WERBEL MICROWAVE LLC
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Power Divider, 2-way, 5-500 MHz, SMA Female

WM2PD-5-500M-S



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.

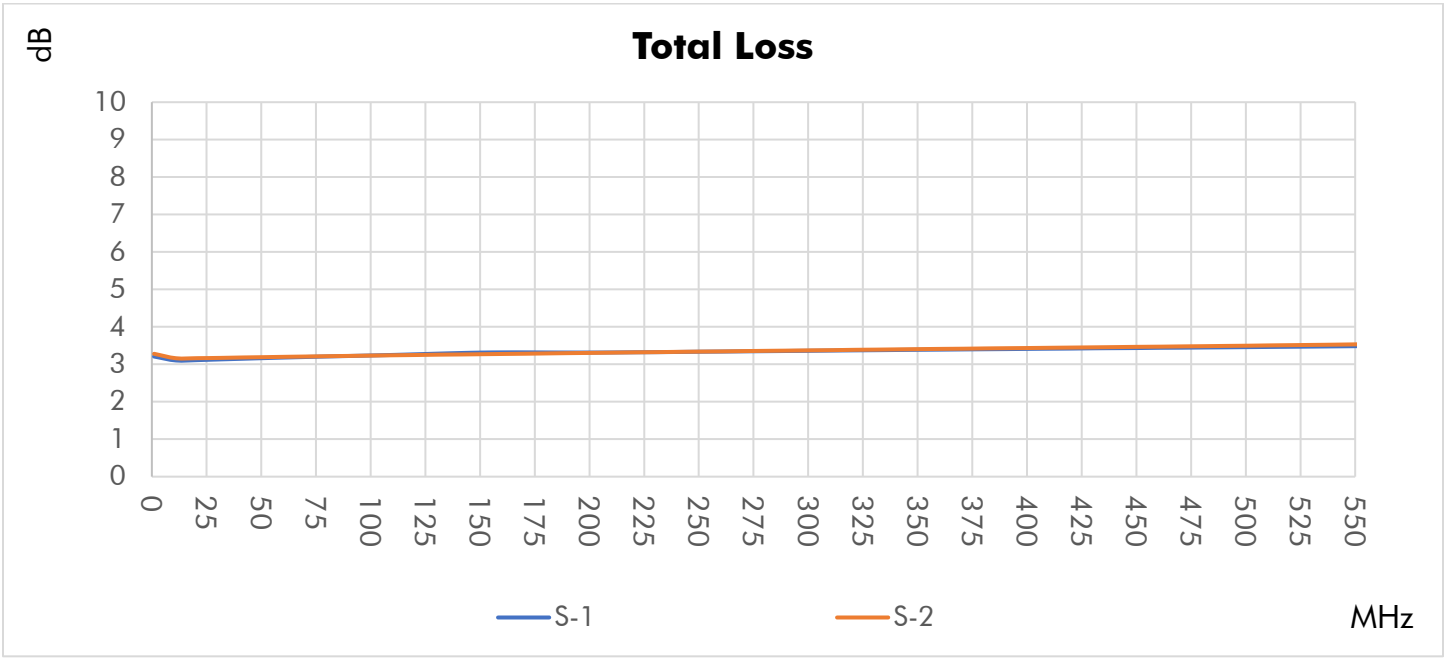
Parameter	Min	Typ.	Max	Unit
Frequency Range	5		500	MHz
Impedance		50		Ω
Return Loss (Port S)	10.9	19.0		dB, min.
Return Loss (Port 1-2)	12.7	22.5		dB, min.
Insertion Loss (above 3.0 dB)		0.3	1.2	dB, max.
Isolation	18	23.0		dB, min.
Amplitude Unbalance (±)[1]		0.02	0.9	dB, max.
Phase Unbalance (±)[1]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

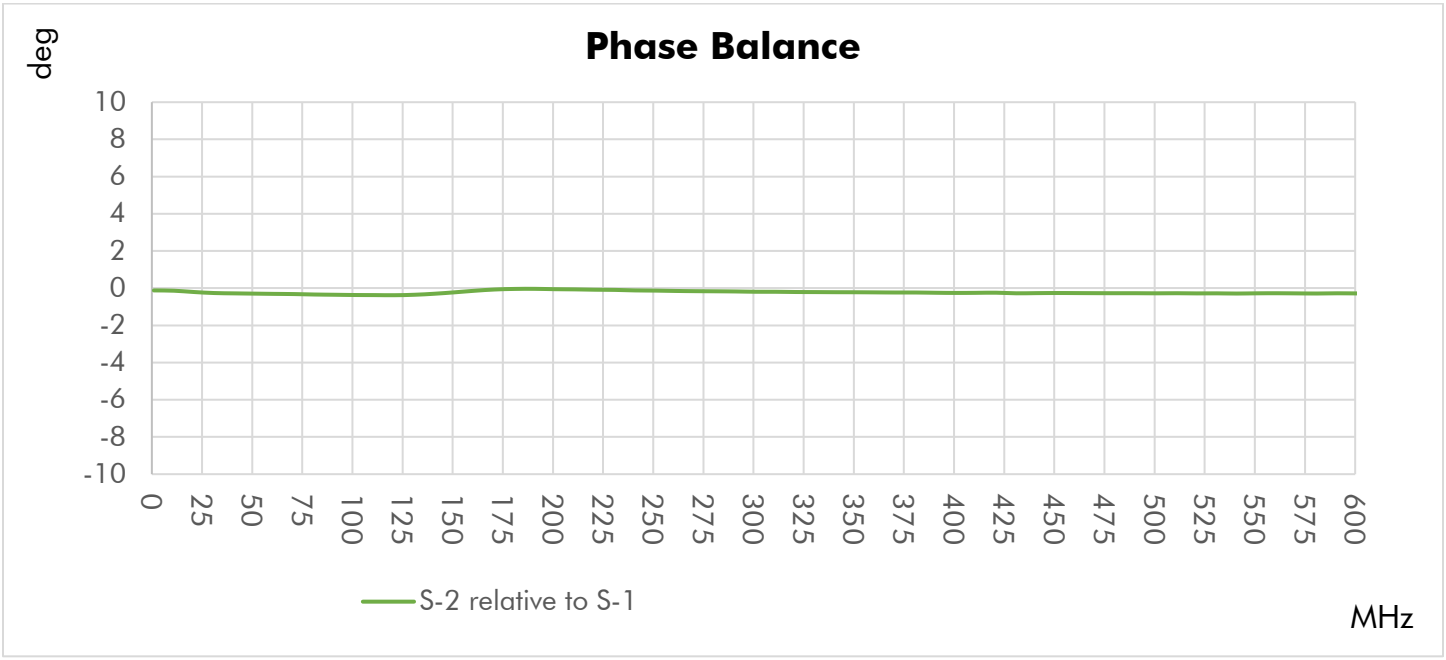
Mechanical and Environmental Specifications

