**WERBEL MICROWAVE LLC**
19 West Street, Unit A
East Hanover, N.J. 07936
www.WerbelMicrowave.com

## Power Divider, 2-way, 5-500 MHz, BNC Female

## WM2PD-5-500M-B




Designed for broadband signal distribution from 5 to 500 MHz, this 2-way power divider is well suited for communications, test and measurement, laboratory, and general RF distribution applications. Its wide operating bandwidth, good port-to-port isolation, and controlled amplitude and phase balance make it a practical choice for splitting signals between matched 50 Ω signal paths. Typical applications include receiver and transmitter systems, instrumentation, signal monitoring, antenna distribution, and other low-power RF systems requiring consistent division across a broad frequency range.

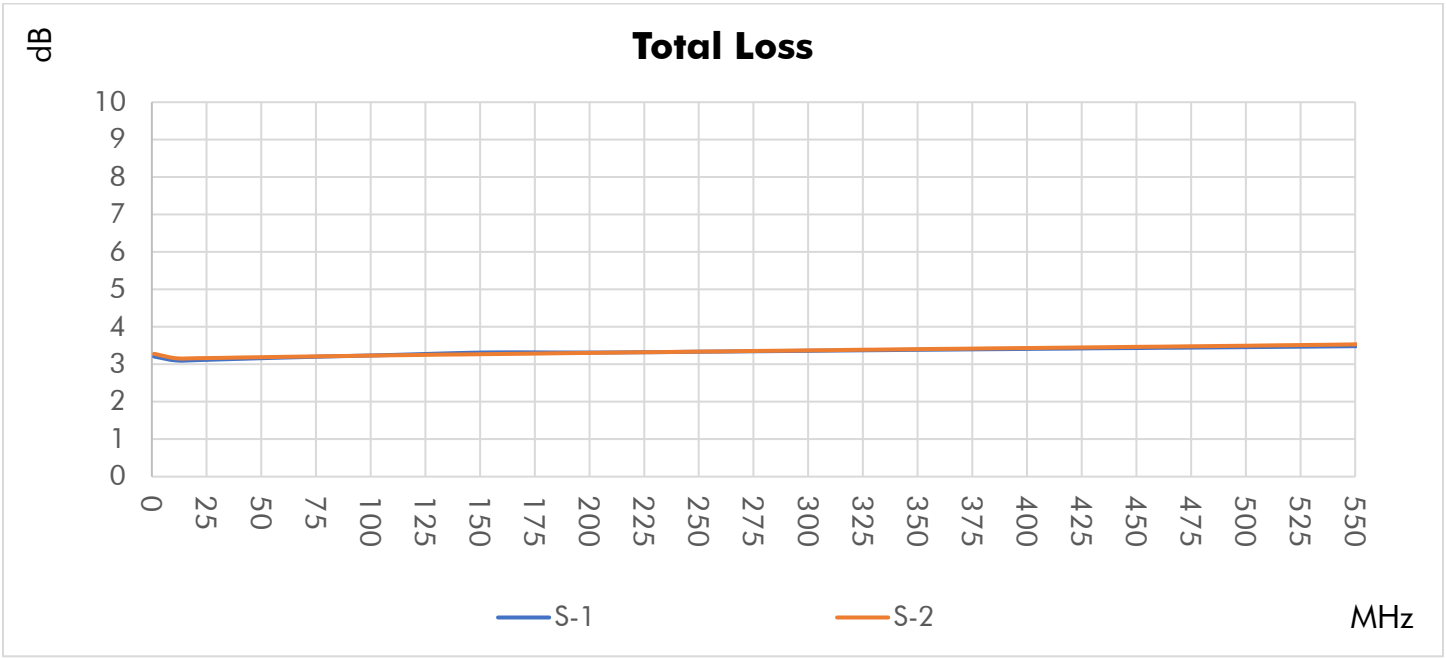
| Parameter | Min | Typ. | Max | Unit |
|---|---|---|---|---|
| Frequency Range | 5 | | 500 | MHz |
| Impedance | | 50 | | Ω |
| Return Loss (Port S) | 10.9 | 19.0 | | dB, min. |
| Return Loss (Port 1-2) | 12.7 | 22.5 | | dB, min. |
| Insertion Loss (above 3.0 dB) | | 0.3 | 1.2 | dB, max. |
| Isolation | 18 | 23.0 | | dB, min. |
| Amplitude Unbalance (±)[1] | | 0.02 | 0.9 | dB, max. |
| Phase Unbalance (±)[1] | | 0.4 | 4 | Degree, max. |
| Input Power (CW)[2] | | | 1 | W, max. |

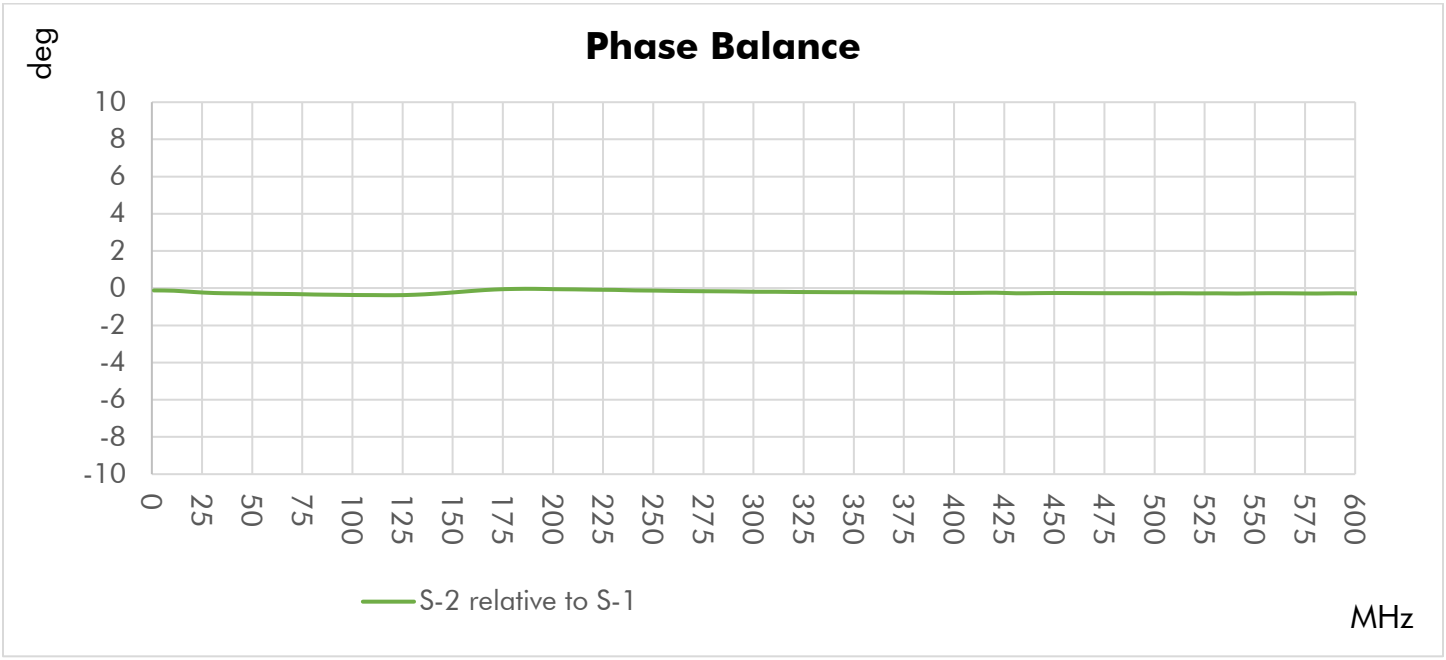
## Mechanical and Environmental Specifications

