

Power Divider, 4-way, 0.5-6GHz, SMA Female

WM4PD-0.5-6-S

Description

WM4PD-0.5-6-S is a wideband 4-way in-line power splitter covering of 0.5 to 6 GHz with excellent return loss, low insertion loss, and high isolation performance. It is a very versatile product that covers the upper UHF band, cellular and PCS testing measurement applications as well as L, S, and the lower half of C band. The aluminum enclosure measures 5.75 x 2.80 x 0.55 inches. The multi-stage Wilkinson design provides wideband coverage with minimal ripple and low signal loss. Insertion loss 0.5dB typical. Isolation 25dB typical. Return loss 23dB typical. Amplitude balance 0.2dB typical. Phase balance 4 degrees typical.



Photo is representative.

Specifications		Min.	Typ.	Max.	Units
Frequency		500	-	6000	MHz
Impedance		-	50	-	Ohm
Return Loss (Port S)		12	17	-	dB
Return Loss (Ports 1-4)		14	23	-	dB
Insertion Loss (above 6.02dB)	500-3000MHz	-	0.5	0.7	dB
	3000-6000MHz	-	0.9	1.4	dB
Isolation		17	25	-	dB
Amplitude Balance		-	0.2	0.7	dB
Phase Balance		-	4	10	Degrees
Input Power (CW) ¹		-	-	30	Watts
Combining Power (CW) ¹		-	-	0.5	Watts/Port
Internal Dissipation		-	-	3	Watts

Mechanical

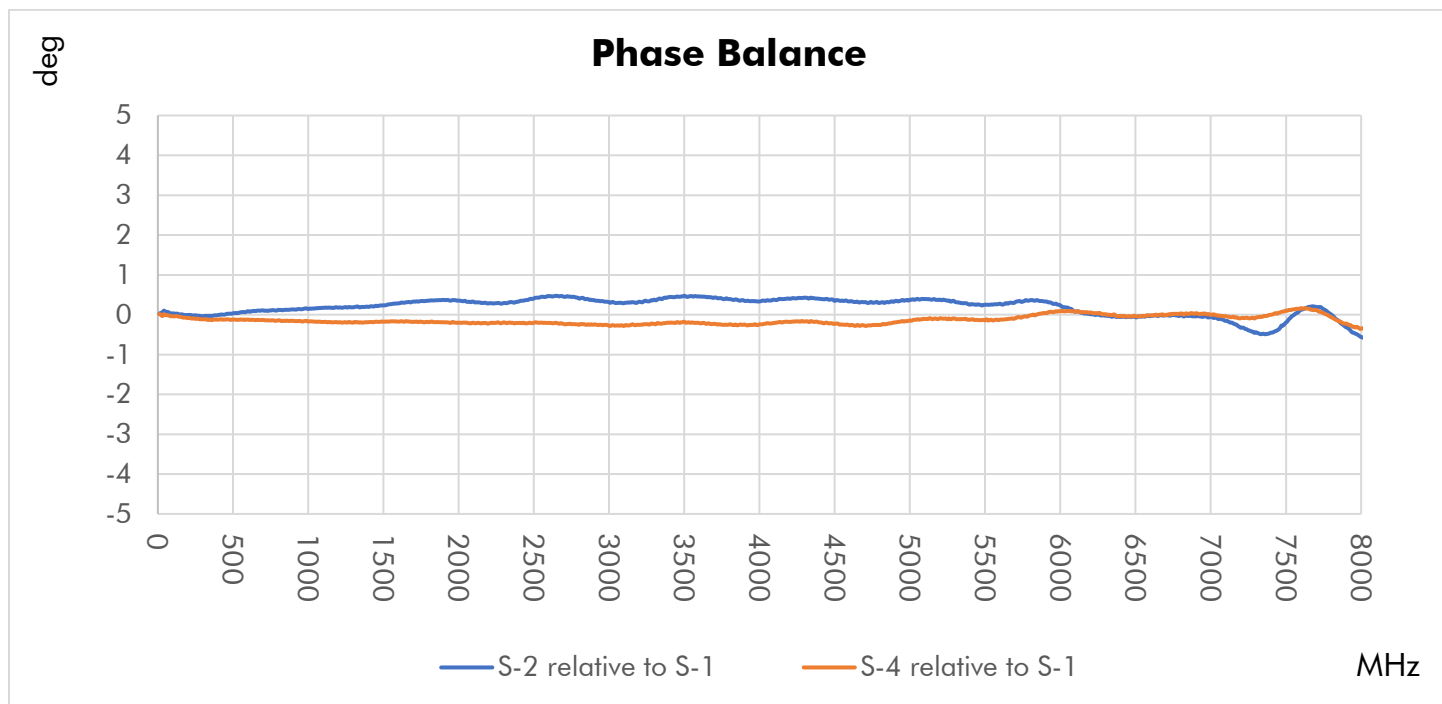
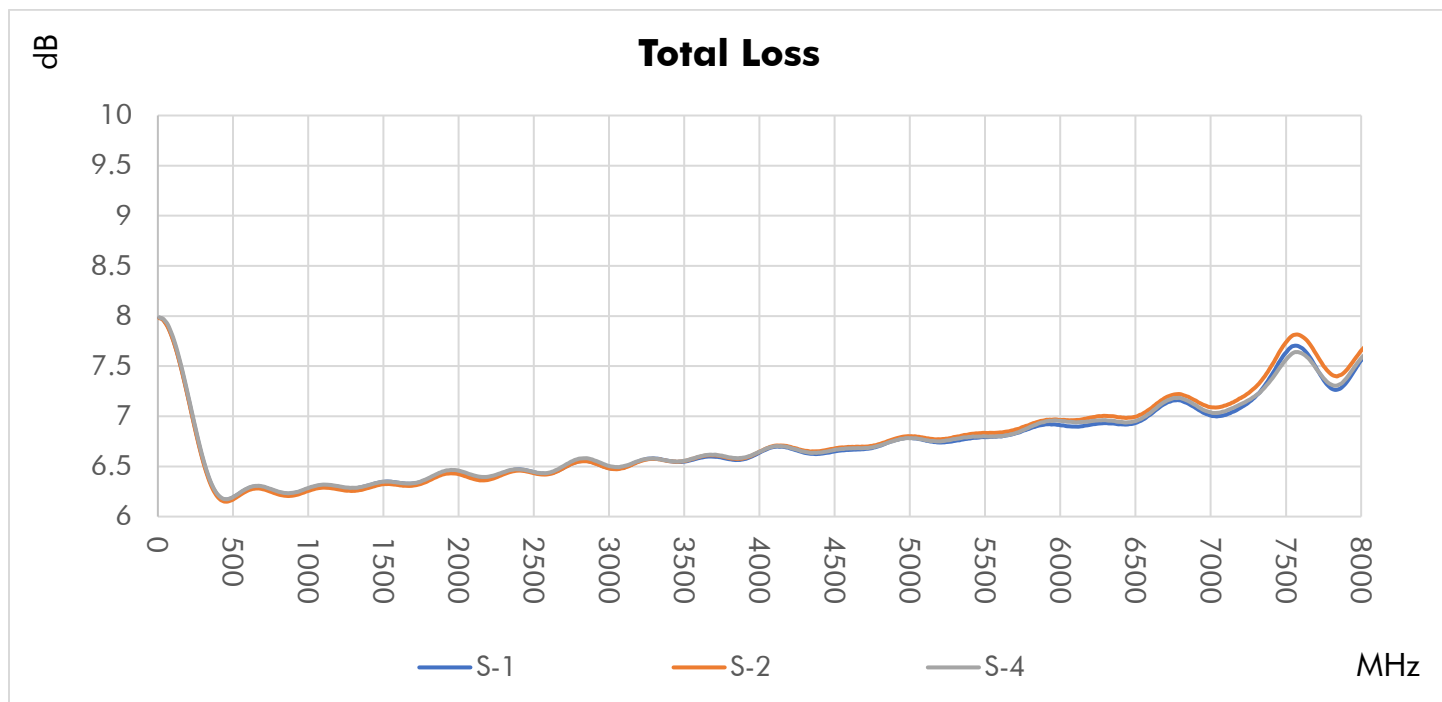
Connector Interface	SMA-Female
Operating Temperature ²	-55 to +85 °C
Storage Temperature	-55 to +100 °C
Weight Estimate	6 oz (170 g)
Humidity	10-90% non-condensing
Environment	Indoor use only
CAGE Code	78YZ0

