WERBEL MICROWAVE LLC
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Power Divider, 2-way, 0.45-7.5GHz, SMA Female

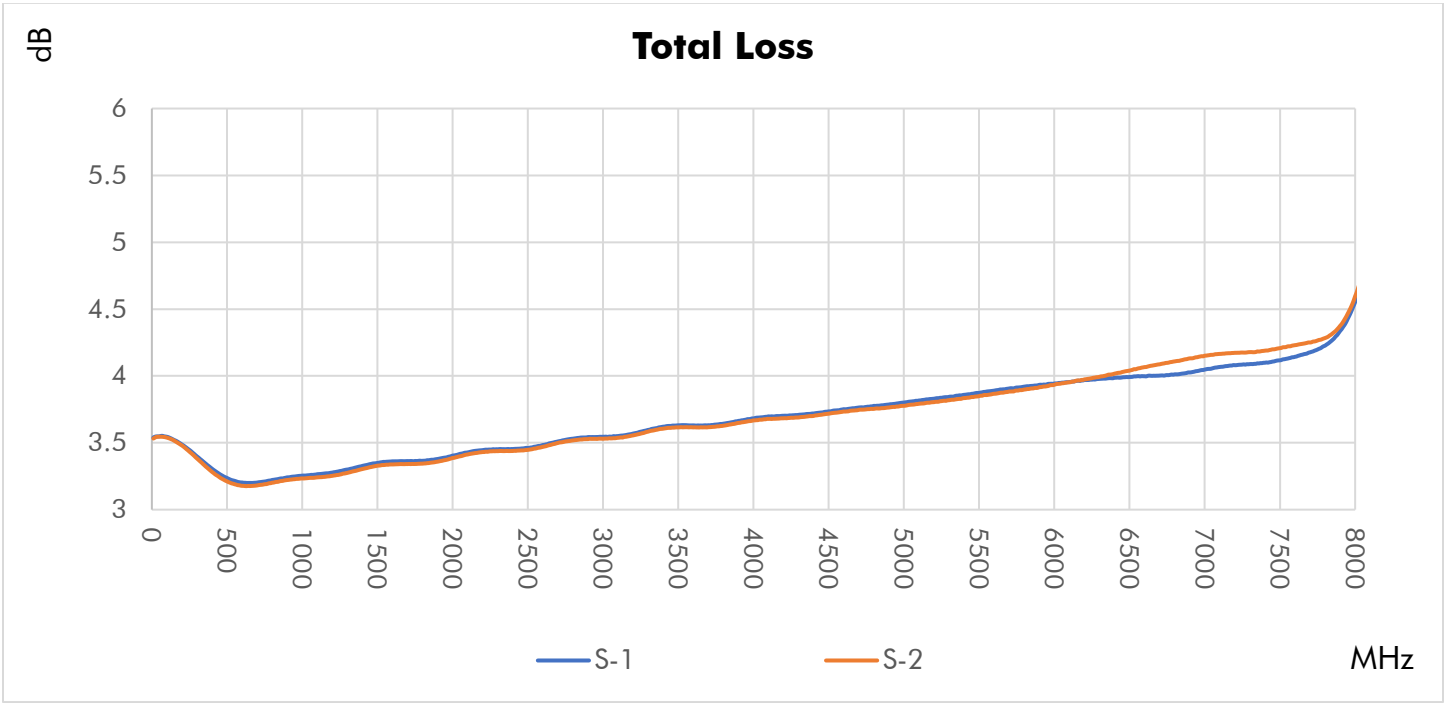
WM2PD-0.45-7.5-S

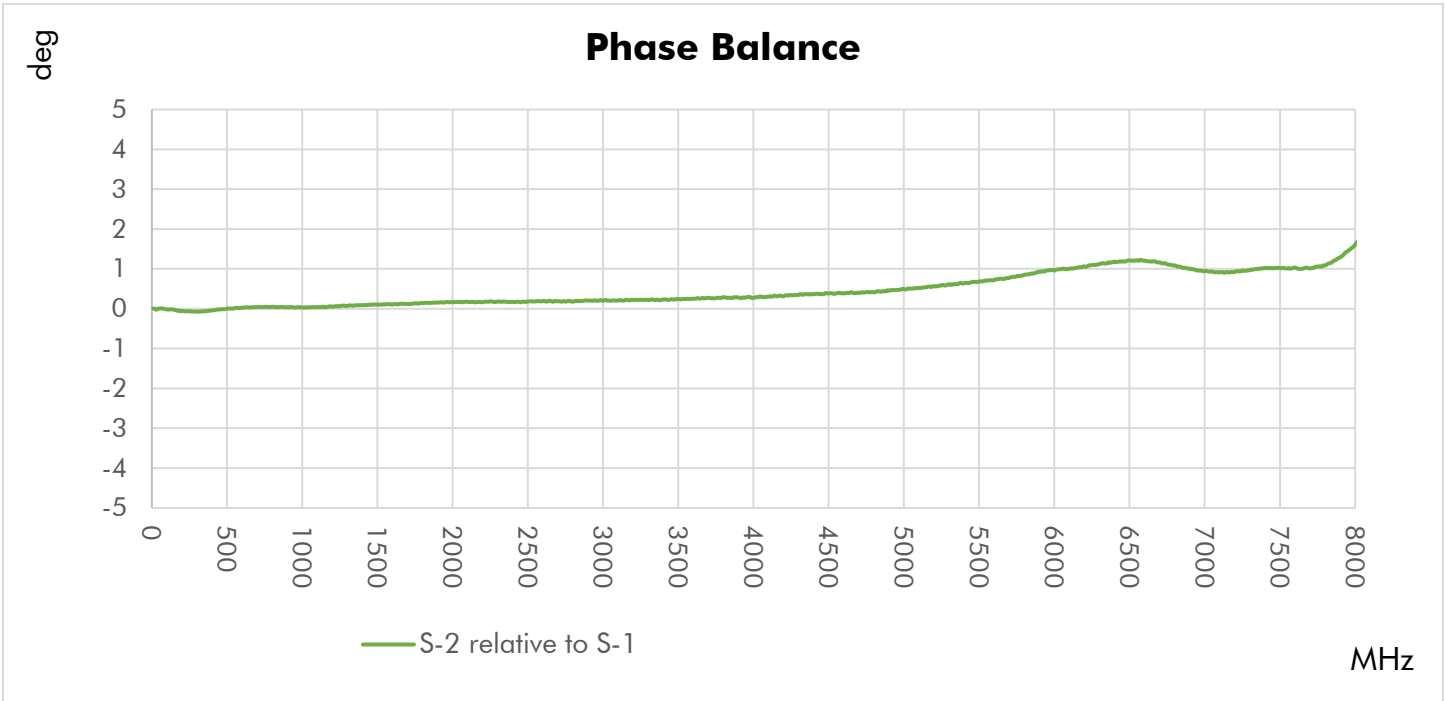
Parameter	Low Band	Mid Band	High Band	Unit
Frequency Range	450-550	550-4000	4000-7500	MHz
Impedance		50		Ω
Return Loss (Port S)	12	19	15	dB, min.
Return Loss (Port 1-2)	18	20	15	dB, min.
Insertion Loss above 3.01dB	0.4	0.8	1.3	dB, max.
Isolation	14	20	18	dB, min.
Amplitude Unbalance (±)[1]	0.1	0.3	0.6	dB, max.
Phase Unbalance (±)[1]	1	4	8	Degree, max.
Input Power (CW)[2]		30		W, max.
Combining Power (CW)[2]		0.5		W/port, max.
DC Current		0.35		A/port, max.