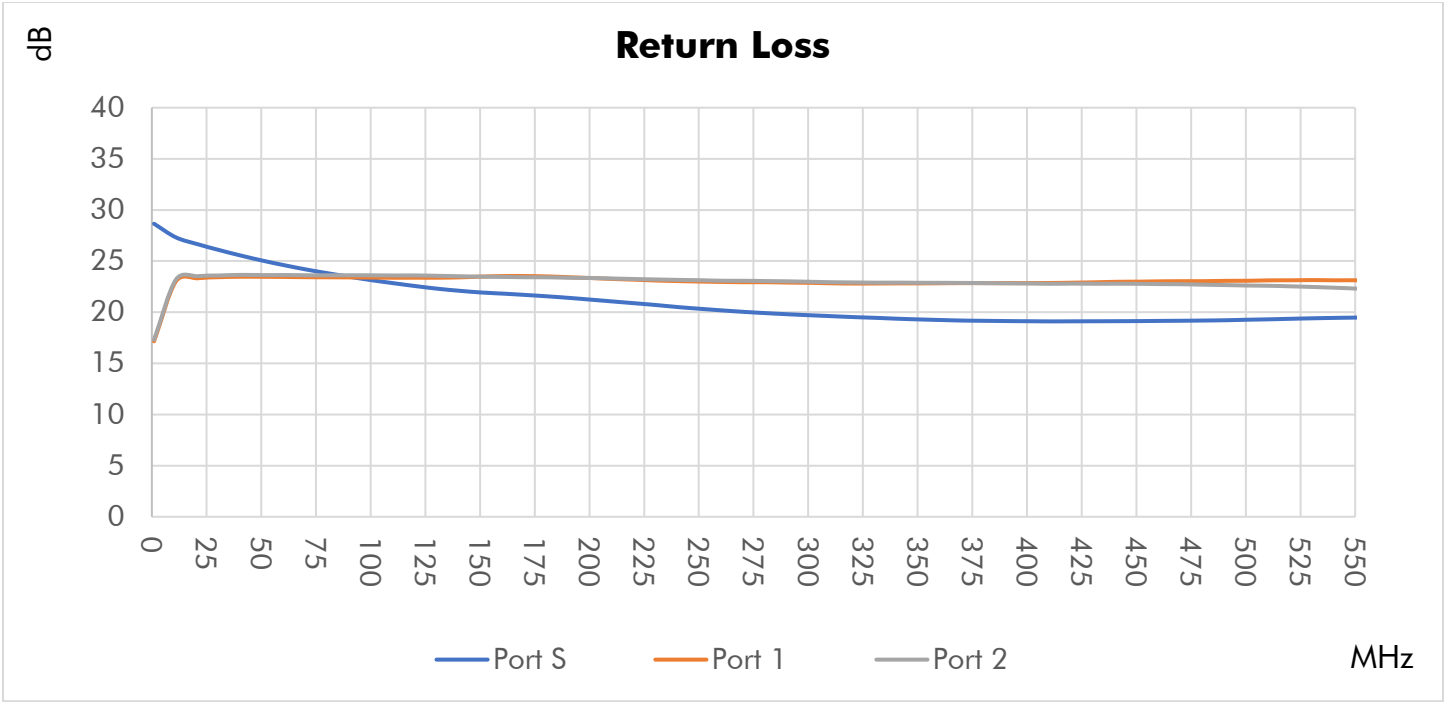
| | | | |
|---|---|---|---|
| Connector Interface | BNC Female | RoHS Status[4] | RoHS3 Compliant |
| Operating Temperature[3] | -55 to +85 °C | REACH Status[4] | REACH Unaffected |
| Storage Temperature | -55 to +100 °C | Enclosure Material | Aluminum |
| Nominal Weight | 93 g (3.2 oz) | Connectors Material | Brass, Tri-Alloy Plating |
| 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 |

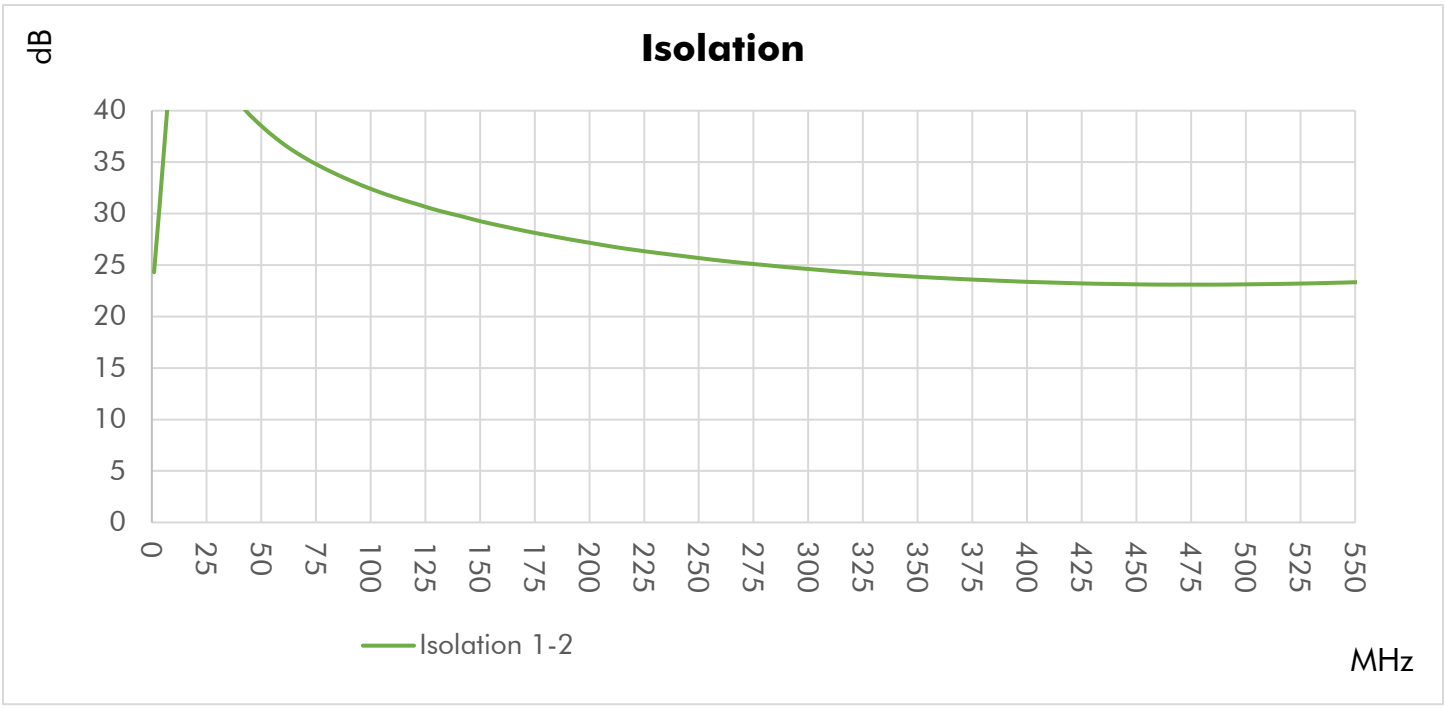
1. With reference to average.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications are tested at +25 °C.
4. To the best of our knowledge at the time of publication.