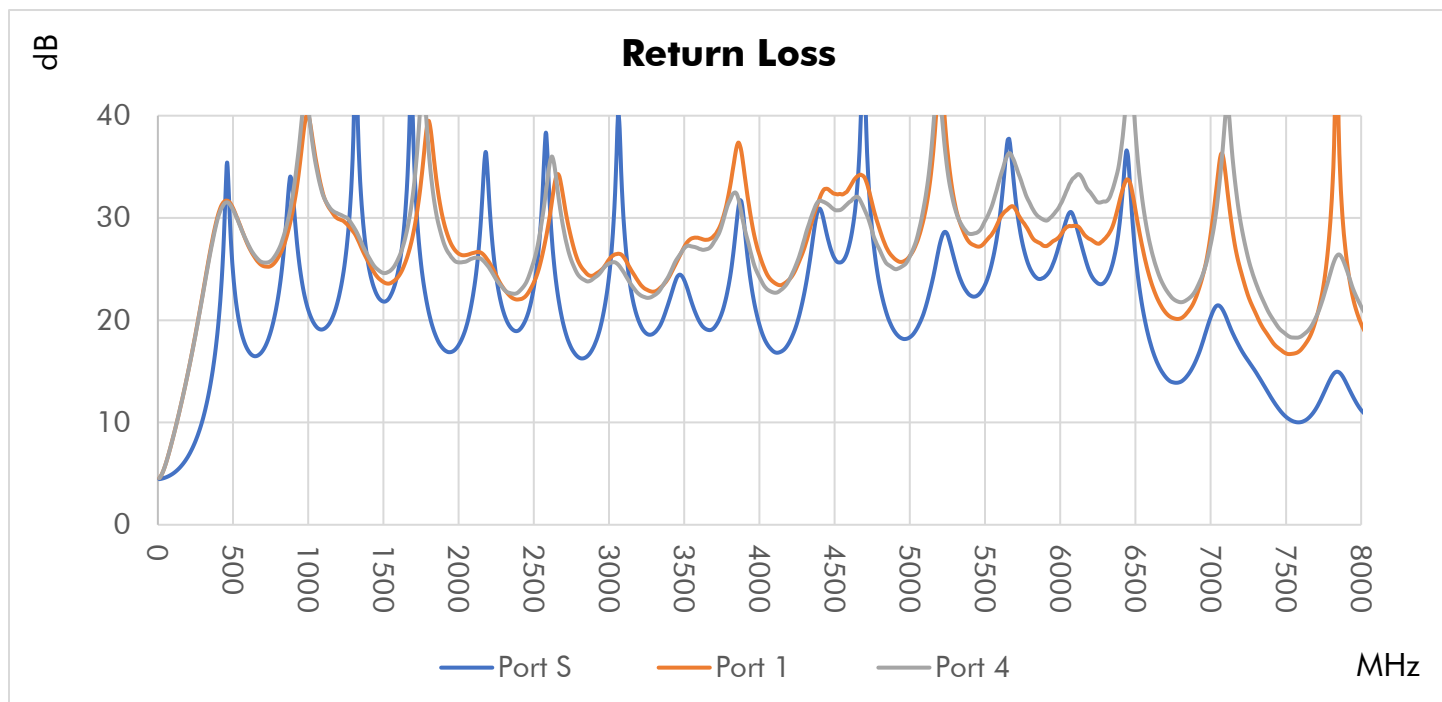
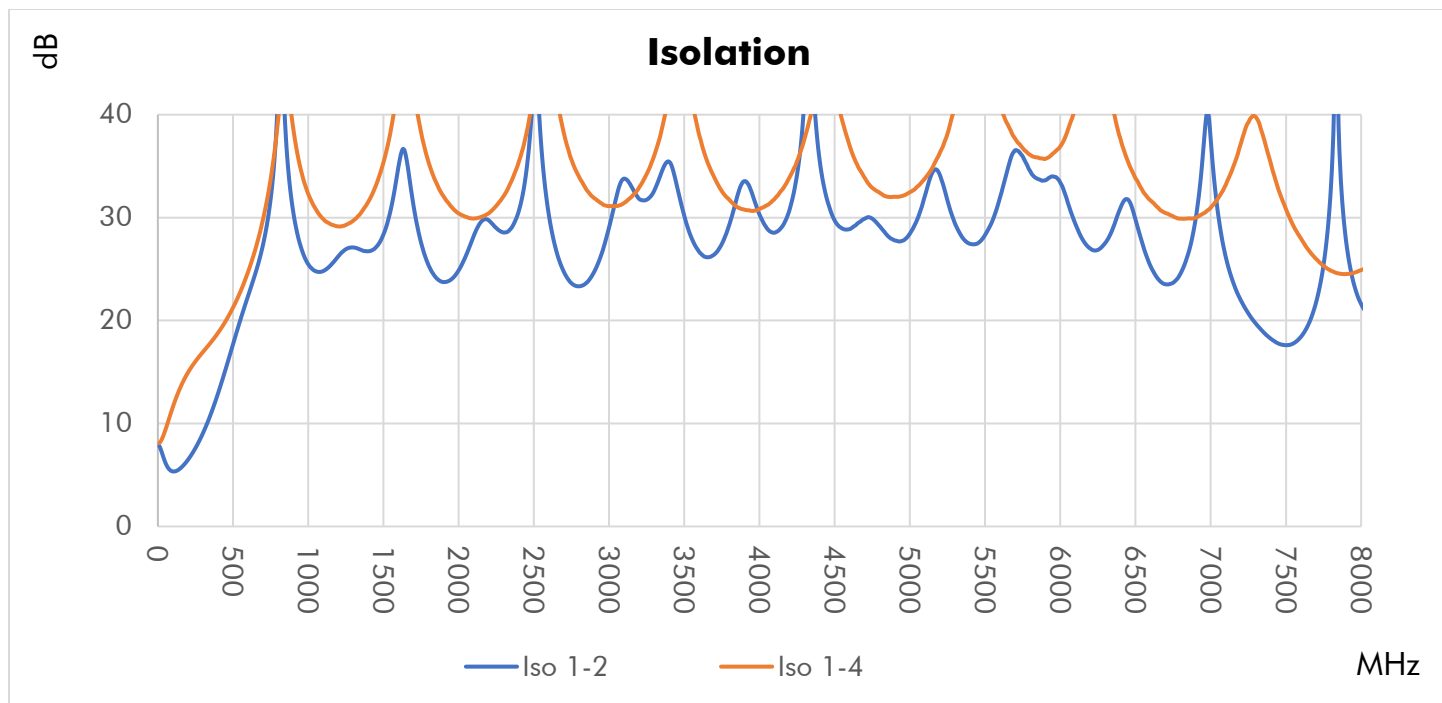
1. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
2. Electrical specification at +25 °C only.
3. To the best of our knowledge at the time of publication.