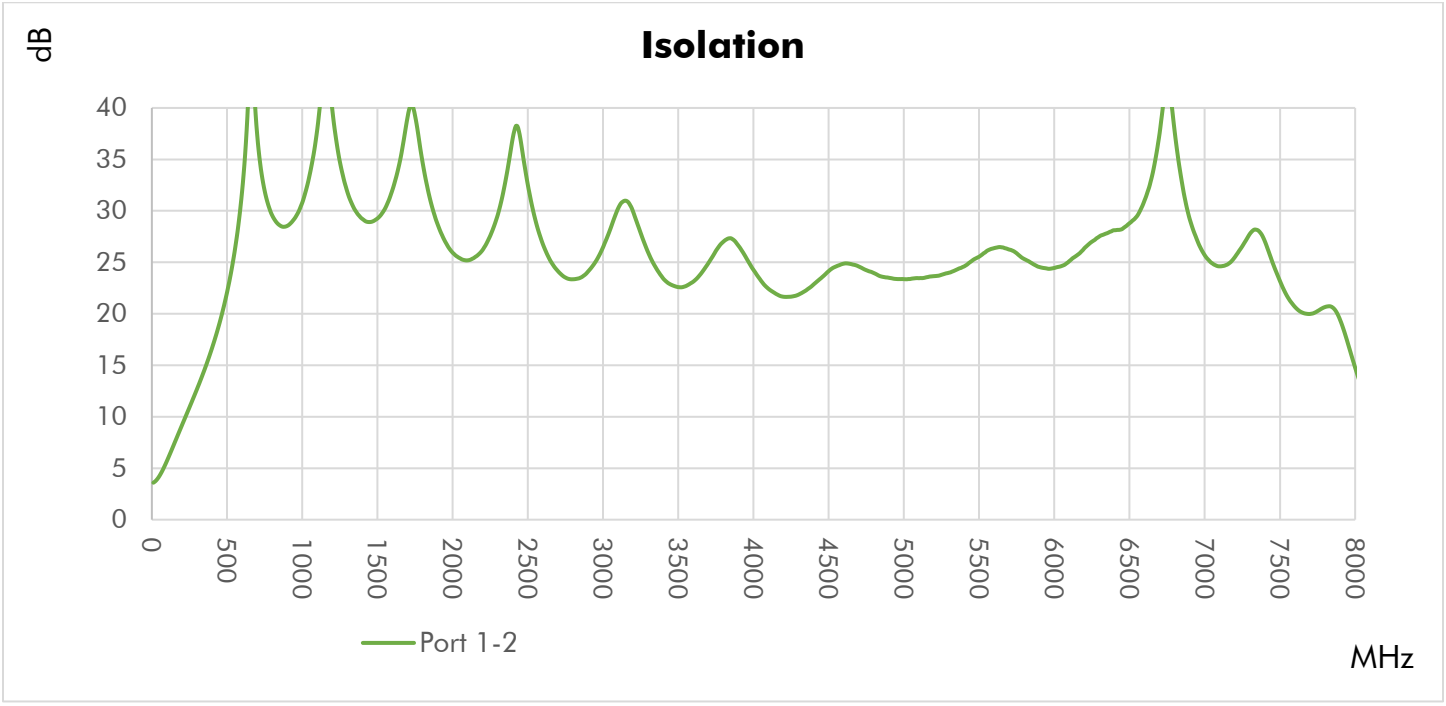
Connector Interface	SMA Female	RoHS Status[4]	RoHS3 Compliant
Operating Temperature[3]	-40 to +85 °C	REACH Status[4]	REACH Unaffected
Storage Temperature	-55 to +100 °C	Enclosure Material	Aluminum
Nominal Weight	85 g (3 oz)	Connectors Material	Brass, Gold Plated
Operating Humidity	10-90% (non-condensing)	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

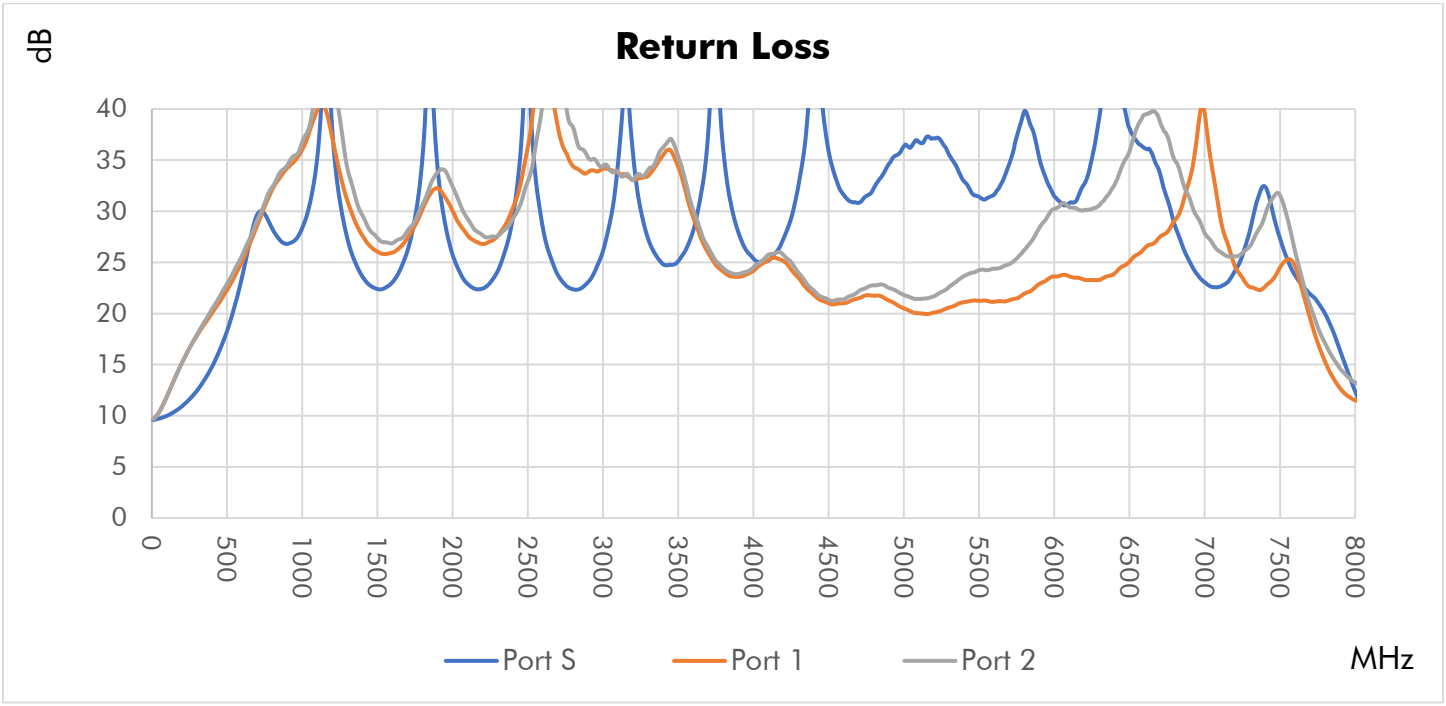
1. With reference to average.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications are tested at +25 °C.
4. To the best of our knowledge at the time of publication.