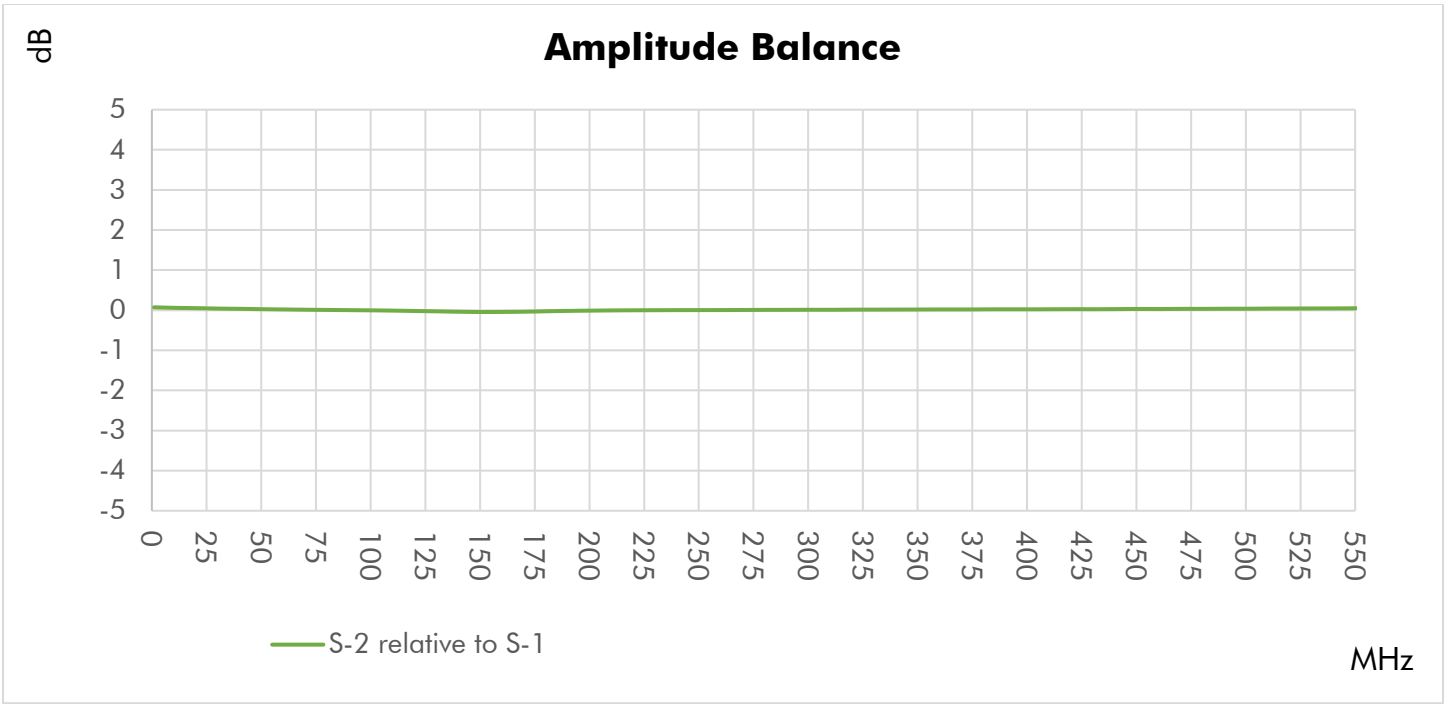
## Typical Performance at +25 °C



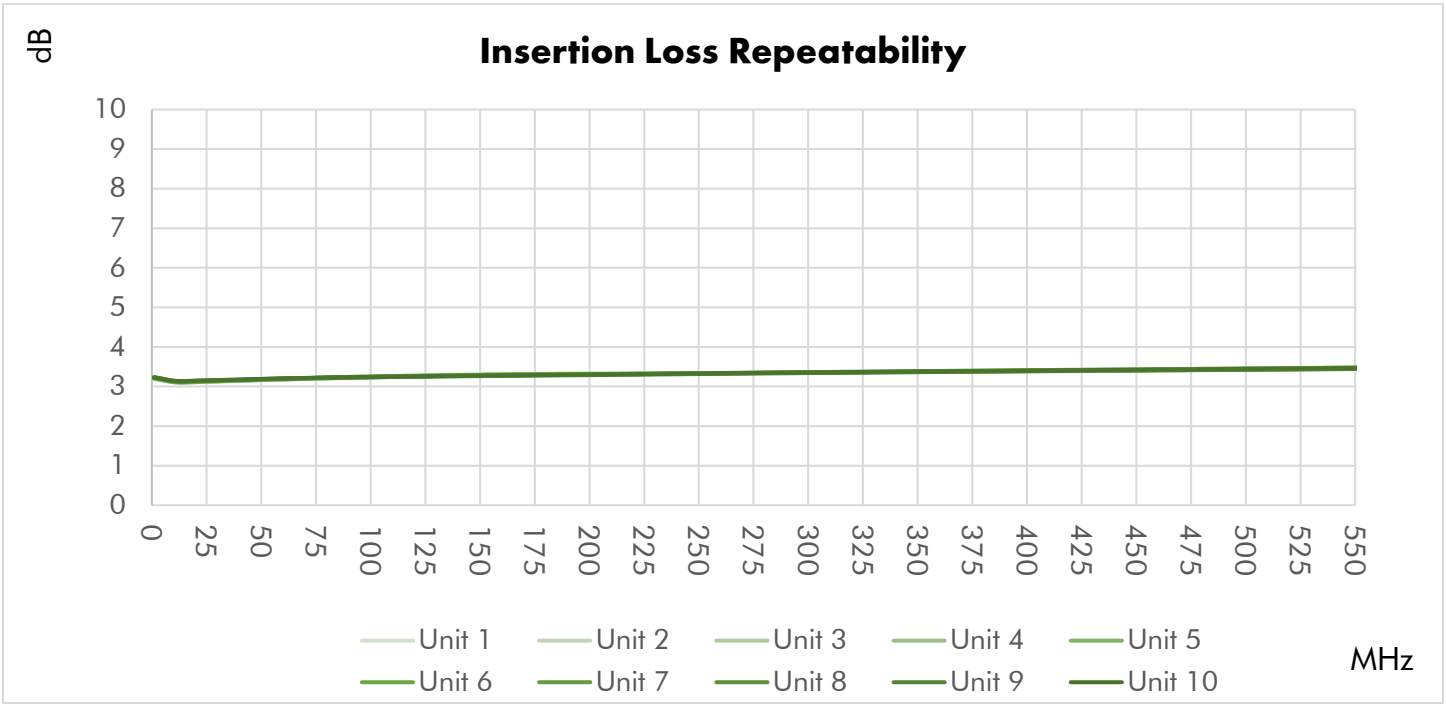



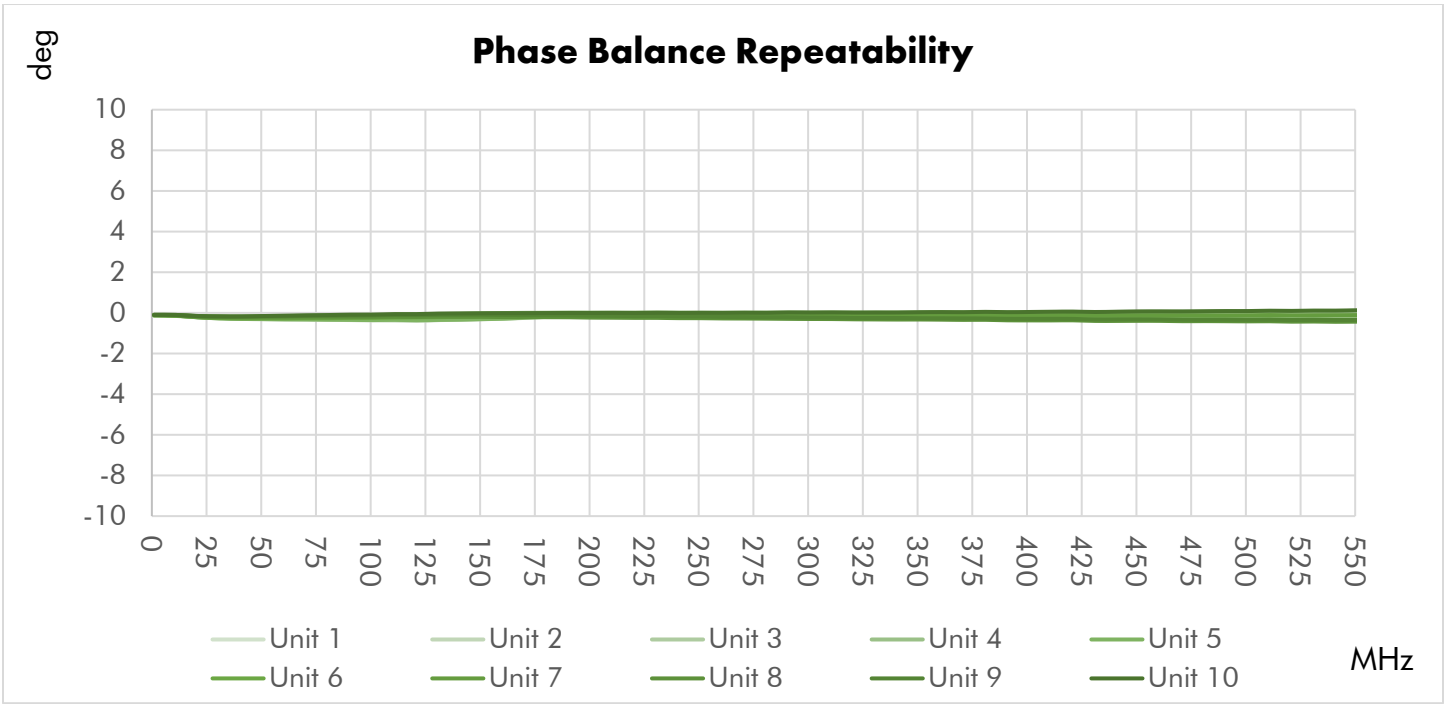

Return Loss
dB
40
35
30
25
20
15
10
5
0
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
Port S
Port 1
Port 2
MHz