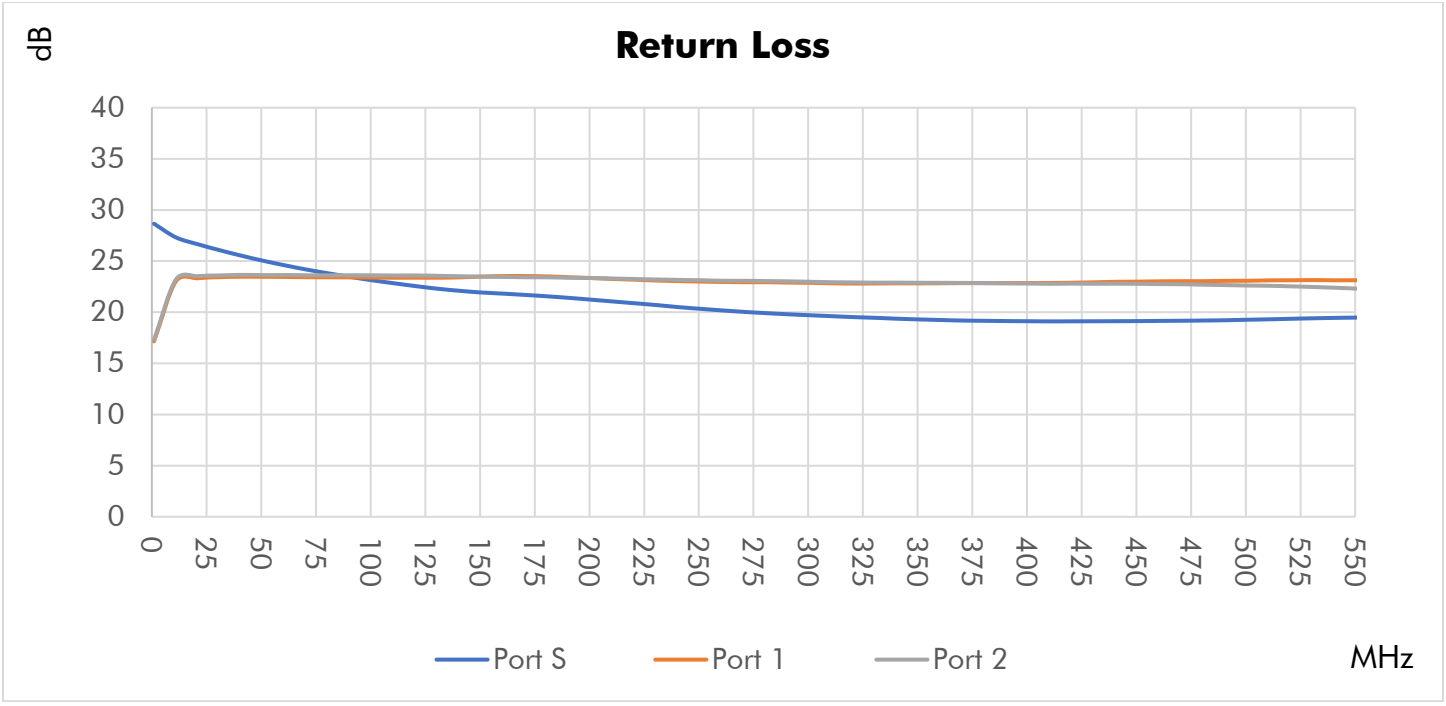
Connector Interface	SMA Female	RoHS Status[4]	RoHS3 Compliant
Operating Temperature[3]	-55 to +85 °C	REACH Status[4]	REACH Unaffected
Storage Temperature	-55 to +100 °C	Enclosure Material	Aluminum
Nominal Weight	94 g (3.2 oz)	Connectors Material	Stainless Steel
Operating Humidity	10-90% (non-condensing)	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

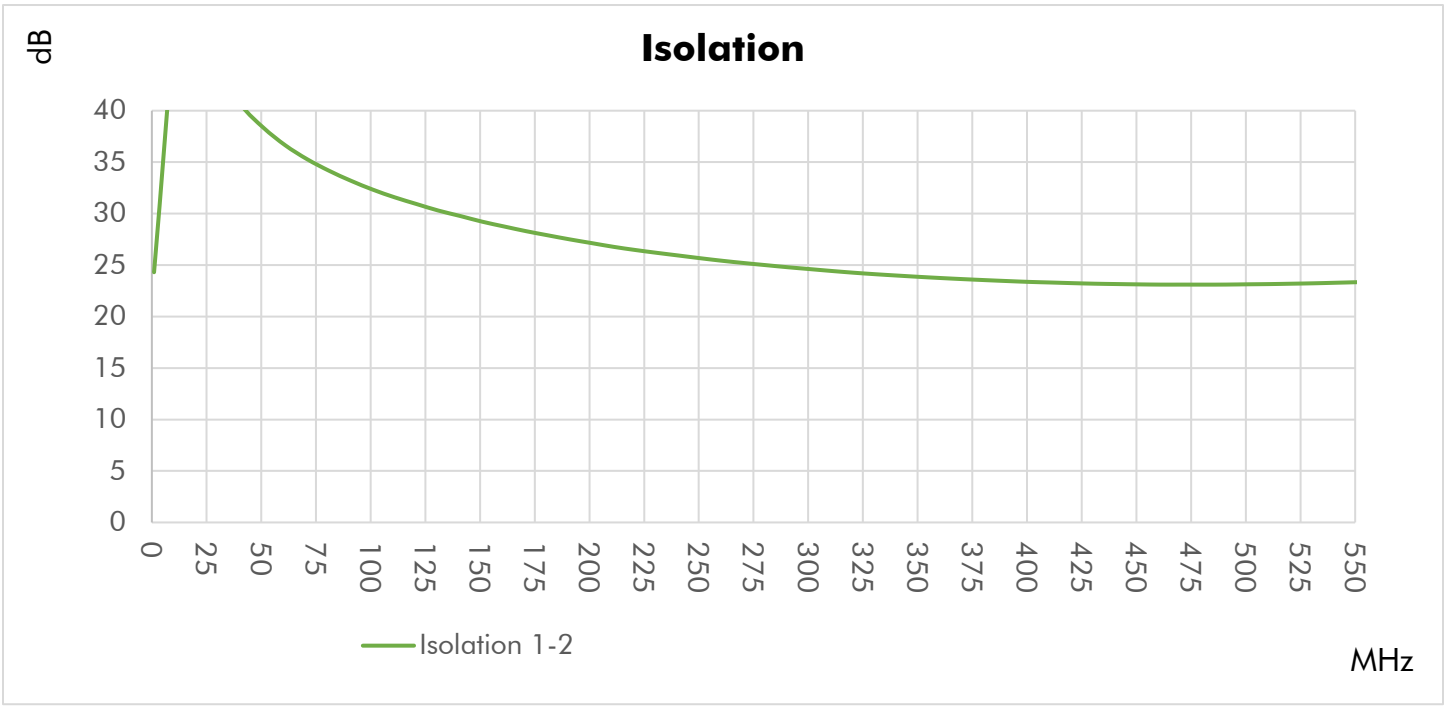
1. With reference to average.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications are tested at +25 °C.
4. To the best of our knowledge at the time of publication.