Typical Performance at +25 °C

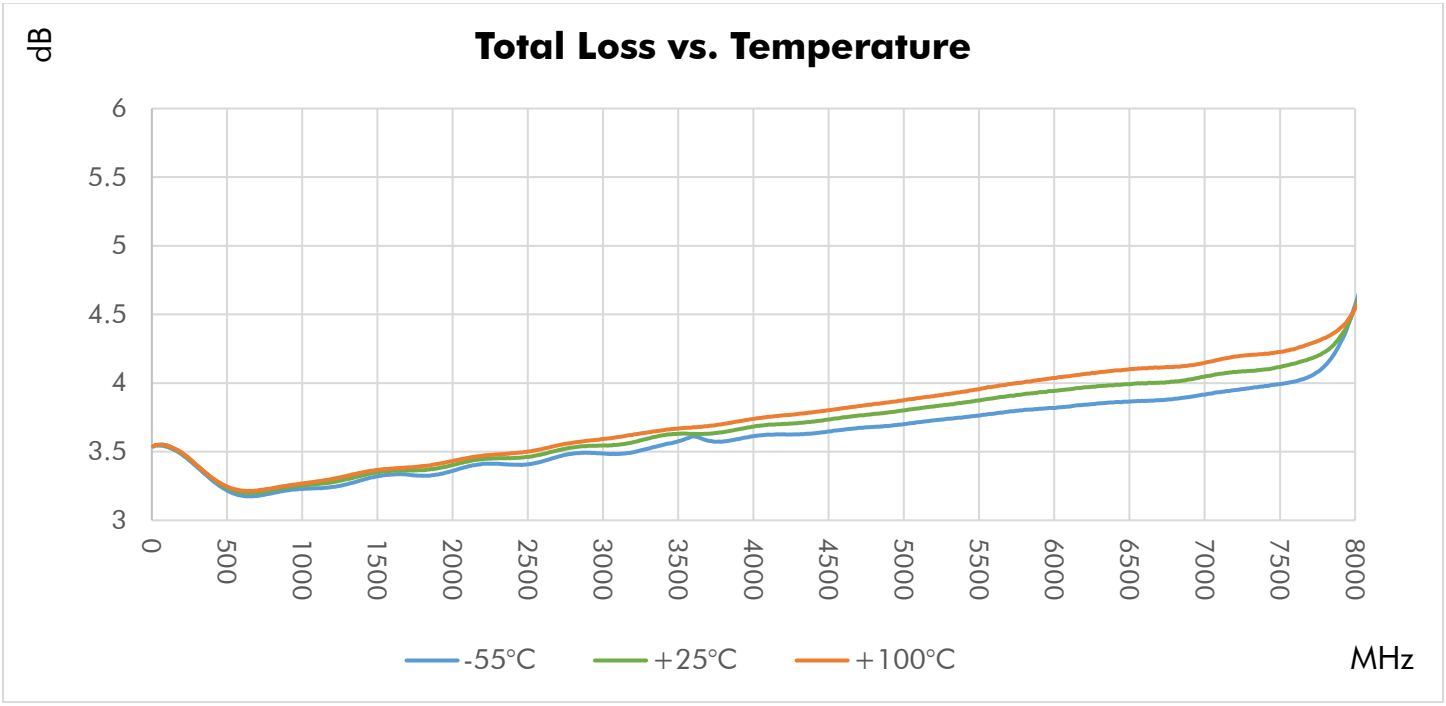


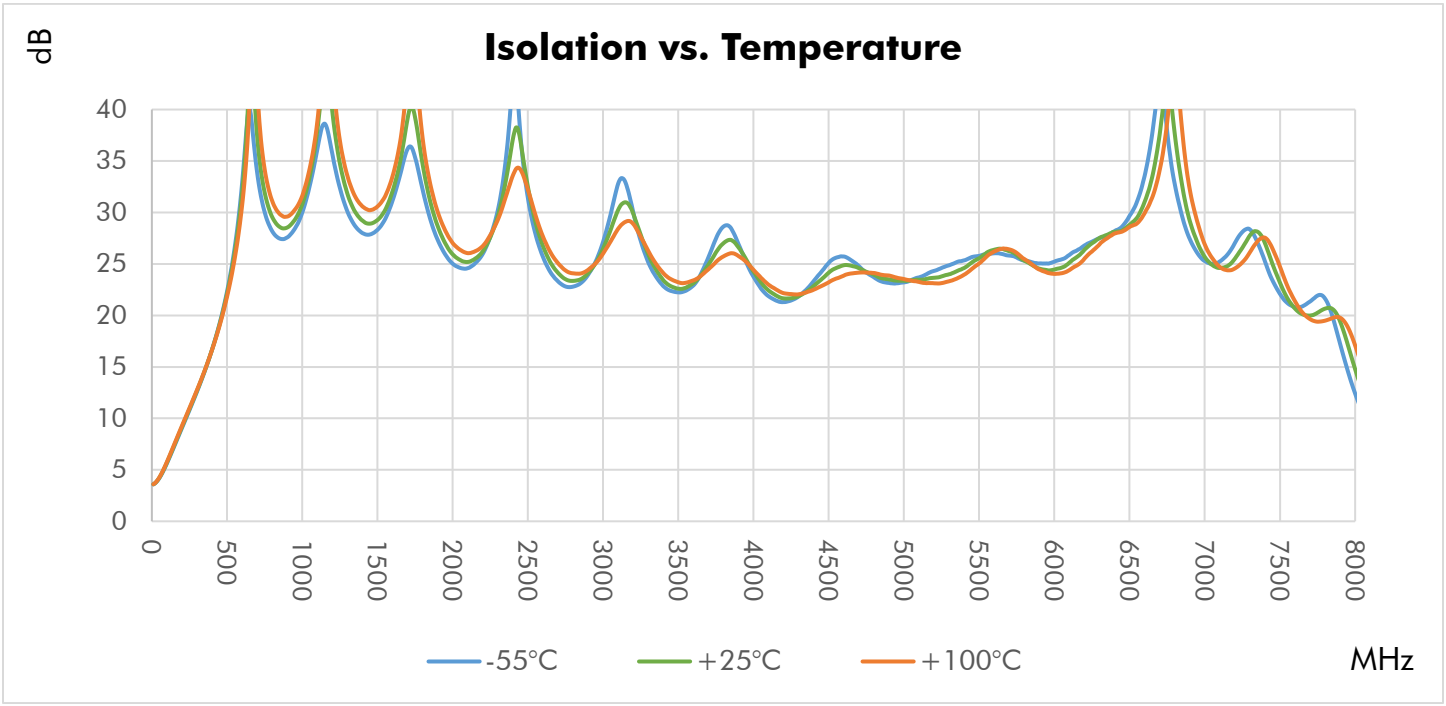