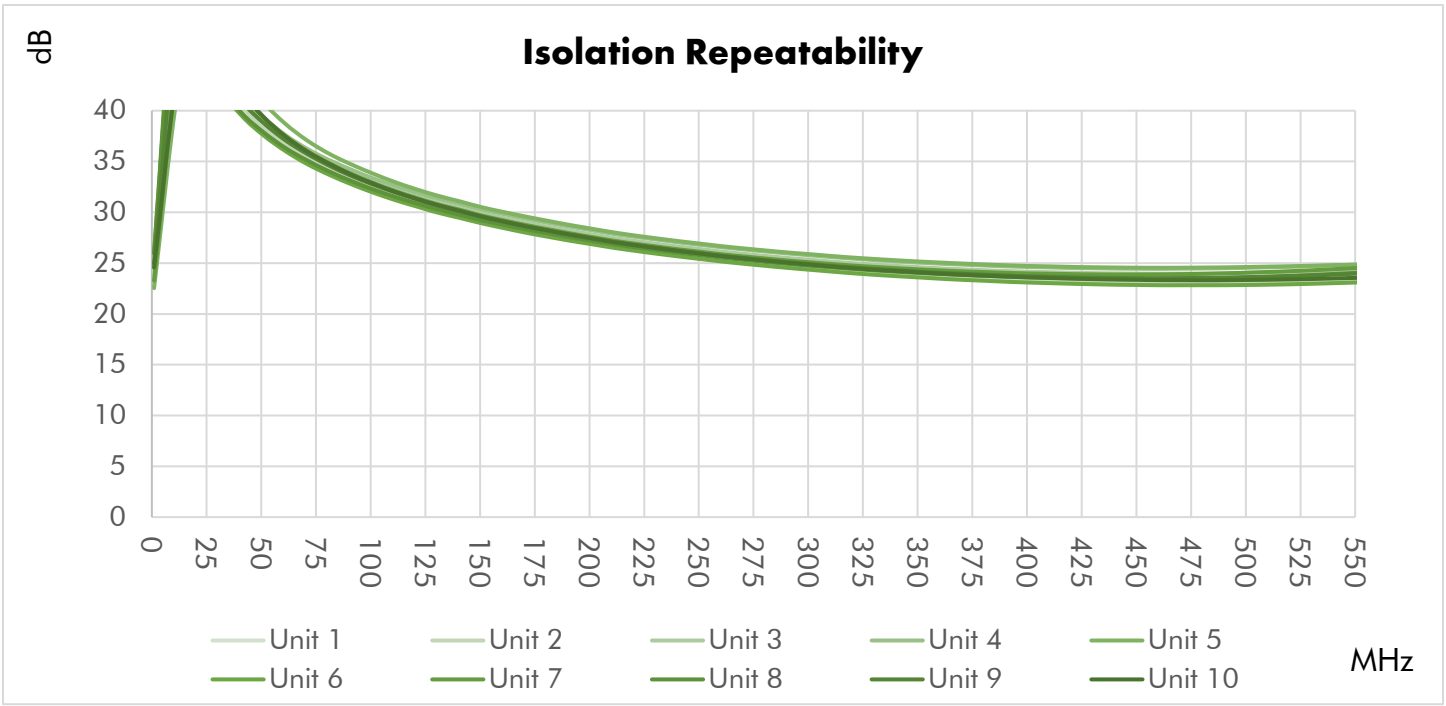

Isolation
dB
40
35
30
25
20
15
10
5
0
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
Isolation 1-2
MHz