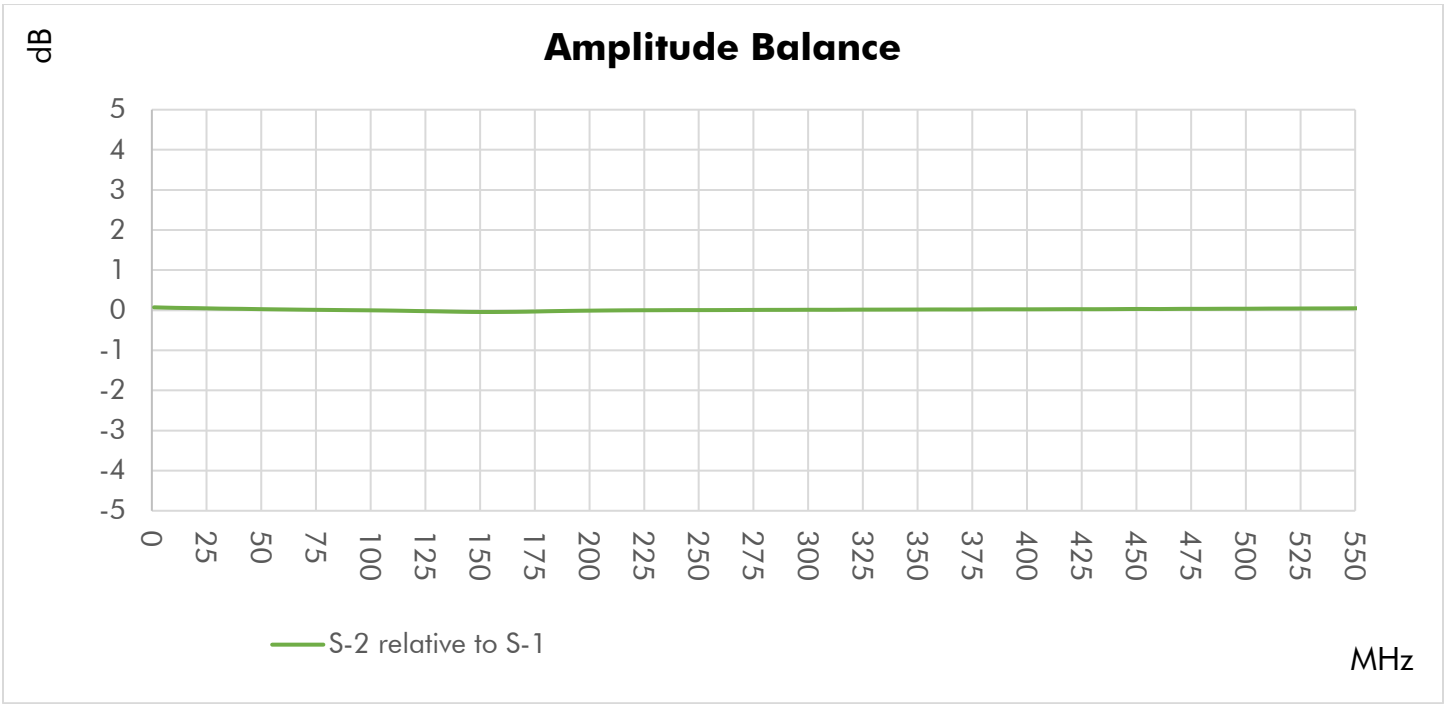
Typical Performance at +25 °C



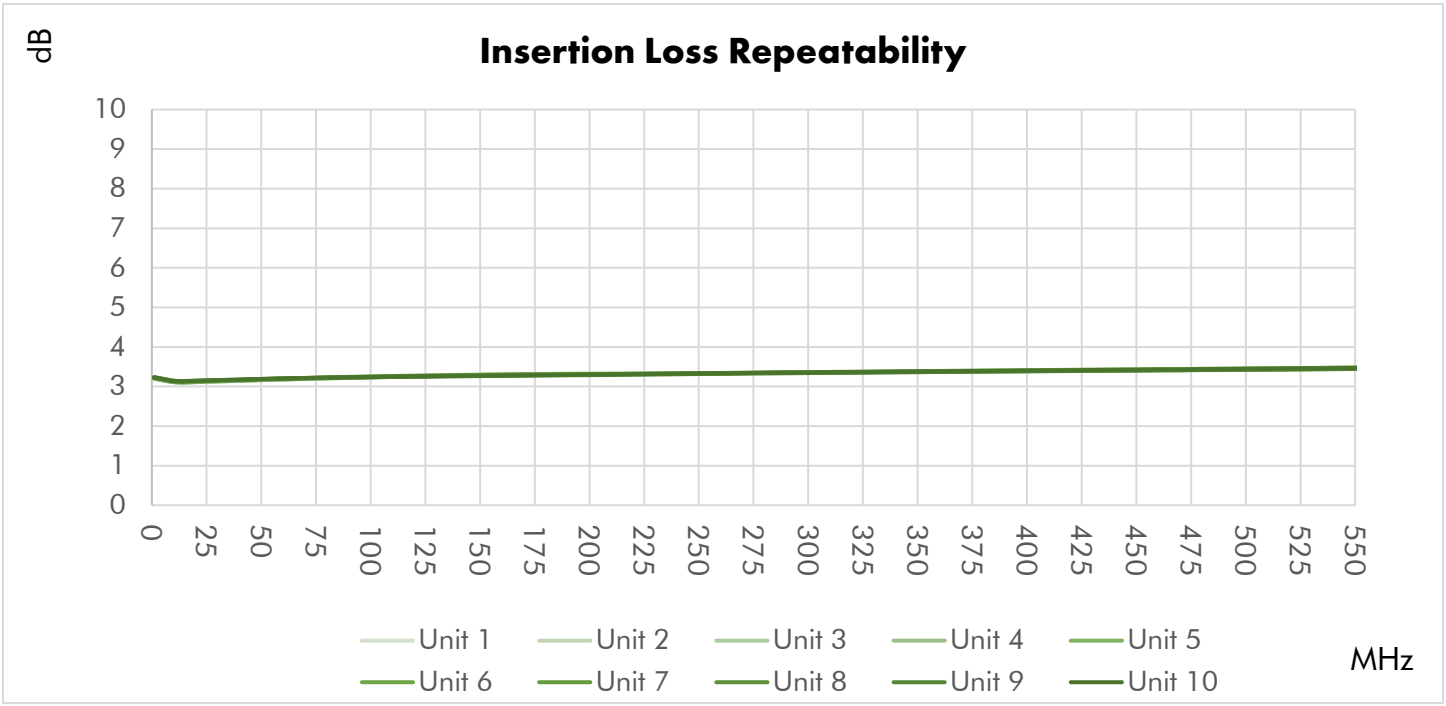


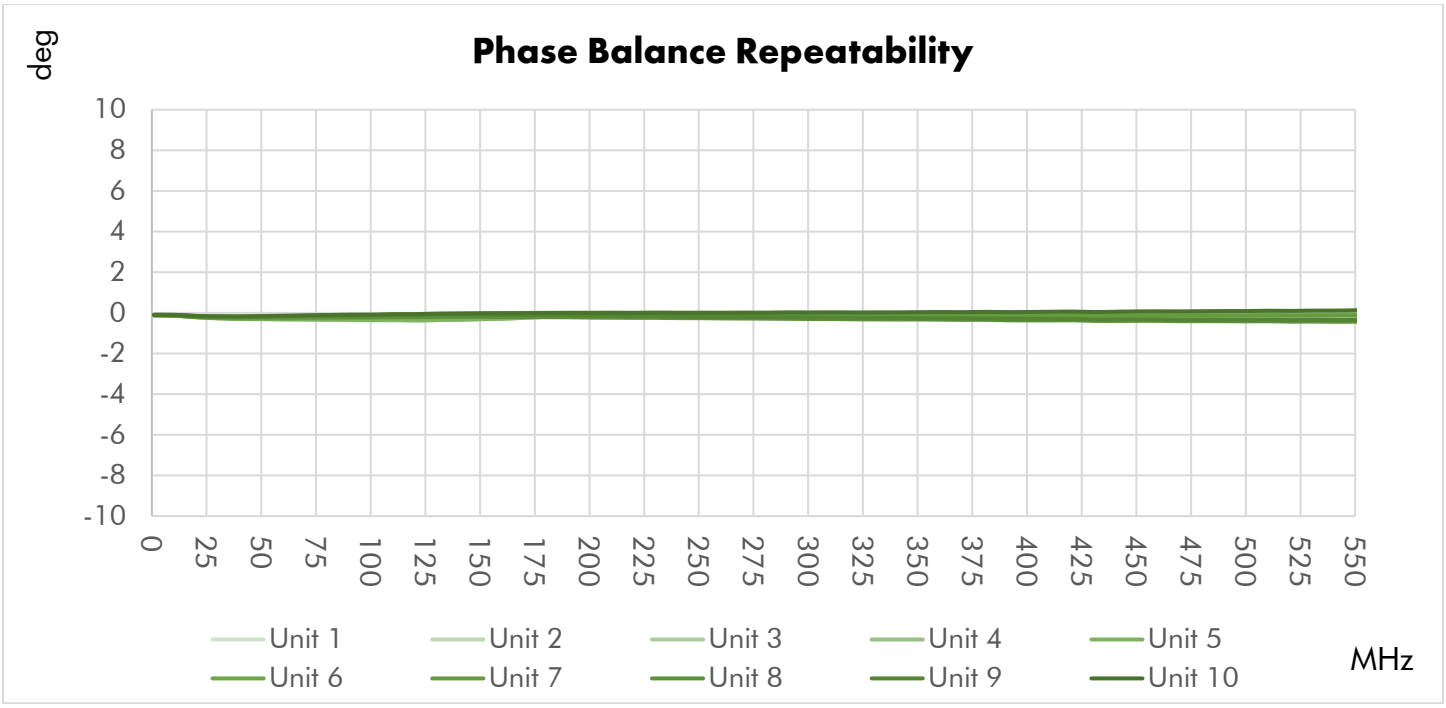

Return Loss
dB
40
35
30
25
20
15
10
5
0