Materials

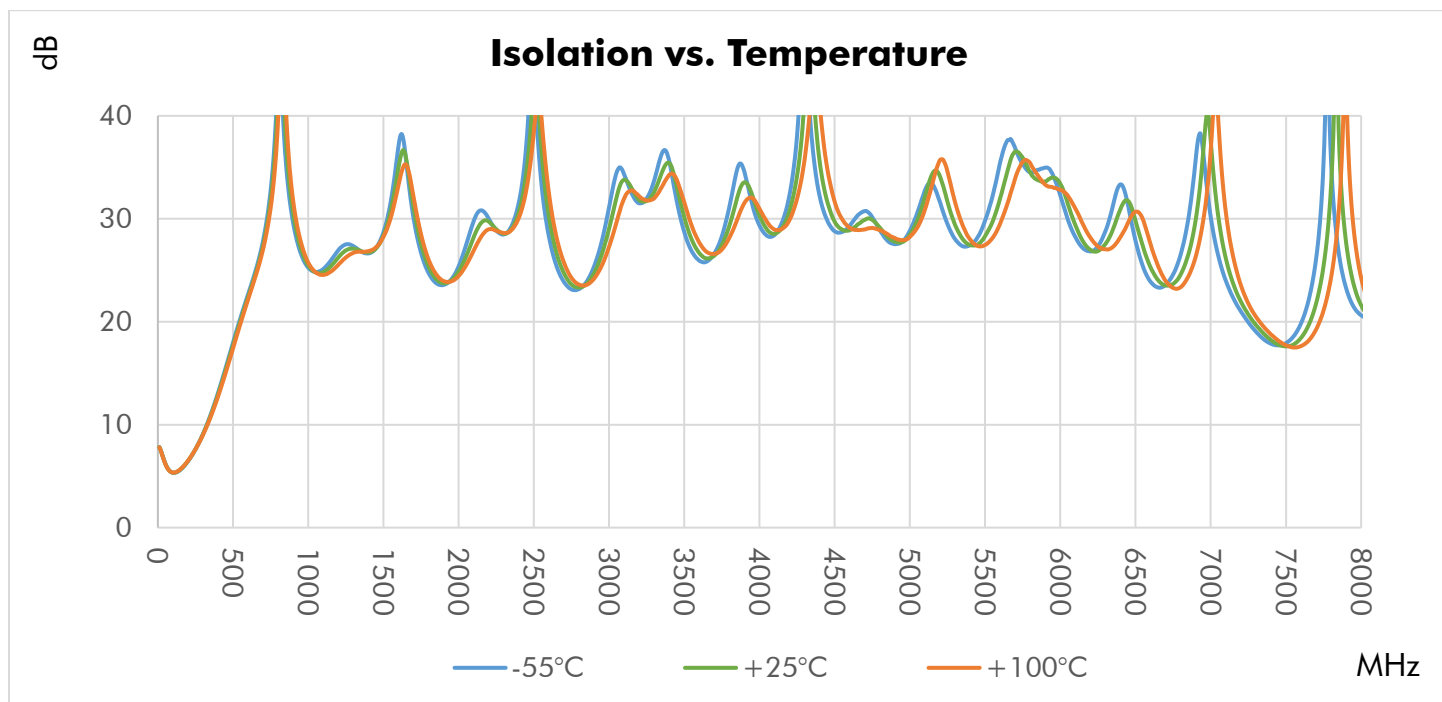
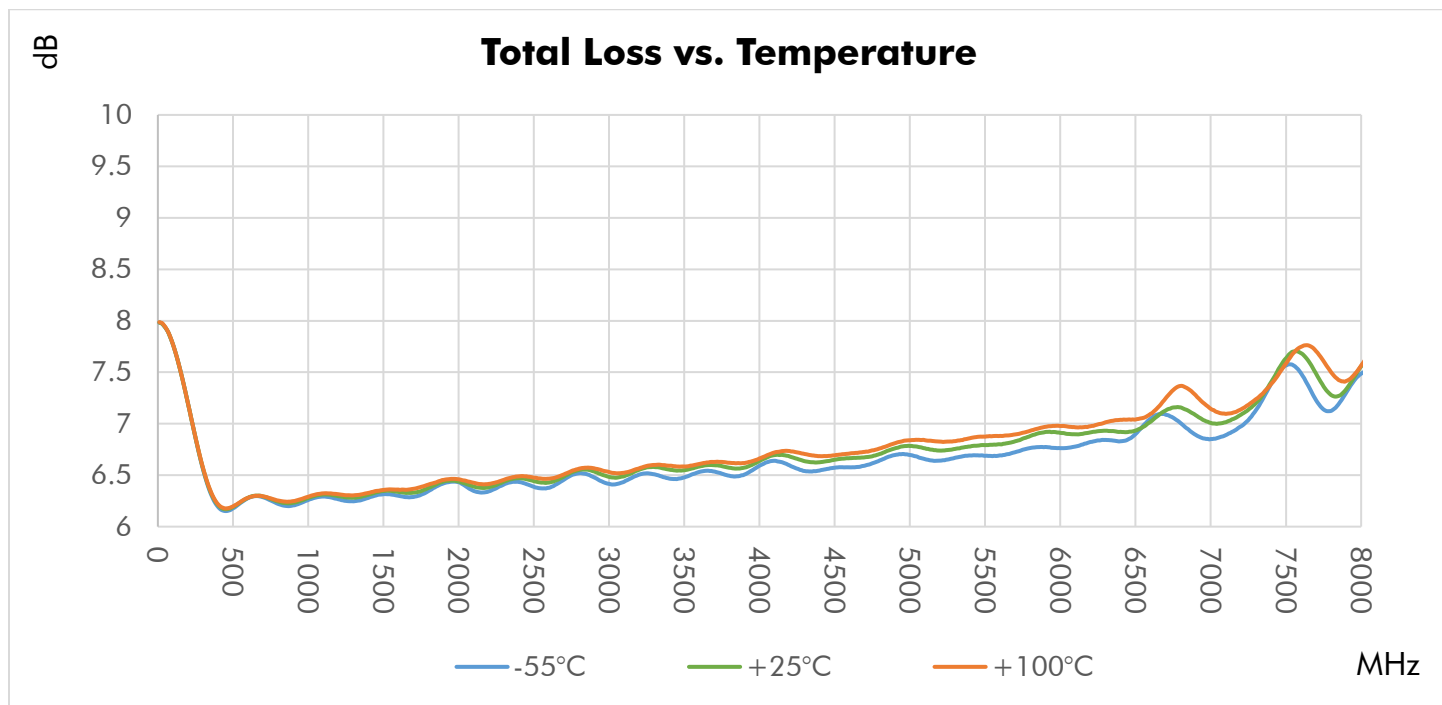
RoHS Compliant ³	Yes
REACH Compliant ³	Yes
Enclosure	Aluminum
Connectors	Brass, Gold Plated
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Green Paint