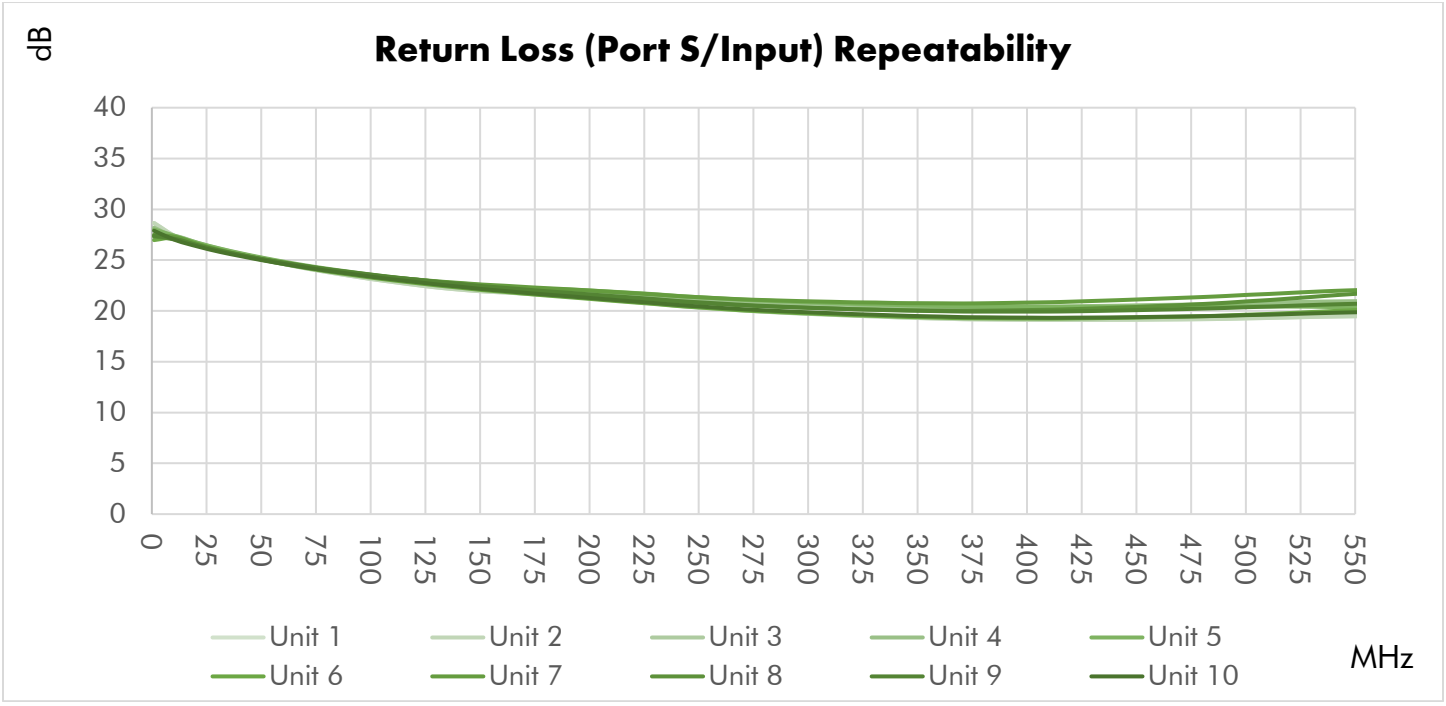


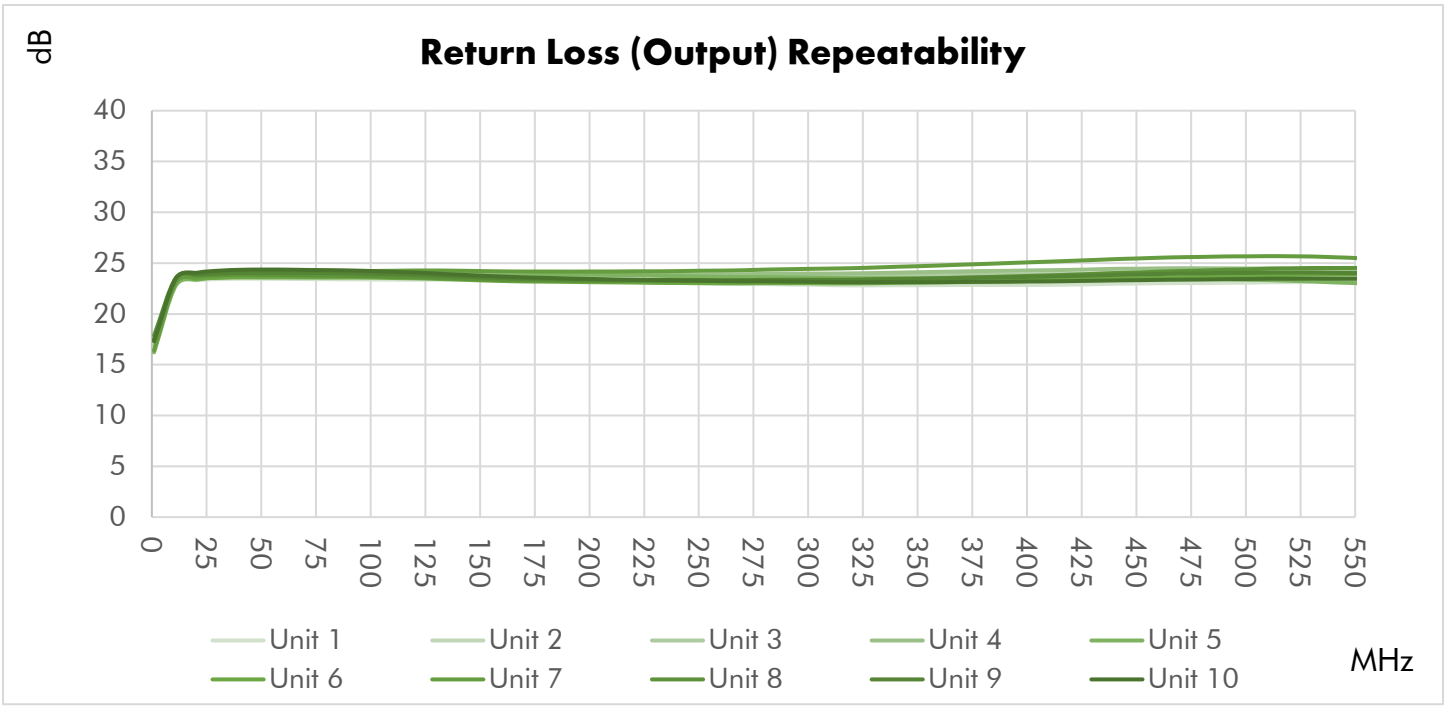

## Repeatability in Production



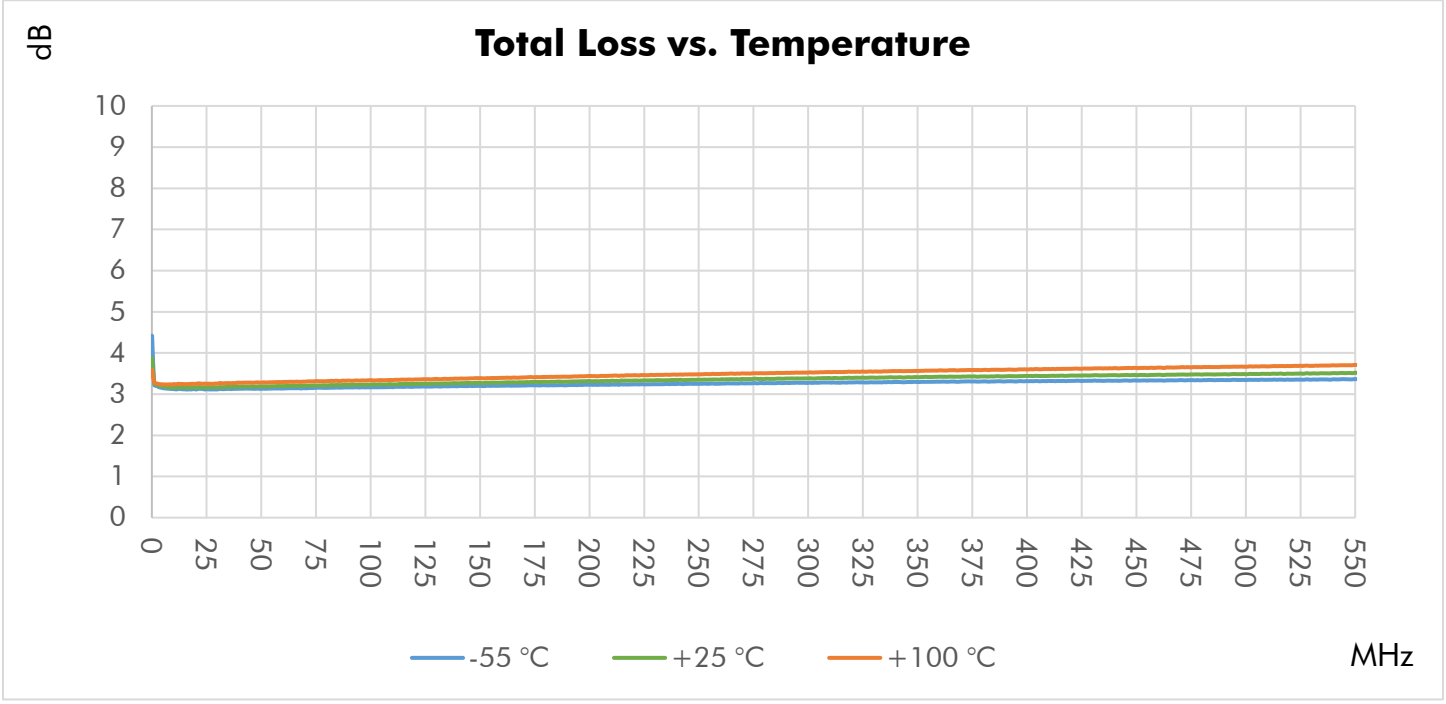

Phase Balance Repeatability
deg
10
8
6
4
2
0
-2
-4
-6
-8
-10
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
Unit 1
Unit 2
Unit 3
Unit 4
Unit 5
Unit 6
Unit 7
Unit 8
Unit 9
Unit 10
MHz