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
Port S
Port 1
Port 2
MHz

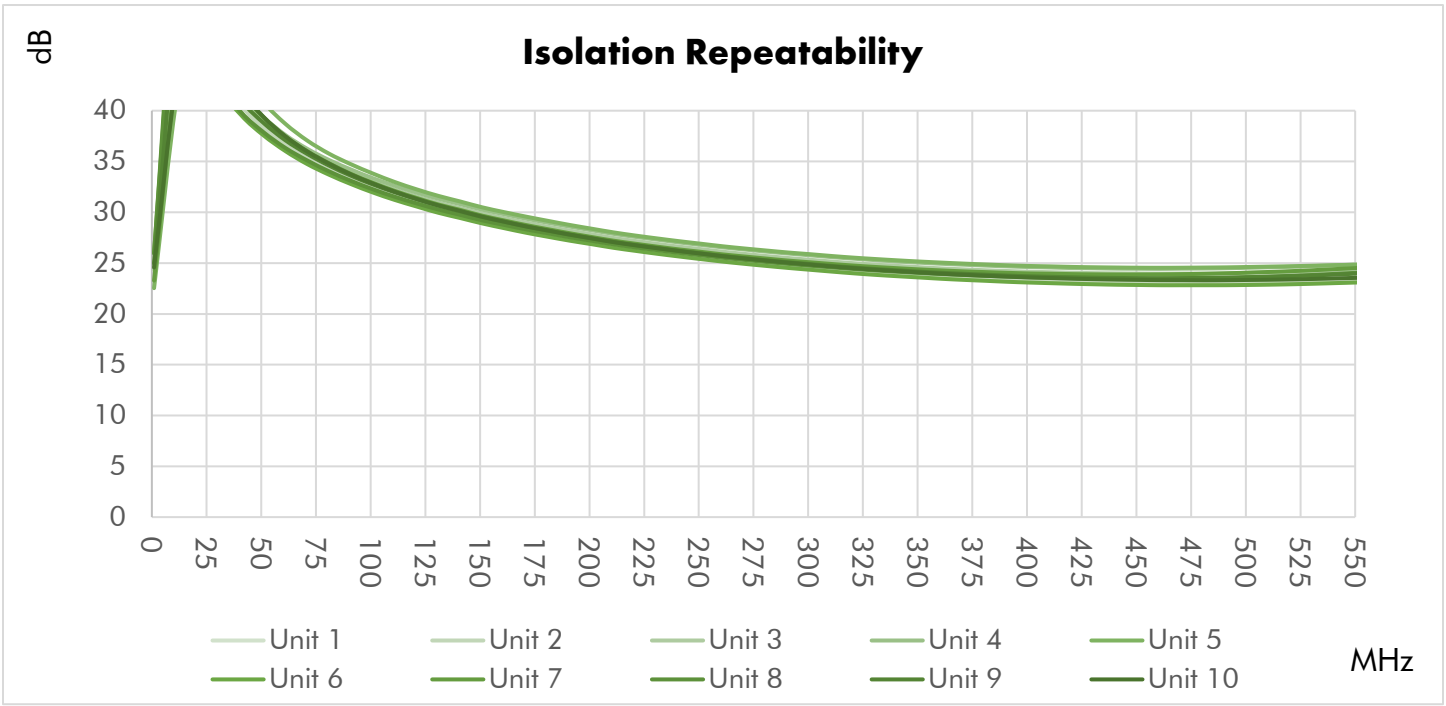

Isolation
dB
40
35
30
25
20
15
10
5
0
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
Isolation 1-2
MHz