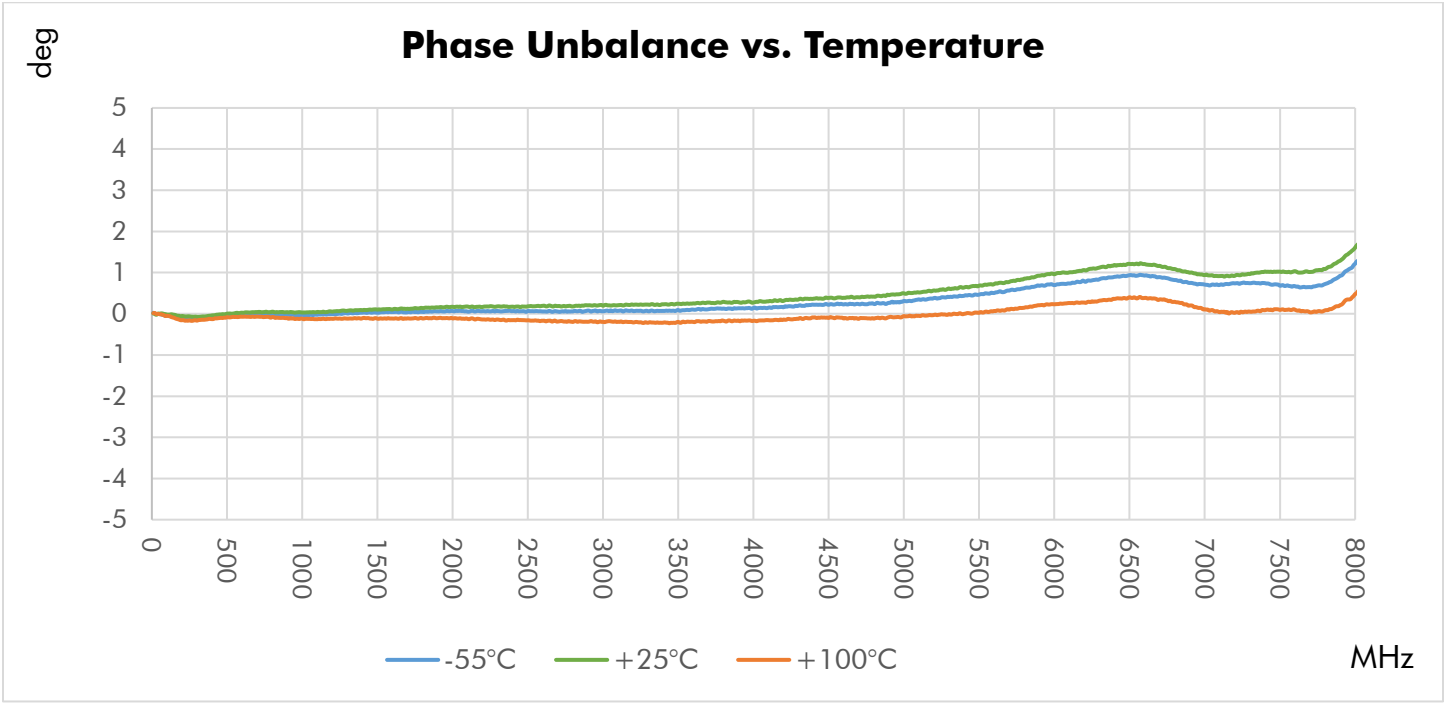

Isolation
dB
40
35
30
25
20
15
10
5
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500
8000
Port 1-2
MHz