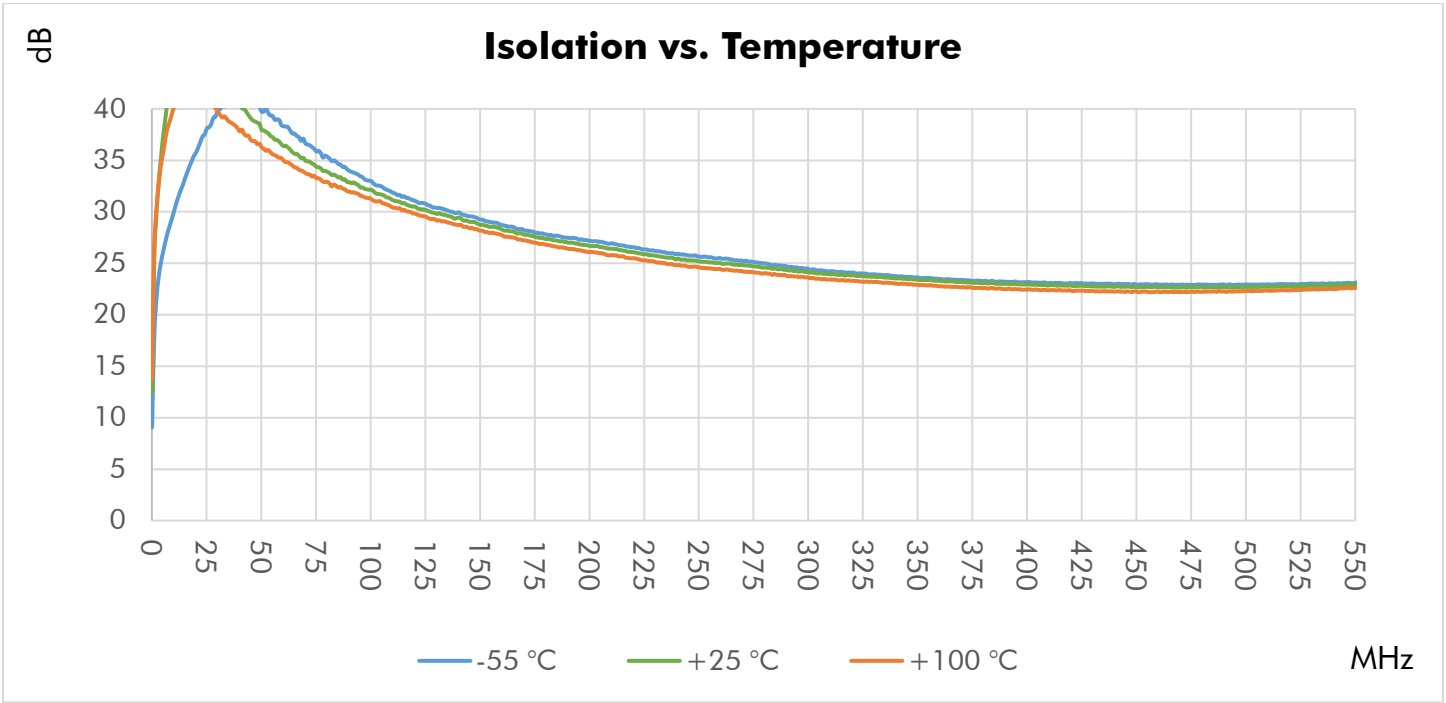

Isolation Repeatability
dB
40
35
30
25
20
15
10
5
0
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
Unit 1
Unit 2
Unit 3
Unit 4
Unit 5
Unit 6
Unit 7
Unit 8
Unit 9
Unit 10
MHz

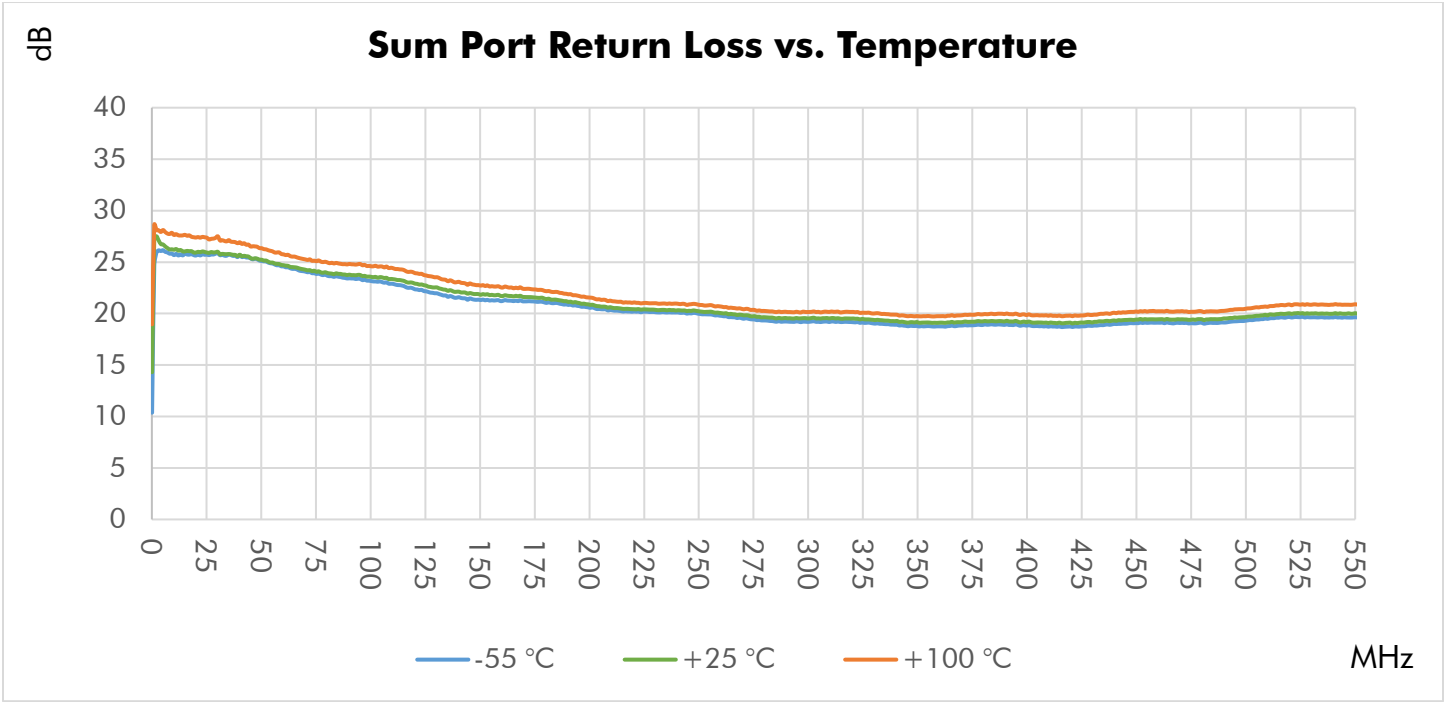

Return Loss (Port S/Input) Repeatability
dB
40
35
30
25
20
15
10
5
0
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
Unit 1
Unit 2
Unit 3
Unit 4
Unit 5
Unit 6
Unit 7
Unit 8
Unit 9
Unit 10
MHz