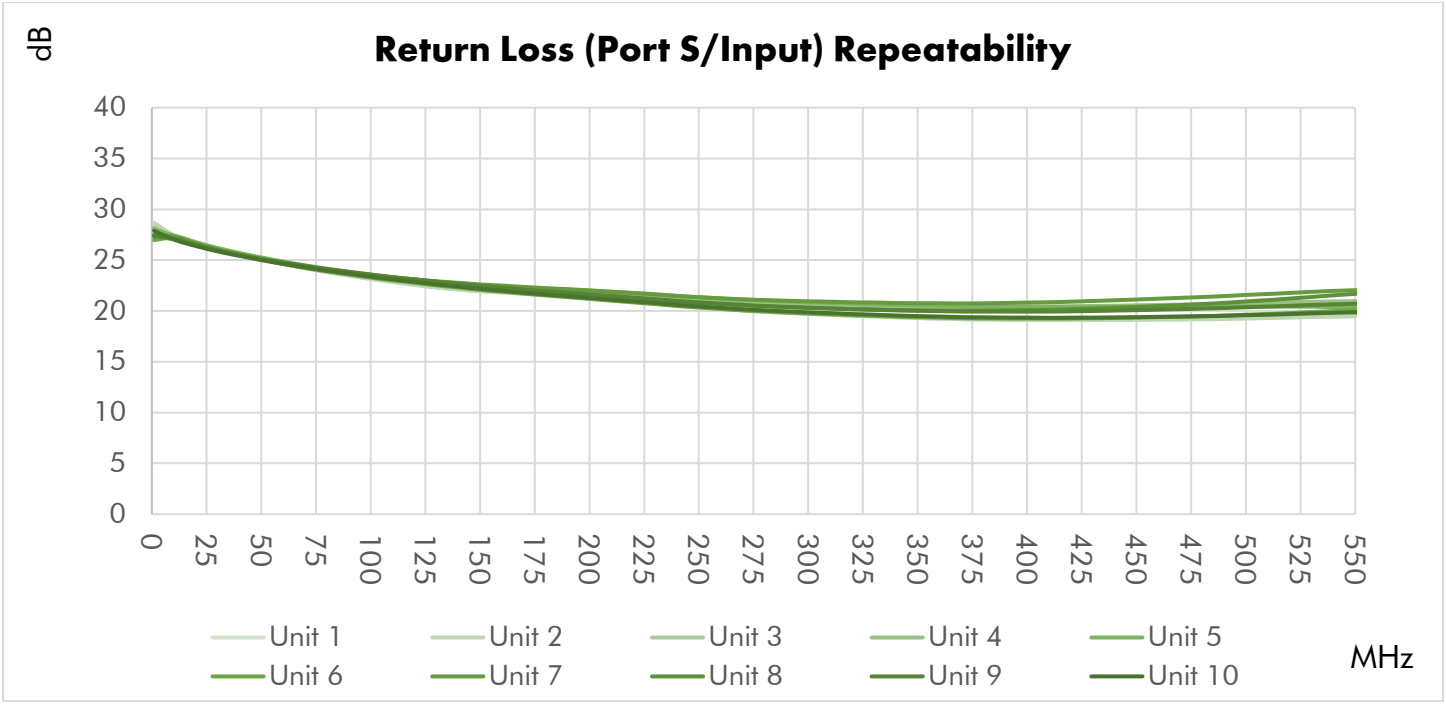


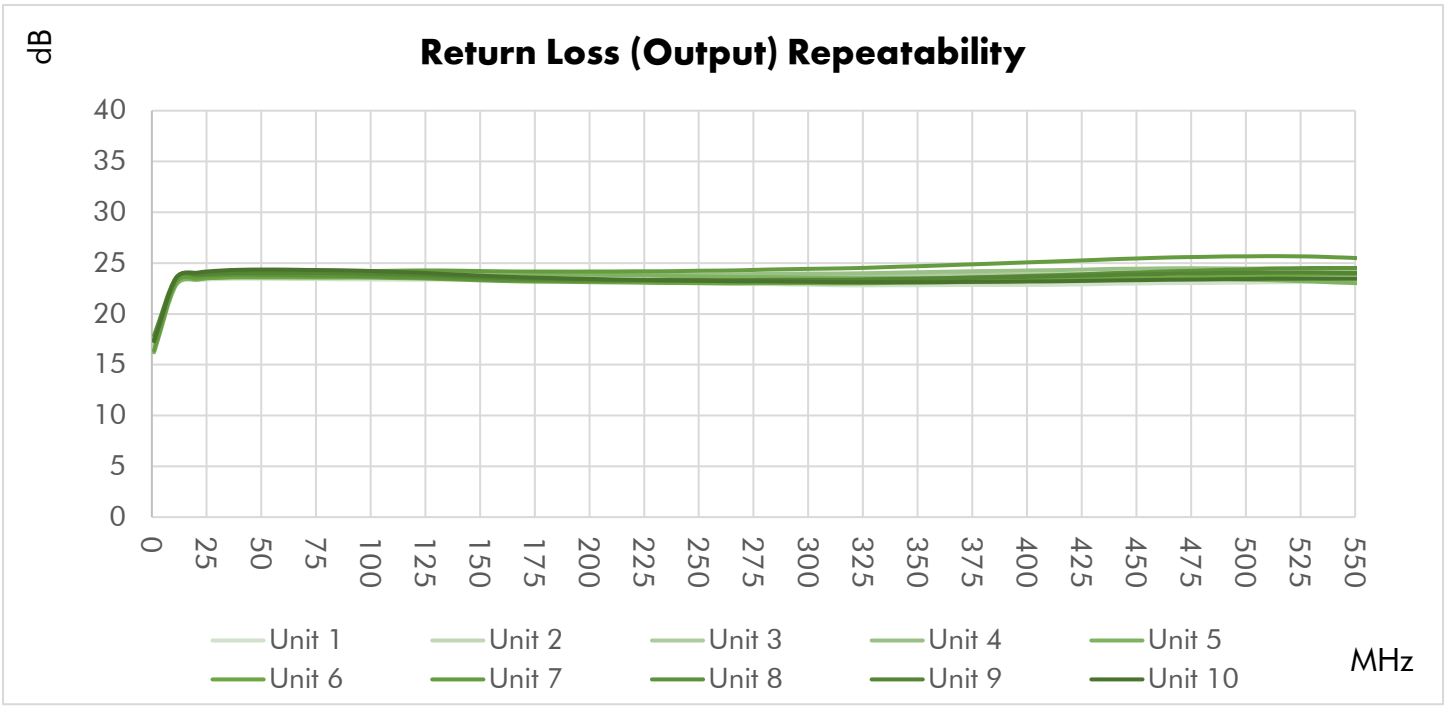
Repeatability in Production



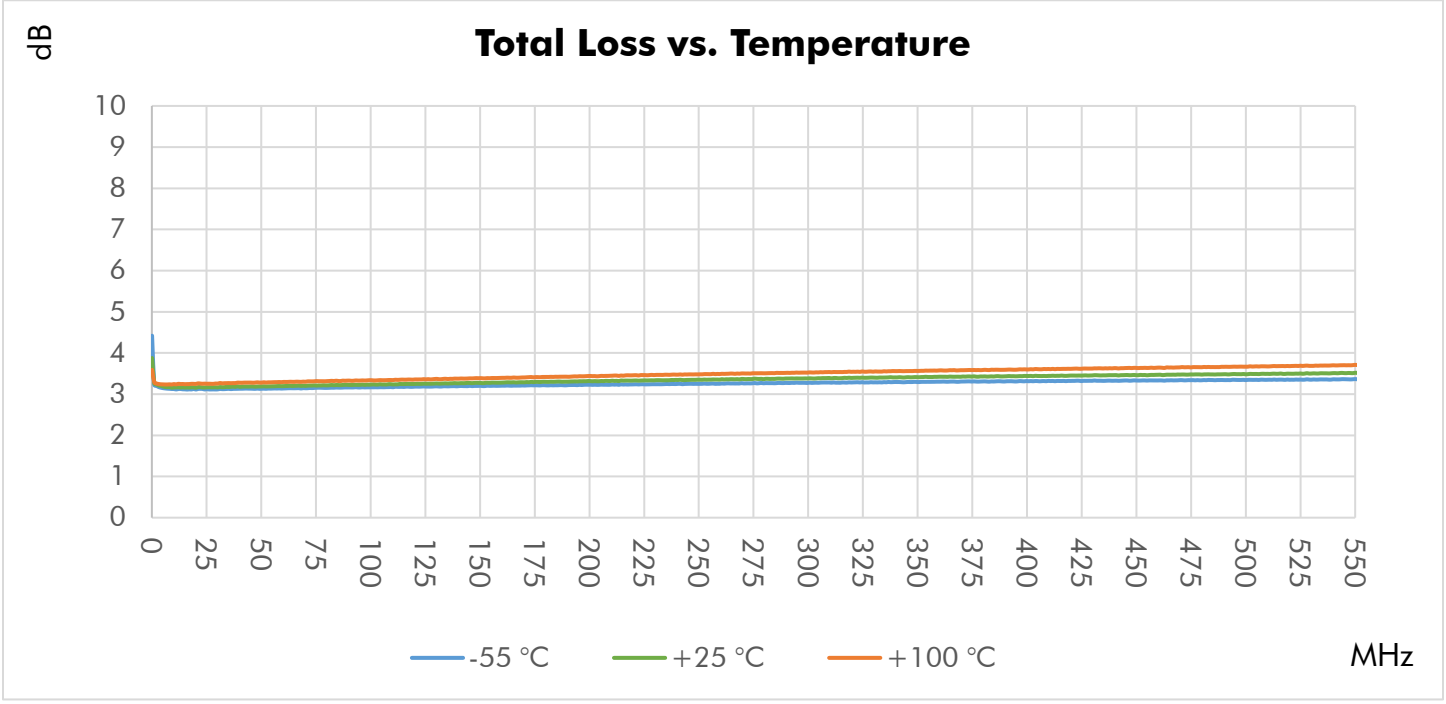

Phase Balance Repeatability
deg
10
8
6
4
2
0
-2
-4
-6
-8
-10
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
Unit 1
Unit 2
Unit 3
Unit 4
Unit 5
Unit 6
Unit 7
Unit 8
Unit 9
Unit 10
MHz