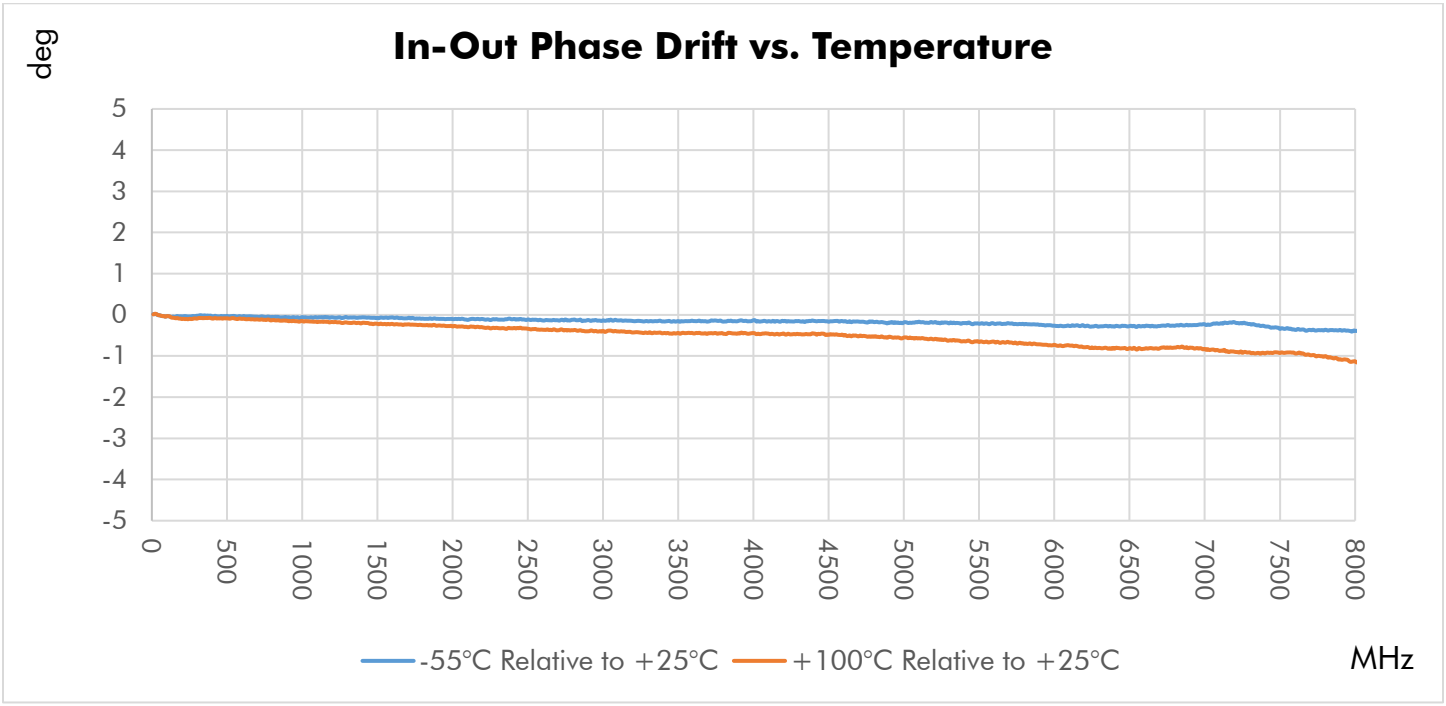

Return Loss
dB
40
35
30
25
20
15
10
5
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500
8000
Port S
Port 1
Port 2
MHz

Typical Performance Over Temperature



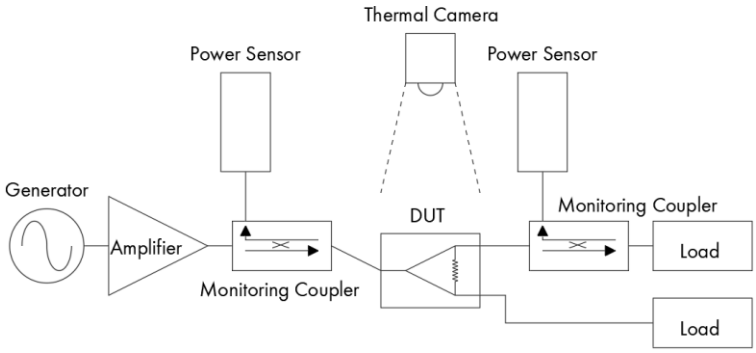



Phase Unbalance vs. Temperature
deg
5
4
3
2
1
0
-1
-2
-3
-4
-5
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500
8000
-55°C
+25°C
+100°C
MHz

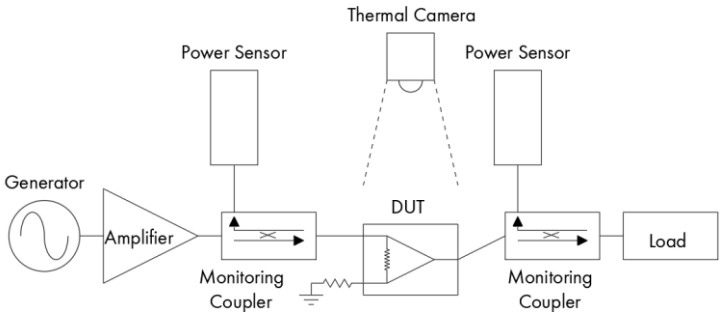
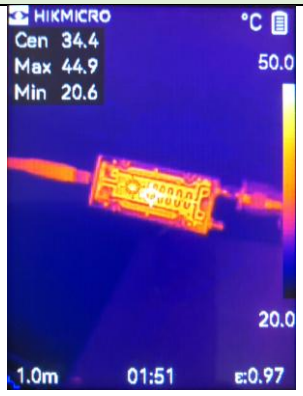

In-Out Phase Drift vs. Temperature
deg
5
4
3
2
1
0
-1
-2
-3
-4
-5
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500
8000
-55°C Relative to +25°C
+100°C Relative to +25°C
MHz

Reliability Testing

RF power test was performed to determine the input power required to produce a nominal temperature rise of 20°C at the hottest point. The test was performed at room temperature without forced air. A heatsink was not used unless it came standard with the product.

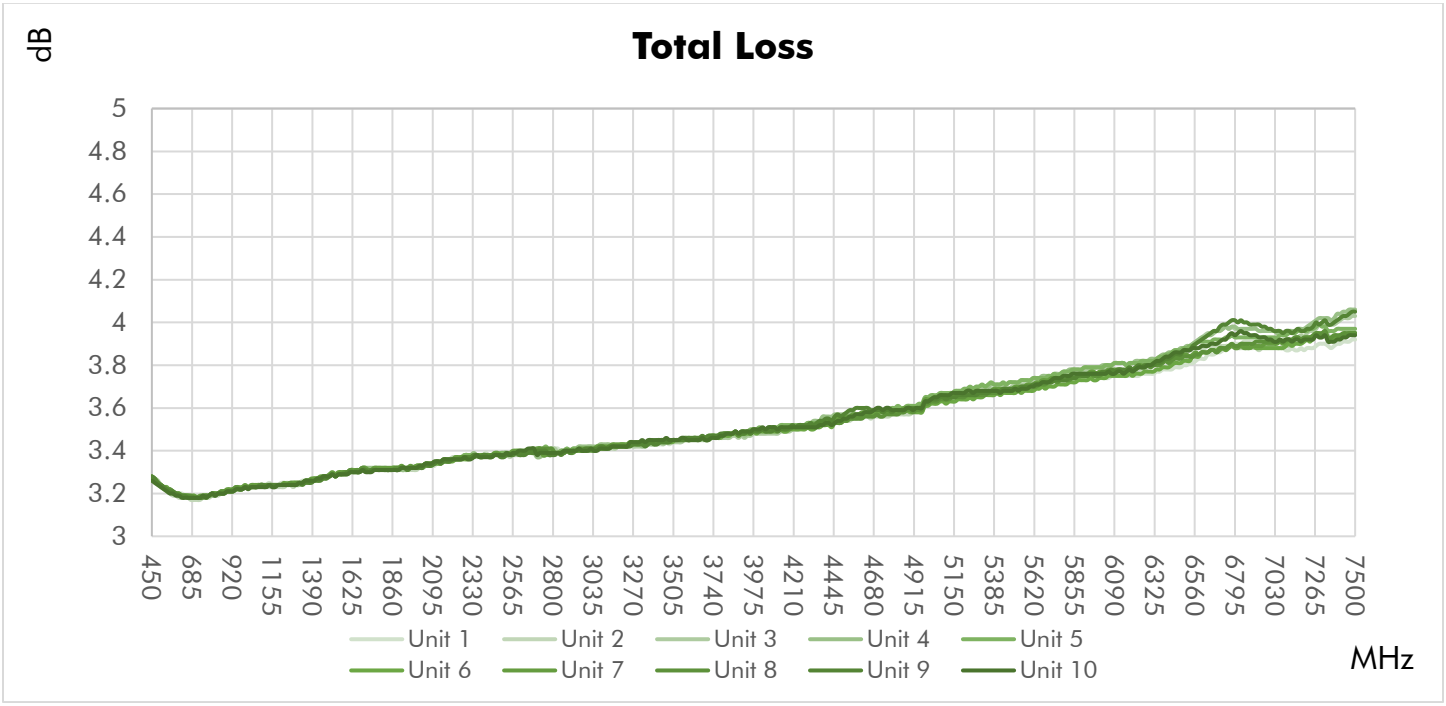
Forward Direction RF Power Test Setup Diagram	Initial Temperature	Final Temperature
		