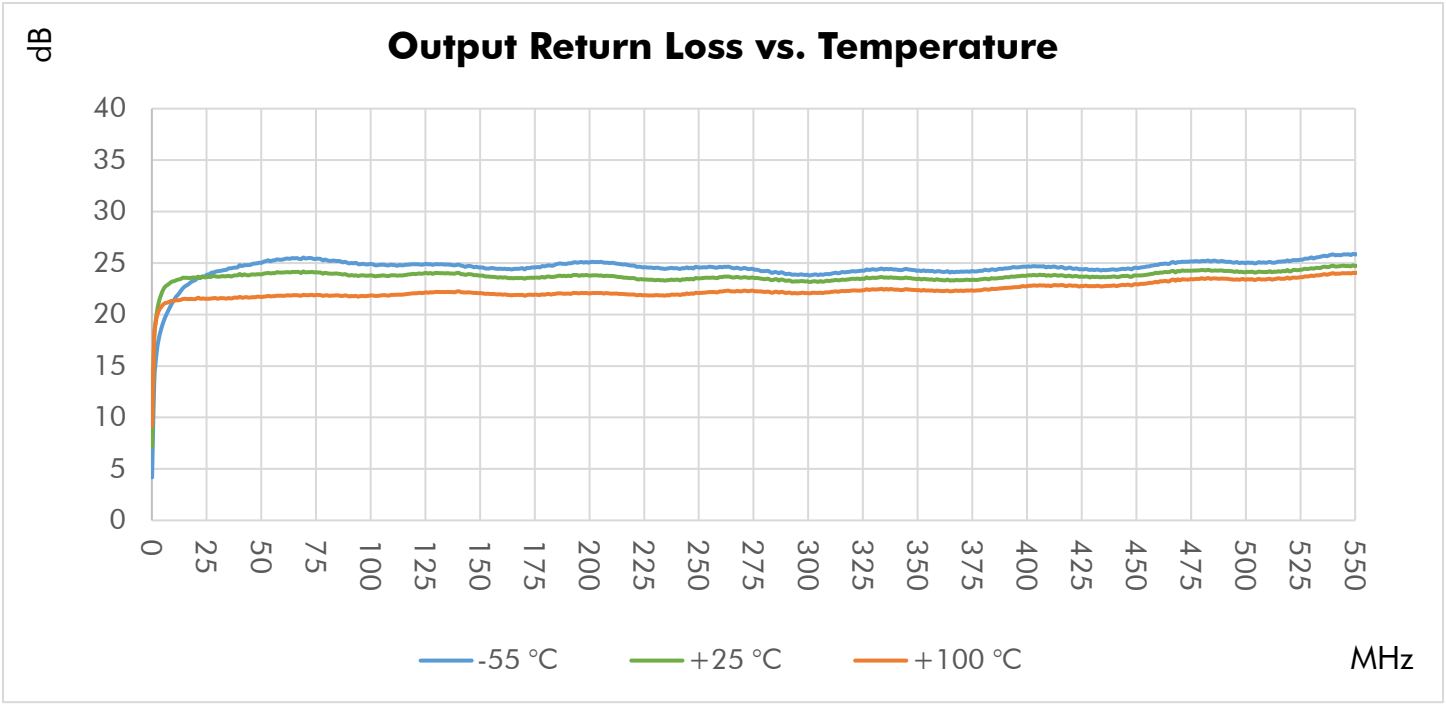

Return Loss (Output) Repeatability
dB
40
35
30
25
20
15
10
5
0
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
Unit 1
Unit 2
Unit 3
Unit 4
Unit 5
Unit 6
Unit 7
Unit 8
Unit 9
Unit 10
MHz

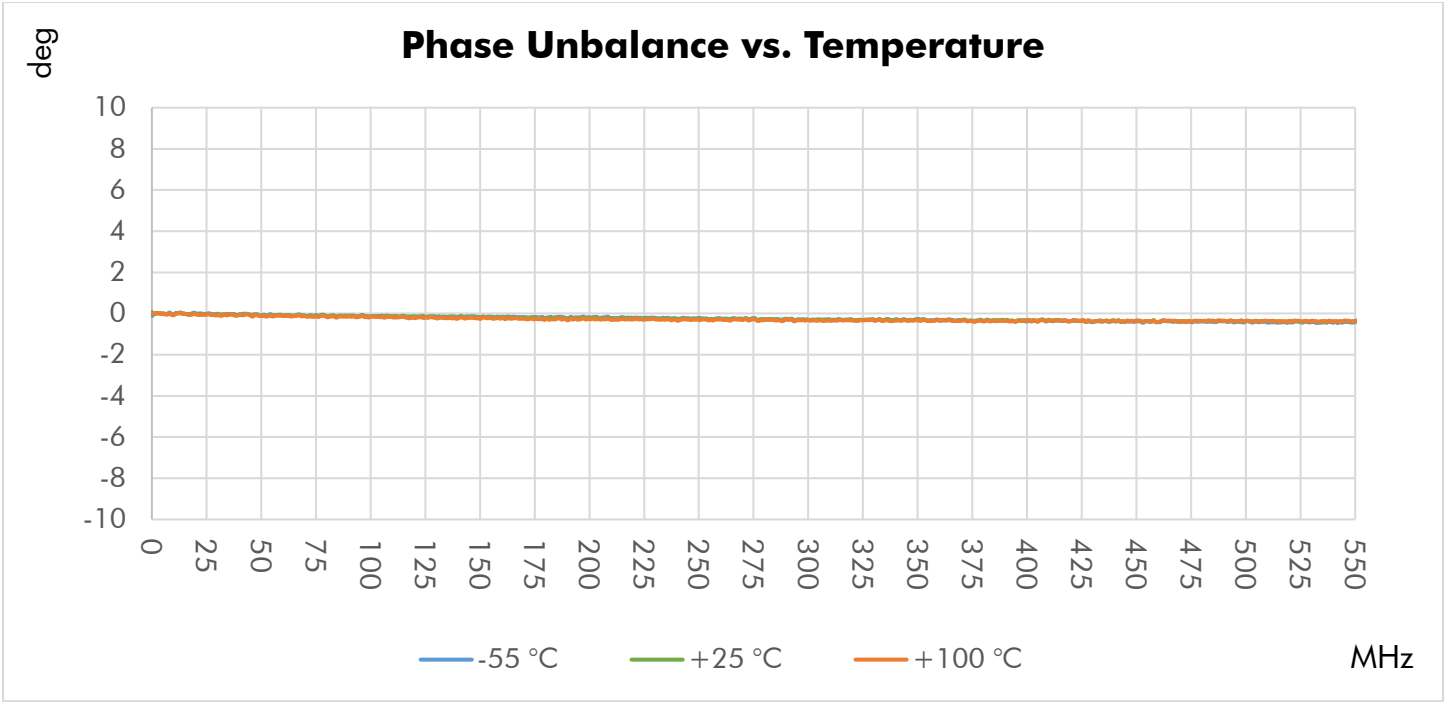
## Typical Performance Over Temperature

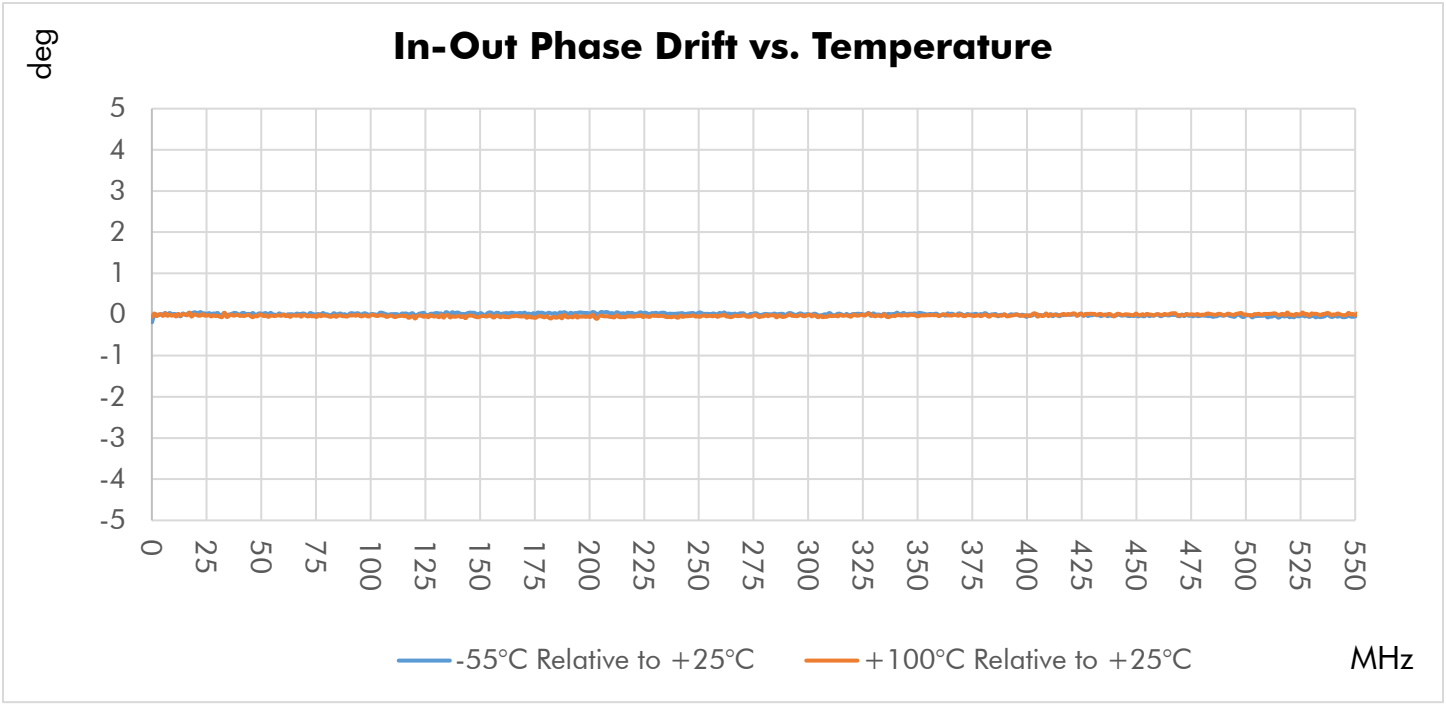



Sum Port Return Loss vs. Temperature
dB
40
35
30
25
20
15
10
5
0
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
-55 °C
+25 °C
+100 °C
MHz