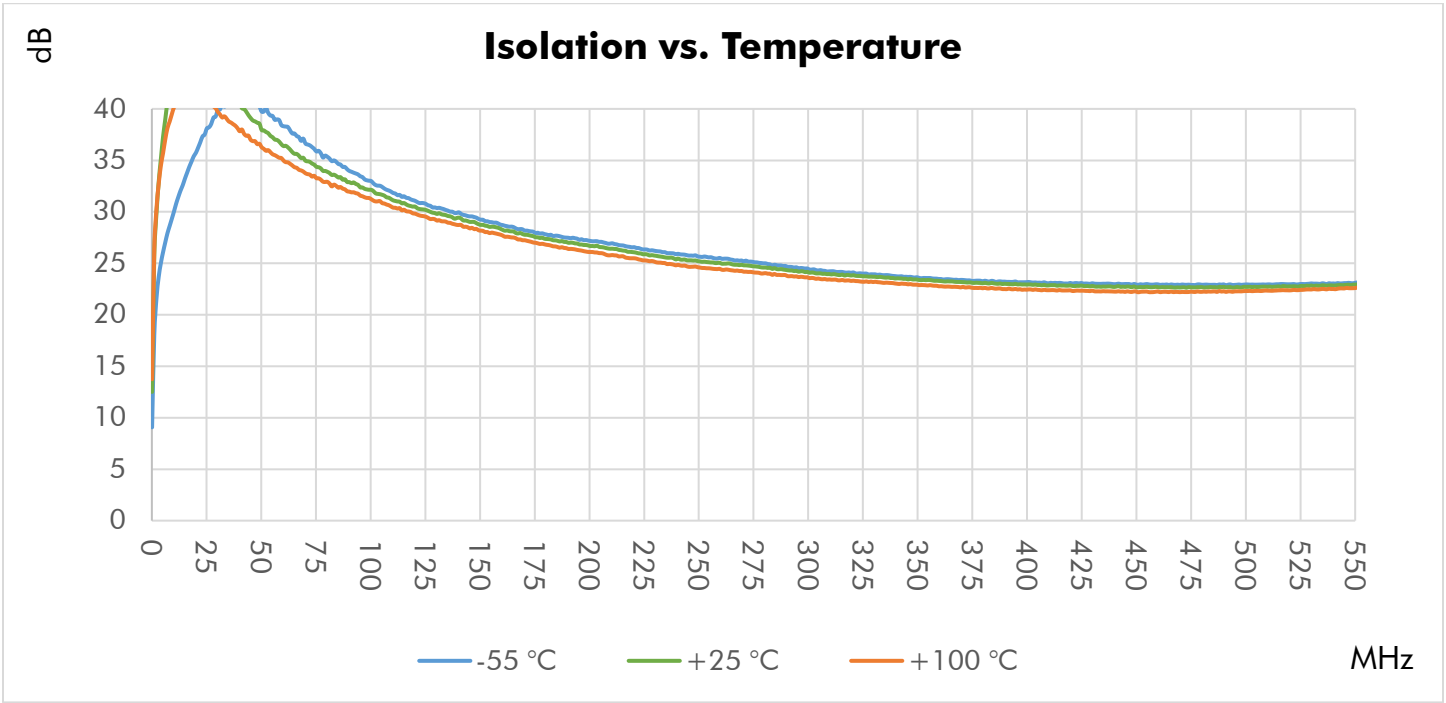

Isolation Repeatability
dB
40
35
30
25
20
15
10
5
0
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
Unit 1
Unit 2
Unit 3
Unit 4
Unit 5
Unit 6
Unit 7
Unit 8
Unit 9
Unit 10
MHz

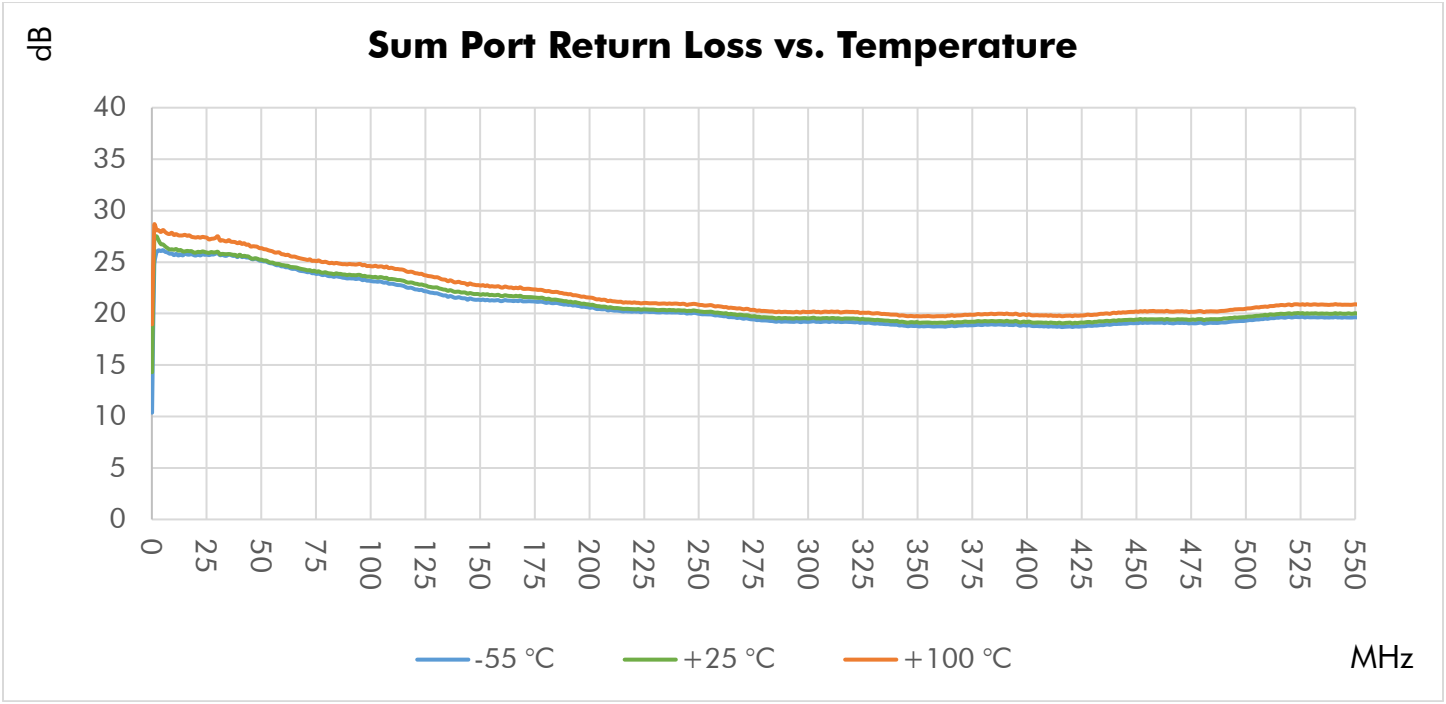

Return Loss (Port S/Input) Repeatability
dB
40
35
30
25
20
15
10
5
0
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
Unit 1
Unit 2
Unit 3
Unit 4
Unit 5
Unit 6
Unit 7
Unit 8
Unit 9
Unit 10
MHz