	(RF power applied from the right)	(RF power applied from the right)

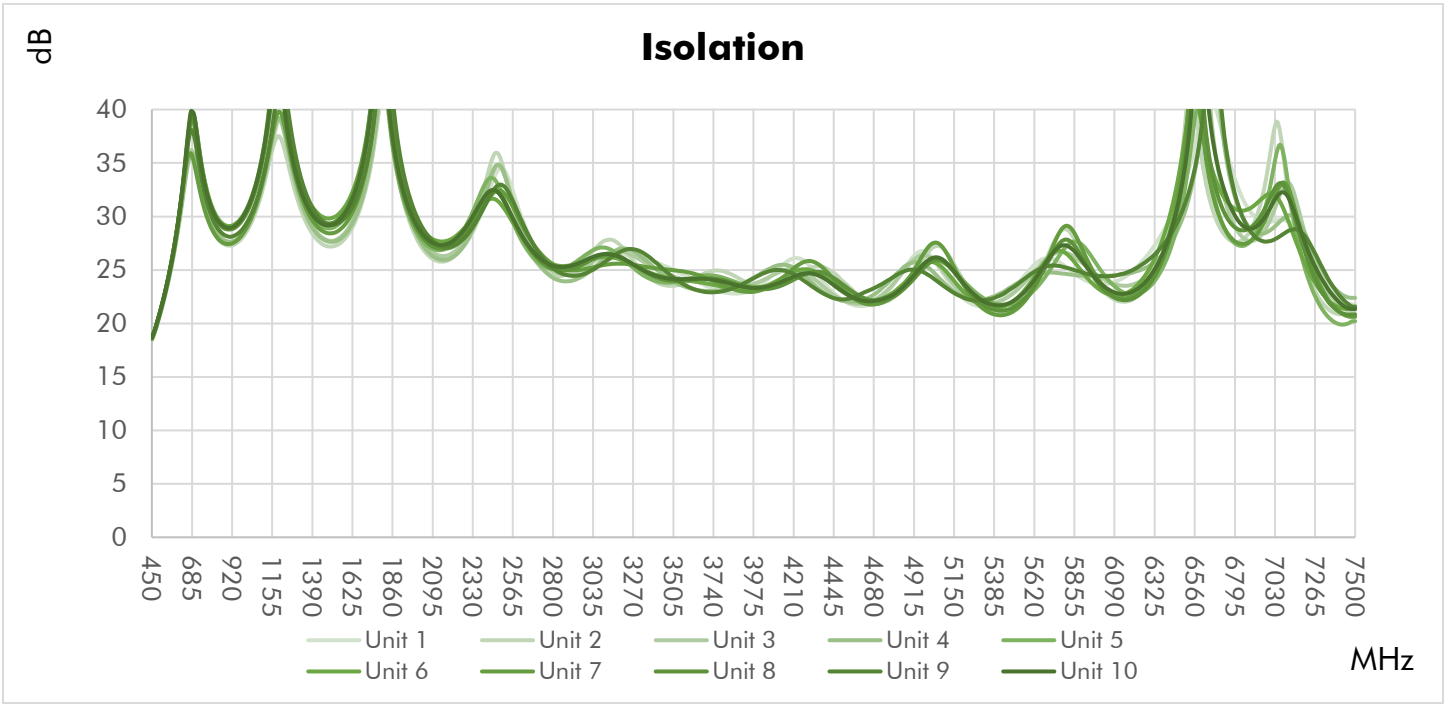
- 100 watts CW at 500MHz was applied to the DUT input for a duration of 10 minutes.
- The DUT temperature increased from 22.9°C (initial, center marker) to 45.5°C (final, max marker), resulting in a 22.6°C rise.