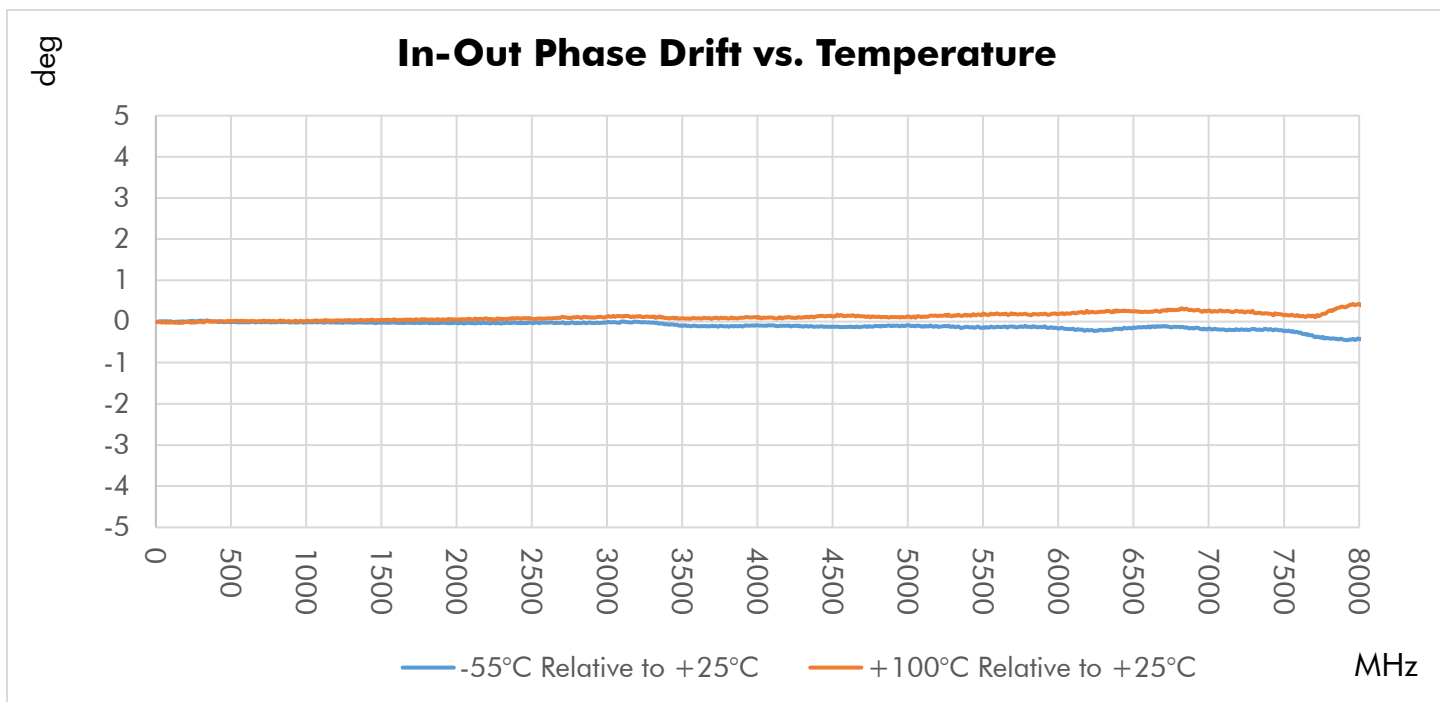
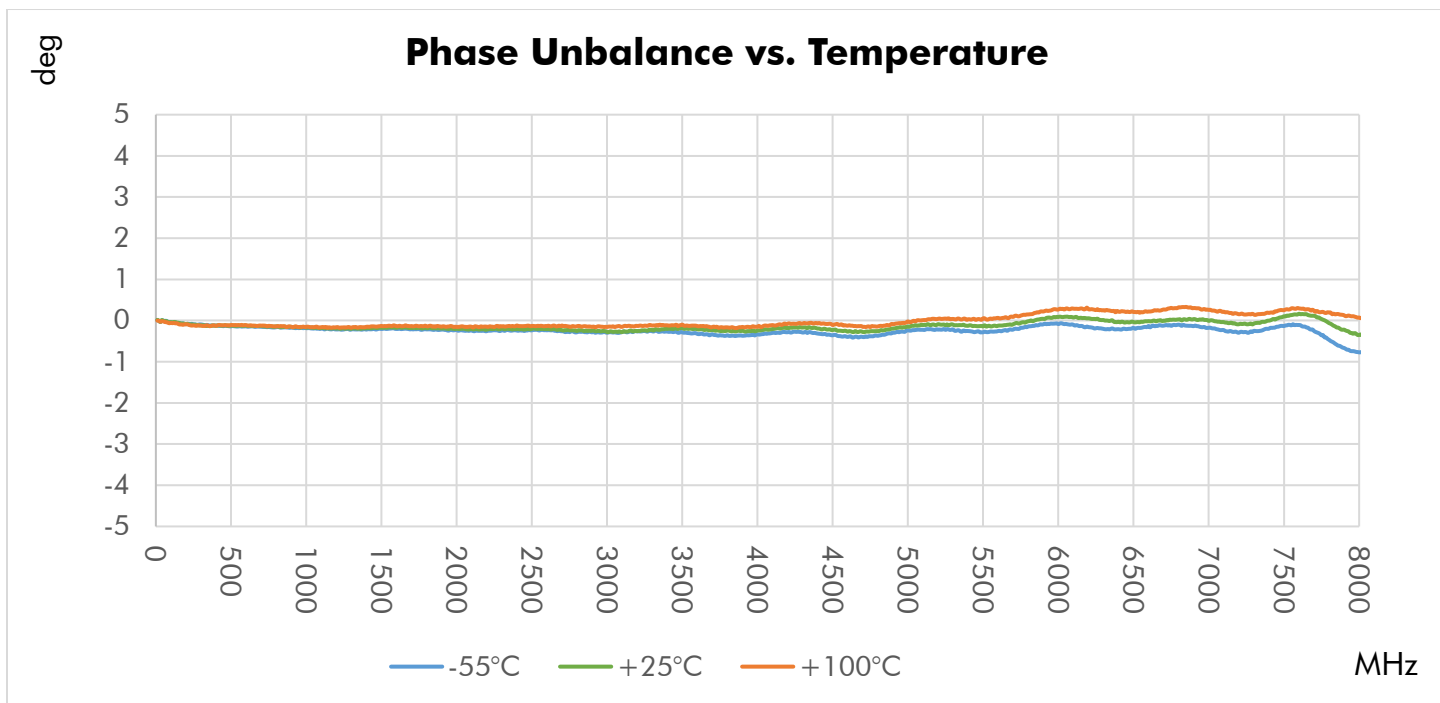
Typical Performance at +25 °C