Output Return Loss vs. Temperature
dB
40
35
30
25
20
15
10
5
0
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
-55 °C
+25 °C
+100 °C
MHz

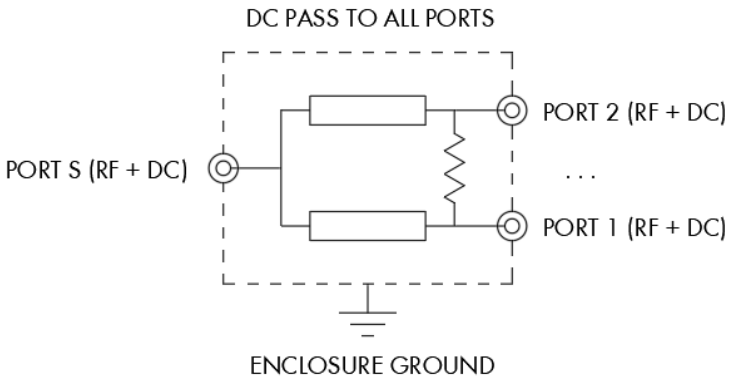

Phase Unbalance vs. Temperature
deg
10
8
6
4
2
0
-2
-4
-6
-8
-10
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
-55 °C
+25 °C
+100 °C
MHz


In-Out Phase Drift vs. Temperature
deg
5
4
3
2
1
0
-1
-2
-3
-4
-5
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
-55°C Relative to +25°C
+100°C Relative to +25°C
MHz

## Typical Performance Data

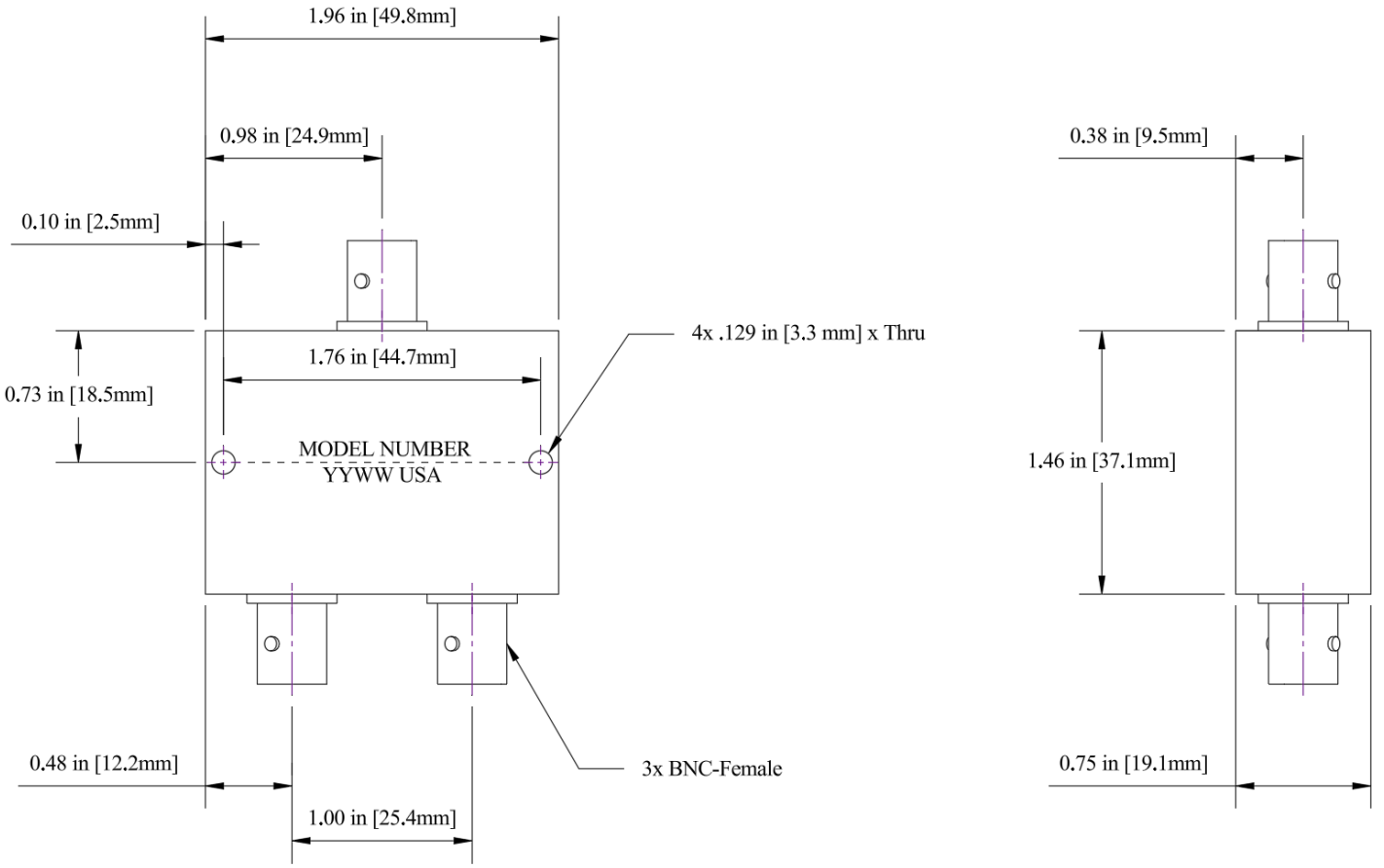
| Frequency (MHz) | Return Loss (dB) | | | Total Loss (dB) | | Isolation (dB) |
|---|---|---|---|---|---|---|
| | Port S | Port 1 | Port 2 | S-1 | S-2 | 1-2 |
| 1 | 28.65 | 17.15 | 17.31 | 3.21 | 3.28 | 24.31 |
| 11 | 27.32 | 23.02 | 23.19 | 3.10 | 3.16 | 48.10 |
| 21 | 26.65 | 23.32 | 23.53 | 3.11 | 3.16 | 51.25 |
| 31 | 26.07 | 23.43 | 23.60 | 3.13 | 3.17 | 43.95 |
| 41 | 25.52 | 23.47 | 23.65 | 3.15 | 3.18 | 40.51 |
| 51 | 25.03 | 23.46 | 23.63 | 3.17 | 3.19 | 38.34 |
| 61 | 24.58 | 23.45 | 23.64 | 3.18 | 3.20 | 36.64 |
| 71 | 24.16 | 23.43 | 23.61 | 3.20 | 3.21 | 35.28 |
| 81 | 23.79 | 23.42 | 23.61 | 3.21 | 3.22 | 34.16 |
| 91 | 23.44 | 23.41 | 23.62 | 3.22 | 3.23 | 33.19 |
| 101 | 23.11 | 23.39 | 23.61 | 3.24 | 3.23 | 32.33 |
| 151 | 21.92 | 23.49 | 23.48 | 3.31 | 3.27 | 29.22 |
| 191 | 21.40 | 23.42 | 23.37 | 3.31 | 3.30 | 27.50 |
| 201 | 21.22 | 23.34 | 23.35 | 3.31 | 3.31 | 27.14 |
| 251 | 20.33 | 23.00 | 23.13 | 3.34 | 3.34 | 25.66 |
| 301 | 19.70 | 22.87 | 22.98 | 3.36 | 3.37 | 24.61 |
| 351 | 19.30 | 22.82 | 22.88 | 3.39 | 3.41 | 23.85 |
| 401 | 19.12 | 22.85 | 22.81 | 3.41 | 3.44 | 23.37 |
| 451 | 19.13 | 22.99 | 22.78 | 3.44 | 3.47 | 23.13 |
| 501 | 19.27 | 23.08 | 22.61 | 3.46 | 3.50 | 23.14 |
| 551 | 19.48 | 23.12 | 22.31 | 3.48 | 3.53 | 23.34 |

## Simplified Electrical Schematic



**WERBEL MICROWAVE LLC**
19 West Street, Unit A
East Hanover, N.J. 07936
www.WerbelMicrowave.com

## Outline Dimensions




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