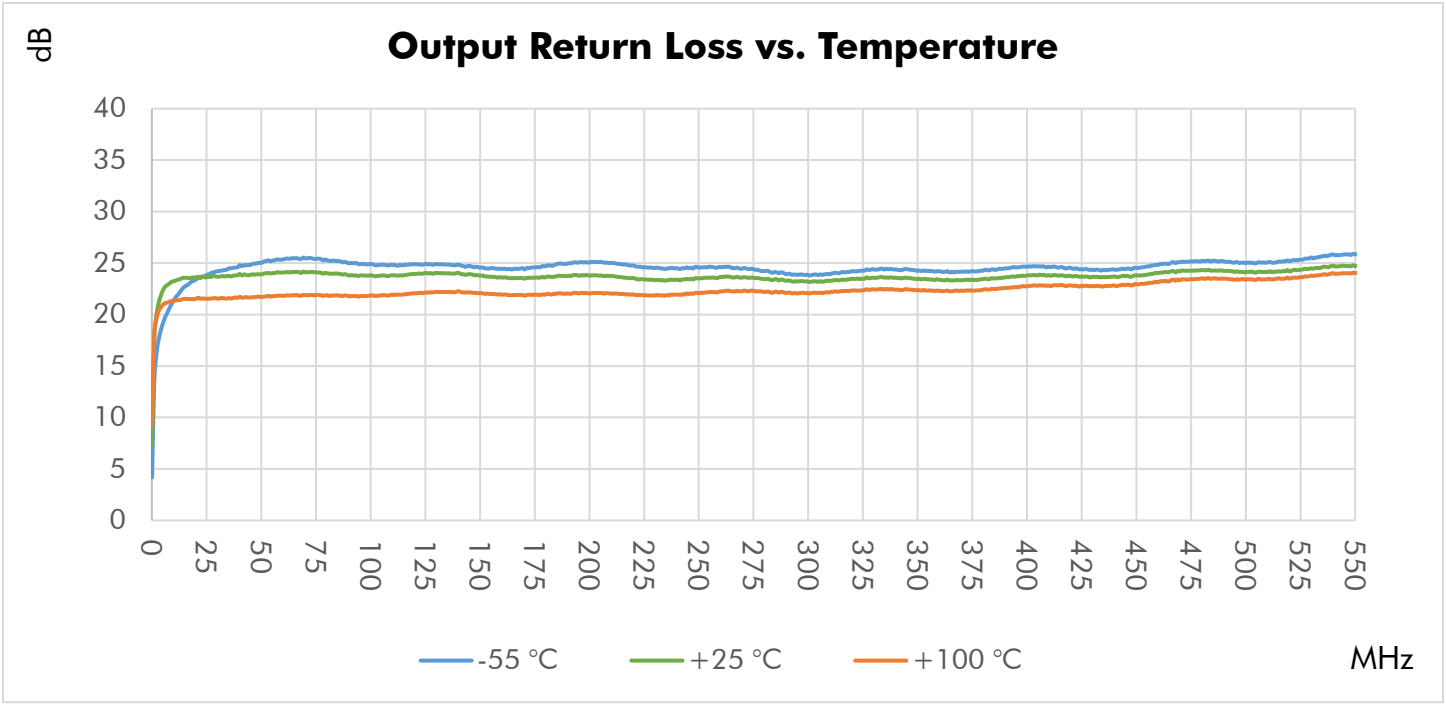

Return Loss (Output) Repeatability
dB
40
35
30
25
20
15
10
5
0
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
Unit 1
Unit 2
Unit 3
Unit 4
Unit 5
Unit 6
Unit 7
Unit 8
Unit 9
Unit 10
MHz

