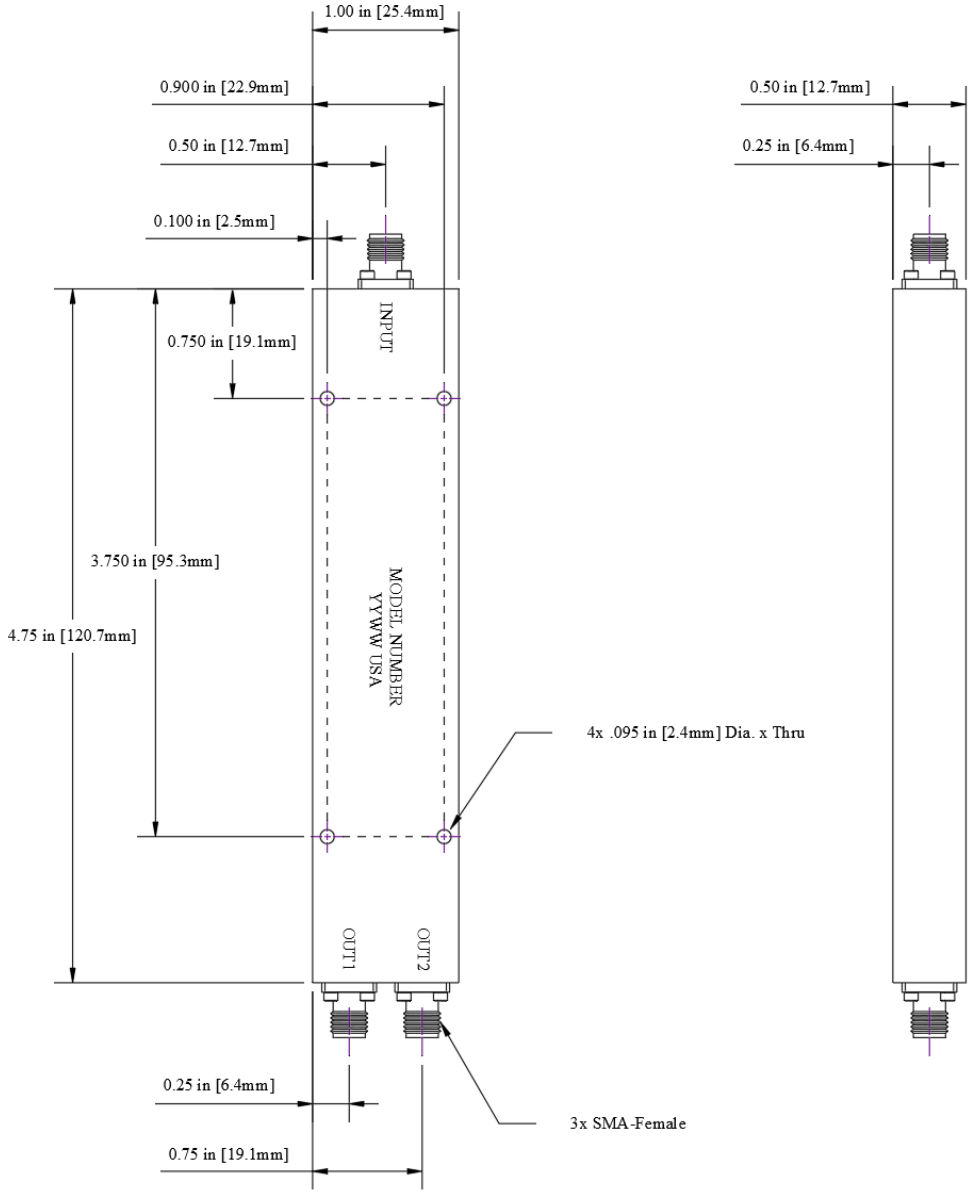
Frequency (MHz)	Return Loss (dB)			Total Loss (dB)		Isolation (dB)
	Port S	Port 1	Port 2	S-1	S-2	1-2
500	19.1	28.0	28.0	3.2	3.1	16.6
1000	20.5	23.4	23.7	3.2	3.2	31.4
1500	27.1	26.8	27.1	3.2	3.1	23.1
2000	28.5	22.4	22.2	3.2	3.3	21.6
2500	22.4	24.6	23.9	3.4	3.4	19.3
3000	24.6	27.3	26.7	3.2	3.2	19.7
3500	29.3	28.6	27.9	3.3	3.3	22.8
4000	22.9	37.6	39.6	3.3	3.3	23.4
4500	26.9	40.7	47.0	3.3	3.3	26.0
5000	27.0	30.0	28.7	3.3	3.3	25.0
5500	22.9	34.5	36.3	3.4	3.4	20.4
6000	25.8	25.4	27.2	3.5	3.5	21.2
6500	22.9	28.9	29.4	3.3	3.4	21.4
7000	23.8	27.2	28.5	3.5	3.5	21.8
7500	27.8	32.9	35.1	3.5	3.5	24.6
8000	23.8	47.9	35.3	3.5	3.5	25.1
8500	29.8	31.1	34.4	3.5	3.5	24.0
9000	26.4	29.0	30.8	3.4	3.4	20.0
9500	23.0	29.9	32.3	3.5	3.5	19.6
10000	32.6	27.0	31.2	3.6	3.6	24.2
10500	19.7	34.8	27.6	3.7	3.7	20.3
11000	20.0	31.7	25.1	3.6	3.6	22.6
11500	24.2	26.3	32.3	3.6	3.7	29.3
12000	17.7	25.5	31.2	3.9	3.8	20.1
12500	18.8	37.6	27.1	3.7	3.8	19.1
13000	25.3	35.0	29.0	3.7	3.7	21.5
13500	17.8	24.2	25.7	3.7	3.8	20.0
14000	19.1	23.3	23.3	3.9	3.9	23.0
14500	27.5	31.3	38.9	3.8	3.9	27.9
15000	17.4	28.6	30.7	3.9	4.0	20.2
15500	20.7	26.3	25.3	3.9	4.0	20.2
16000	32.0	20.9	19.3	3.9	4.0	19.9
16500	20.2	28.9	27.3	4.0	4.1	16.7
17000	23.8	22.2	23.5	4.0	4.1	24.6
17500	17.0	22.7	21.5	4.0	4.2	24.7
18000	15.3	20.4	18.1	4.1	4.3	19.3
18500	29.7	25.5	22.6	4.0	4.1	18.7
19000	17.5	16.3	16.4	4.5	4.6	20.7
19500	13.9	35.3	25.1	4.6	4.8	17.4
20000	21.4	19.2	22.0	4.3	4.4	23.0

Simplified Electrical Schematic



WERBEL MICROWAVE LLC
628 State Route 10, Unit 14
Whippany, New Jersey 07981
Sales@WerbelMicrowave.com - www.WerbelMicrowave.com

Outline Dimensions



Outline drawing: OL-2185
Dimensions are in inches, [mm] shown for convenience.
Tolerances on 2-pl decimals: ±.03. 3-pl decimals: ± .015.