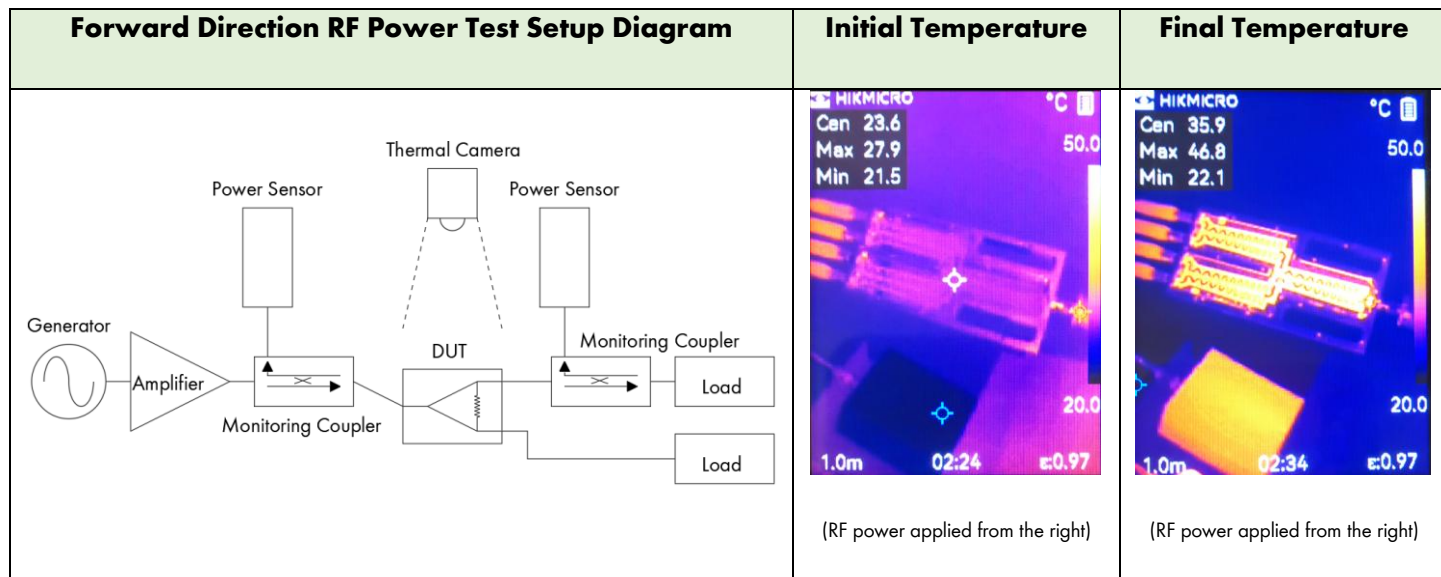
Typical Performance Over Temperature



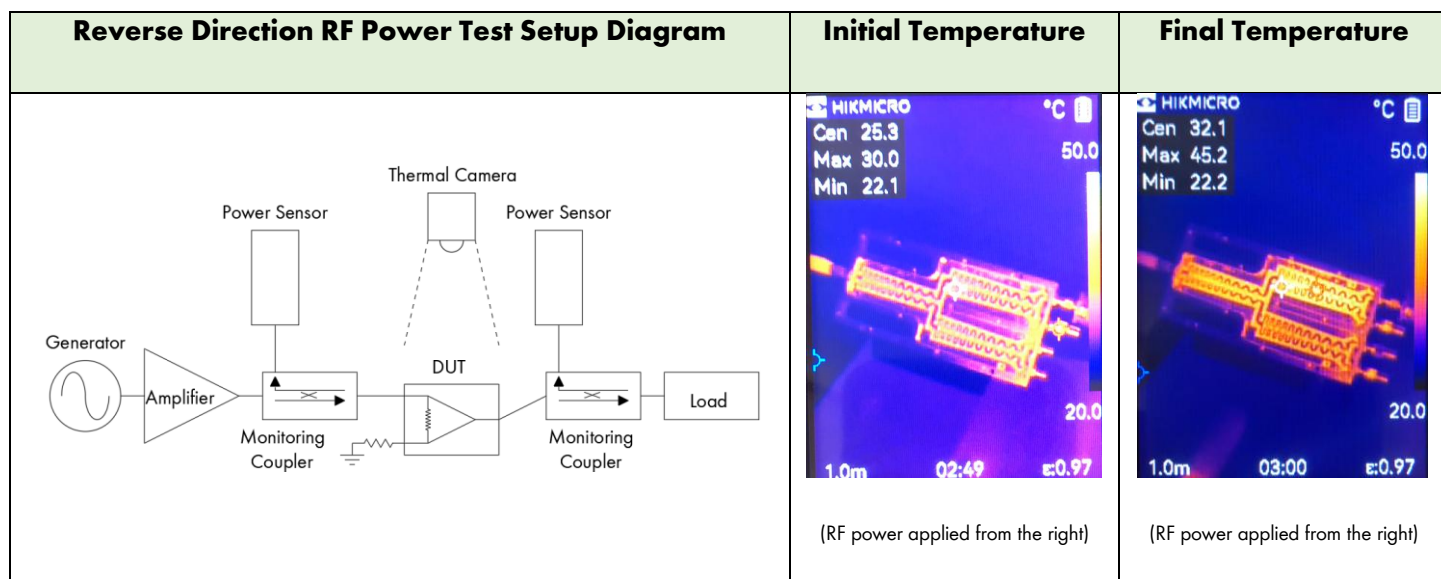


Reliability Testing

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.