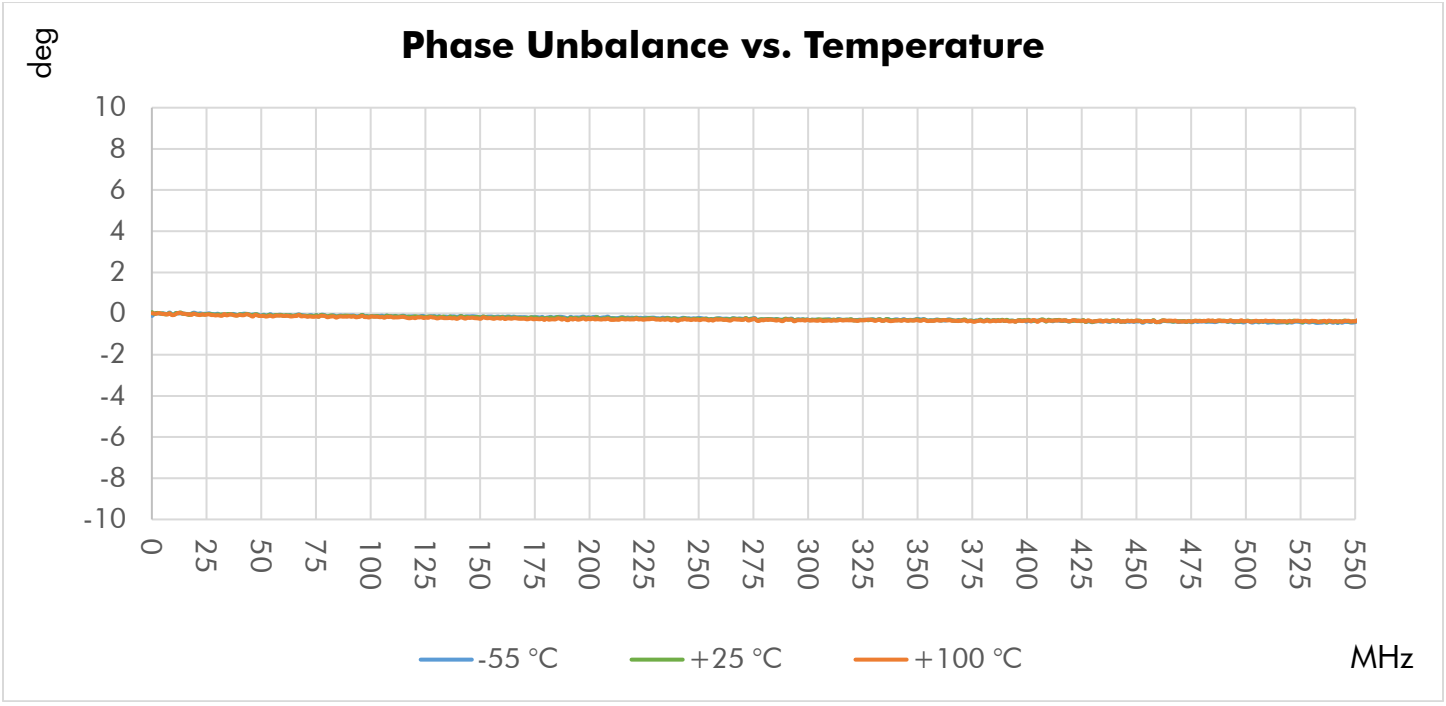
Typical Performance Over Temperature

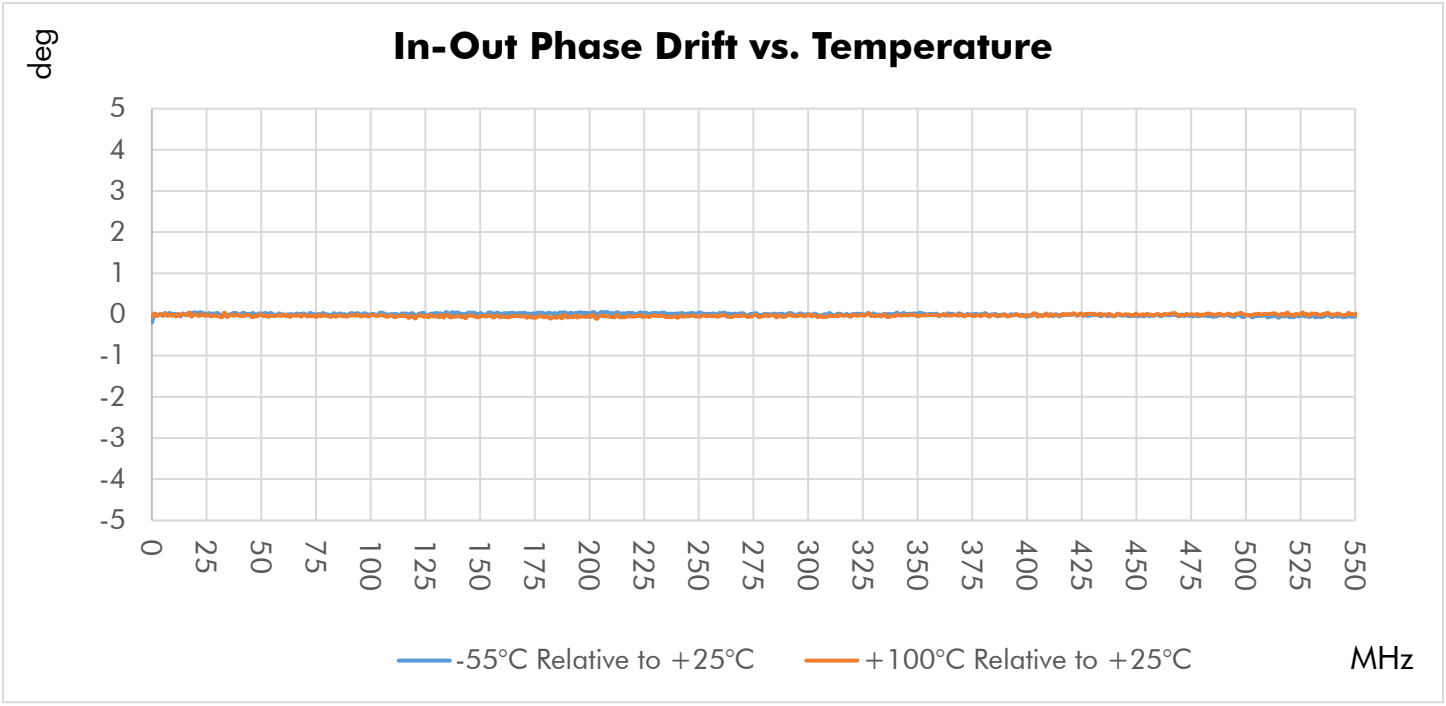





Sum Port Return Loss vs. Temperature
dB
40
35
30
25
20
15
10
5
0
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
-55 °C
+25 °C
+100 °C
MHz


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

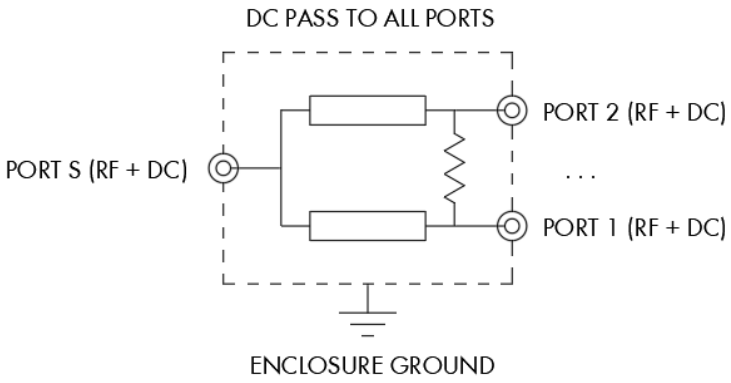

Phase Unbalance vs. Temperature
deg
10
8
6
4
2
0
-2
-4
-6
-8
-10
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
-55 °C
+25 °C
+100 °C
MHz


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

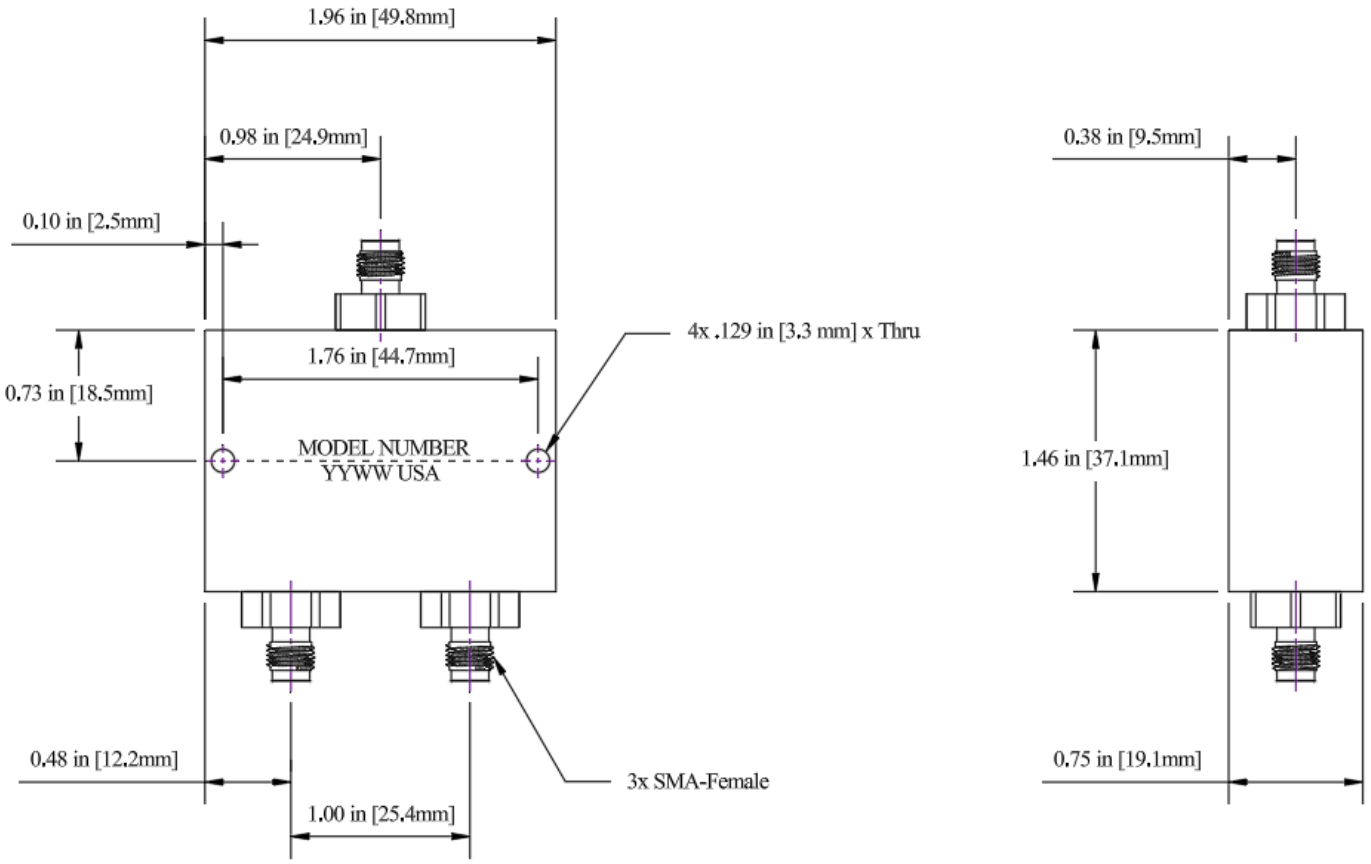
Typical Performance Data

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



Outline Dimensions



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

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