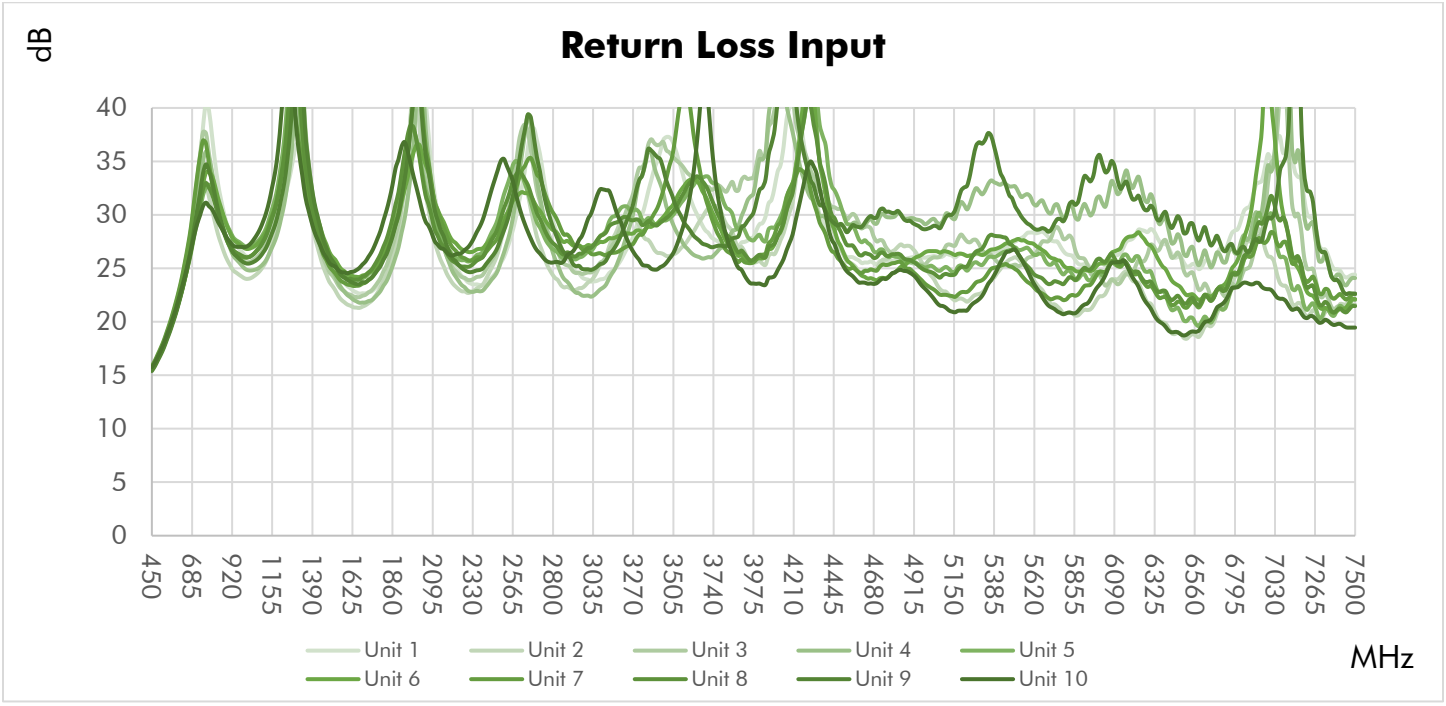
Reverse Direction RF Power Test Setup Diagram	Initial Temperature	Final Temperature
		
	(RF power applied from the right)	(RF power applied from the right)

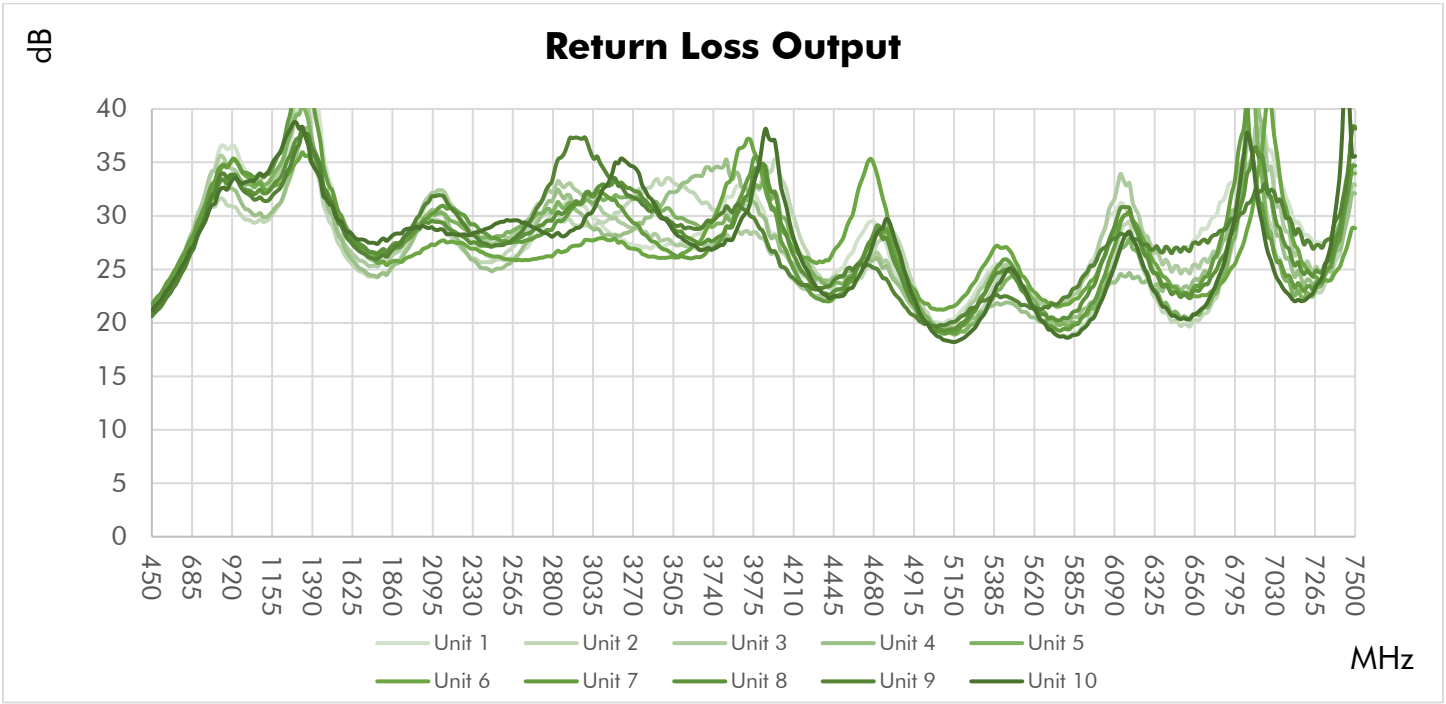
- 3 watts CW at 500MHz was applied to the DUT output for a duration of 10 minutes.
- The DUT temperature increased from 28.9°C (initial, center marker) to 44.9°C (final, max marker), resulting in a 16.0°C rise.