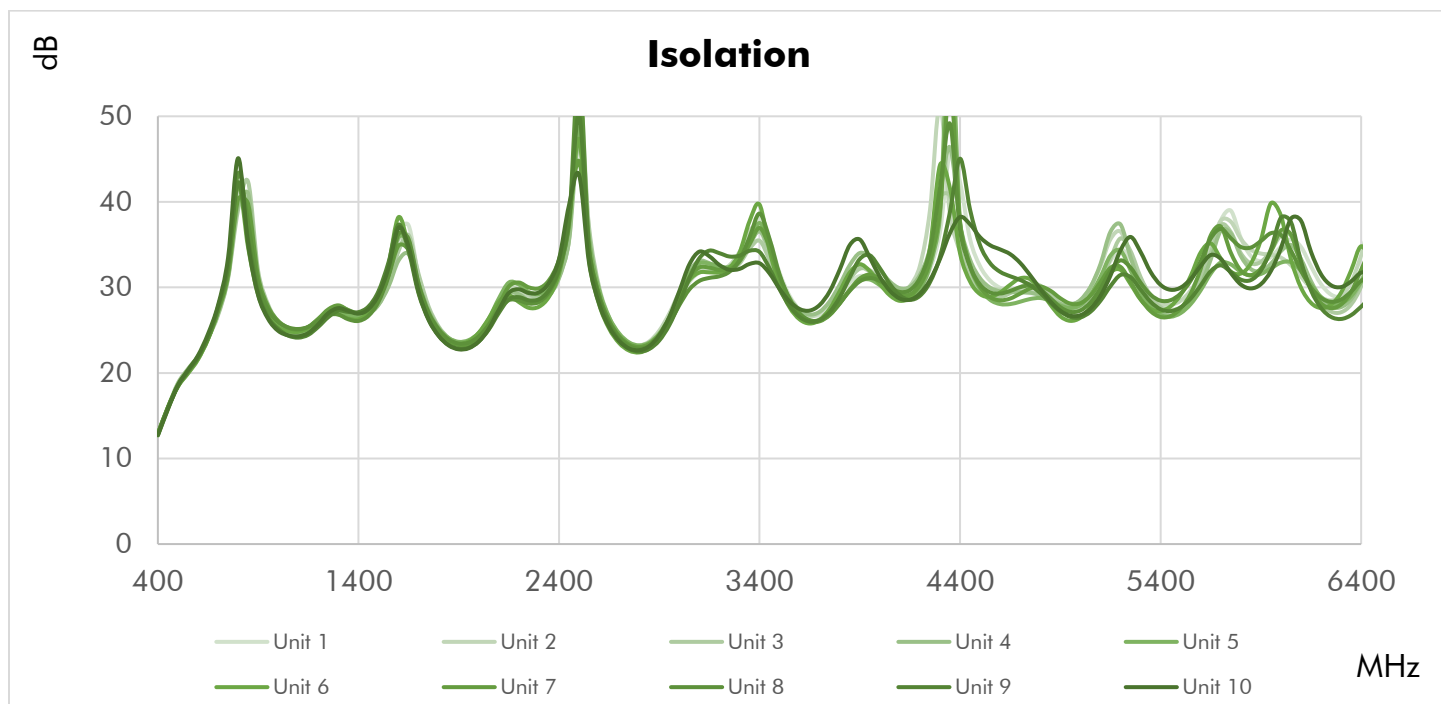
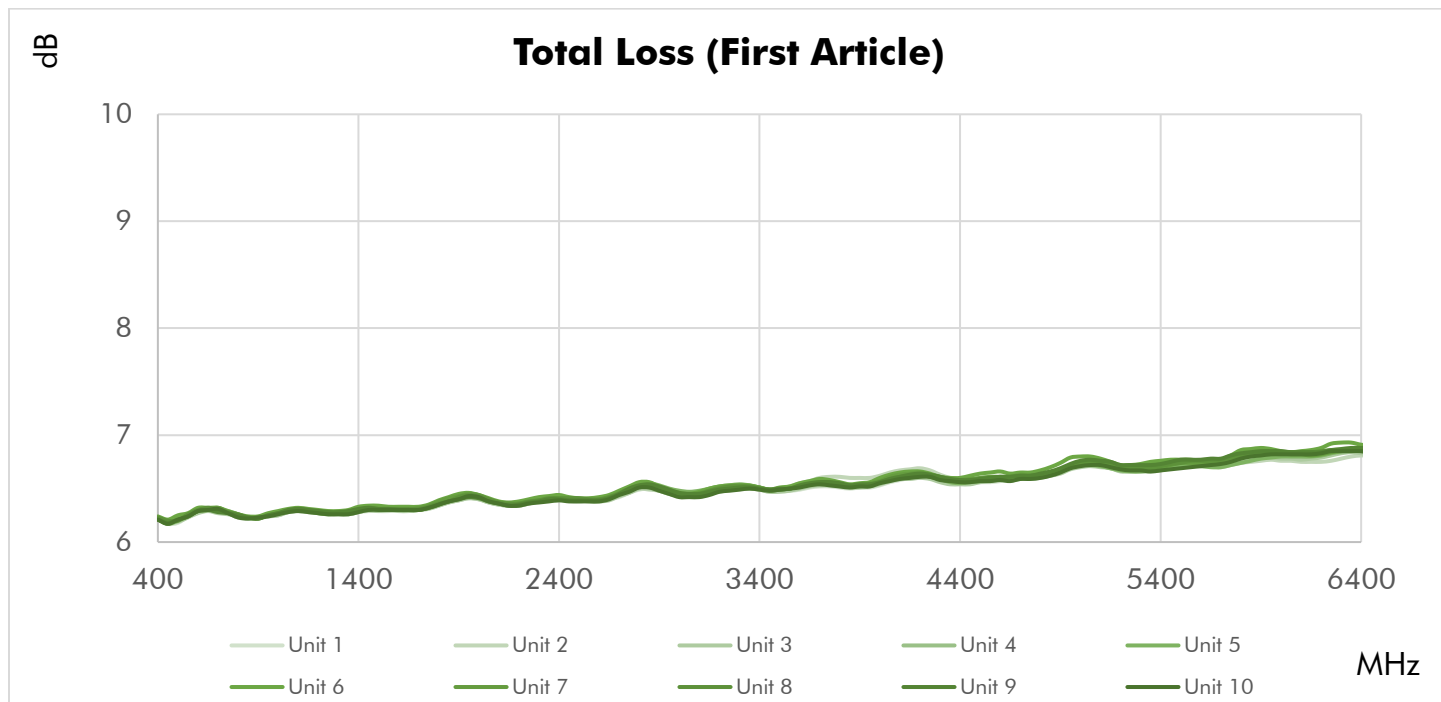


- 125 watts CW at 500MHz was applied to the DUT input for a duration of 10 minutes.
- The DUT temperature increased from 23.6°C (initial, center marker) to 46.8°C (final, max marker), resulting in a 23.2°C rise.