Repeatability in Production





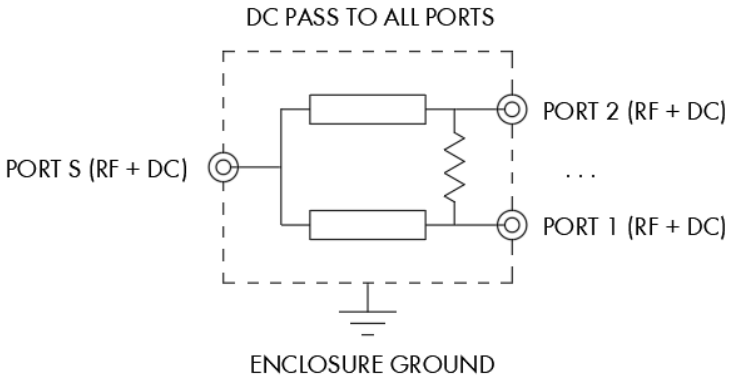

Return Loss Input
dB
40
35
30
25
20
15
10
5
0
450
685
920
1155
1390
1625
1860
2095
2330
2565
2800
3035
3270
3505
3740
3975
4210
4445
4680
4915
5150
5385
5620
5855
6090
6325
6560
6795
7030
7265
7500
MHz
Unit 1
Unit 2
Unit 3
Unit 4
Unit 5
Unit 6
Unit 7
Unit 8
Unit 9
Unit 10


Return Loss Output
dB
40
35
30
25
20
15
10
5
0
450
685
920
1155
1390
1625
1860
2095
2330
2565
2800
3035
3270
3505
3740
3975
4210
4445
4680
4915
5150
5385
5620
5855
6090
6325
6560
6795
7030
7265
7500
MHz
Unit 1
Unit 2
Unit 3
Unit 4
Unit 5
Unit 6
Unit 7
Unit 8
Unit 9
Unit 10

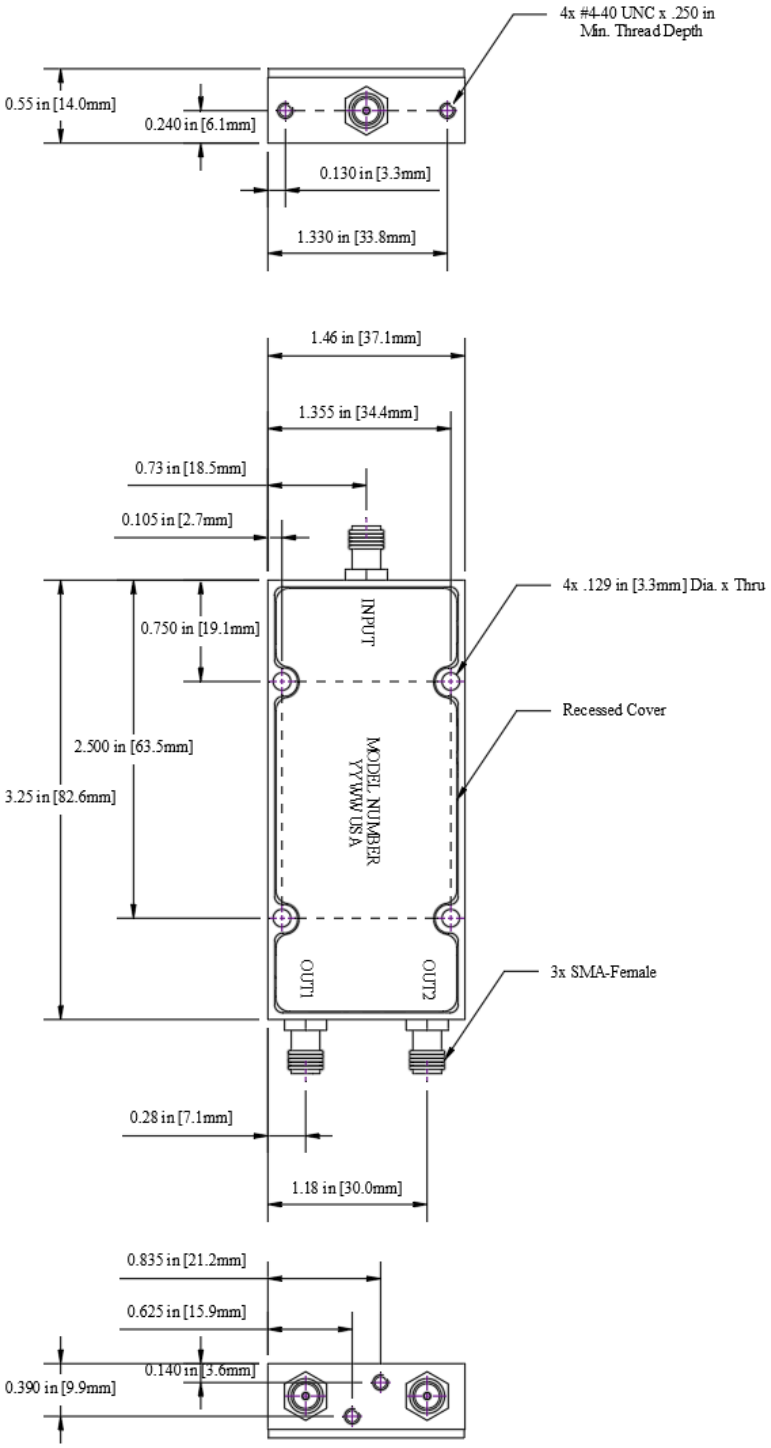
Typical Performance Data

Frequency (MHz)	Return Loss (dB)			Total Loss (dB)		Isolation (dB)
	Port S	Port 1	Port 2	S-1	S-2	1-2
440	15.5	21.4	21.3	3.3	3.3	18.1
798	33.4	32.1	31.9	3.2	3.2	30.0
1156	31.7	34.6	34.5	3.2	3.2	42.7
1514	24.5	30.7	31.4	3.3	3.3	28.7
1872	30.7	26.9	27.2	3.3	3.3	36.1
2230	25.2	28.1	28.6	3.3	3.3	28.3
2588	33.7	28.2	28.0	3.4	3.4	28.5
2946	25.6	30.2	28.6	3.4	3.4	26.1
3304	28.8	31.7	28.7	3.4	3.5	24.7
3662	41.4	26.3	25.1	3.5	3.5	24.9
4020	26.3	29.4	28.5	3.5	3.6	22.8
4378	30.8	21.1	21.0	3.6	3.6	25.5
4736	24.1	25.1	25.5	3.7	3.7	21.7
5094	22.9	18.0	18.2	3.7	3.7	26.9
5452	24.9	24.6	26.4	3.8	3.7	21.4
5810	23.8	20.4	20.9	3.8	3.7	28.0
6168	23.6	31.4	39.0	3.7	3.7	23.0
6526	22.5	23.2	22.5	3.8	3.8	43.0
6884	30.8	33.9	30.5	3.8	3.9	29.8
7242	22.5	25.2	24.2	3.8	3.9	24.8
7600	24.4	29.7	31.8	3.9	4.0	22.3

Simplified Electrical Schematic



Outline Dimensions



Outline drawing: OL-2074
Dimensions are in inches, [mm] shown for convenience.
Tolerances on 2-pl decimals: ±.03. 3-pl decimals: ± .015.

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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.