- 3 watts CW at 500MHz was applied to the DUT output for a duration of 10 minutes.
- The DUT temperature increased from 25.3°C (initial, center marker) to 45.2°C (final, max marker), resulting in a 19.9°C rise.

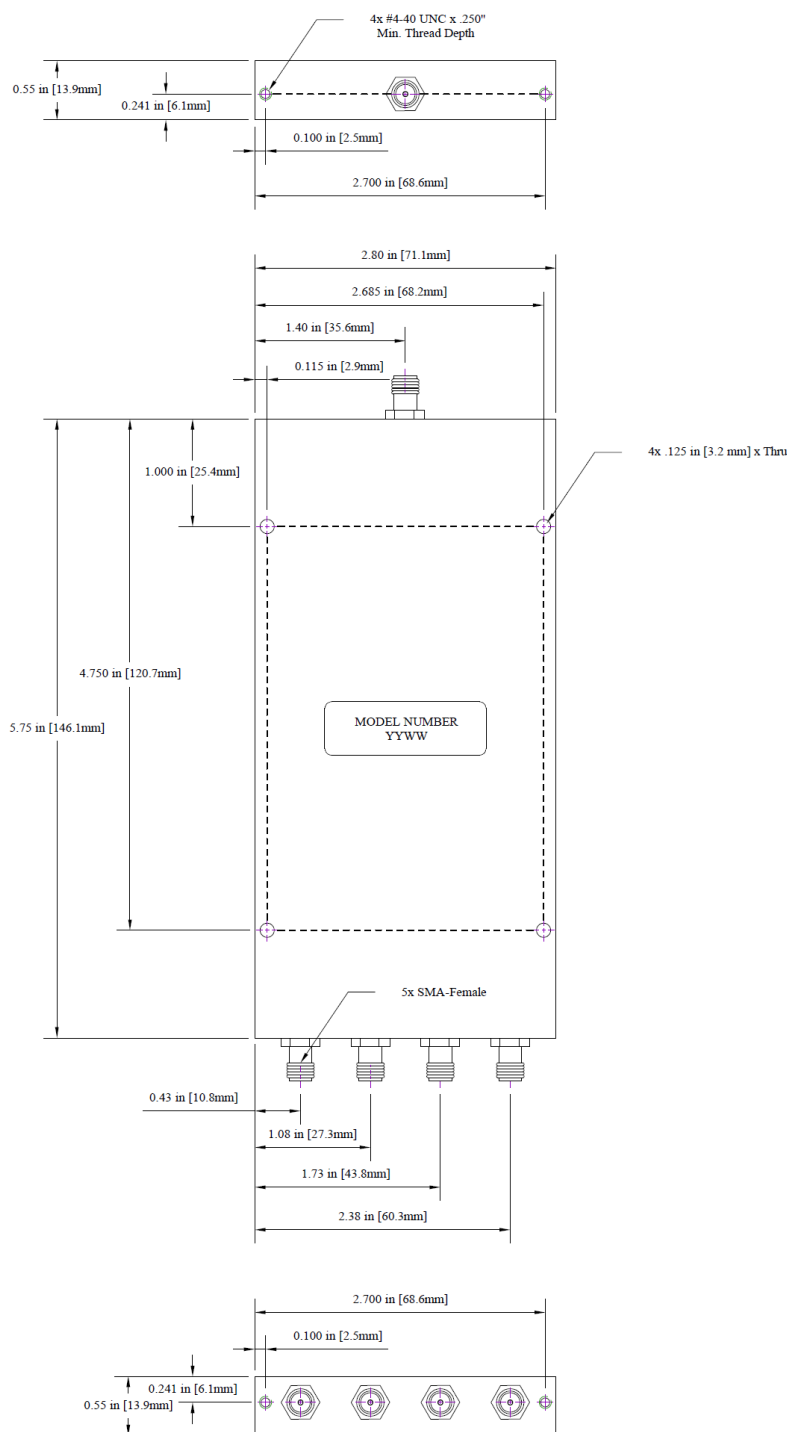
Repeatability in Production



Typical Performance Data

Frequency (MHz)	Return Loss (dB)			Total Loss (dB)		Isolation (dB)	
	Port S	Port 1	Port 4	S-1	S-4	1-2	1-4
500	25.8	30.0	30.6	6.18	6.21	18.3	23.7
555	19.1	28.6	28.8	6.25	6.27	20.3	24.9
610	16.8	26.7	27.0	6.30	6.31	22.0	26.6
665	16.3	25.3	25.6	6.33	6.33	24.4	28.9
720	17.0	24.7	25.0	6.31	6.32	27.7	32.1
775	19.1	24.9	25.2	6.29	6.29	33.1	37.0
830	23.6	26.1	26.5	6.26	6.27	48.9	46.6
885	35.7	28.1	28.8	6.25	6.26	34.3	41.7
940	29.1	30.7	31.9	6.27	6.27	28.6	35.5
995	22.2	31.5	33.3	6.29	6.30	26.1	32.6
1050	19.5	30.3	32.1	6.32	6.33	24.7	31.0
1490	22.5	24.2	25.6	6.35	6.35	26.6	34.8
2040	17.1	23.3	24.0	6.46	6.48	26.0	31.2
2480	21.0	22.6	24.9	6.45	6.44	36.2	42.1
3030	23.3	22.3	25.3	6.49	6.47	32.3	30.8
3525	23.6	23.8	28.7	6.54	6.52	32.3	41.3
4020	21.6	24.1	29.0	6.60	6.57	28.2	30.8
4515	27.5	25.5	39.7	6.59	6.58	31.4	38.1
5010	17.1	21.5	29.6	6.72	6.69	27.1	30.3
5505	20.9	22.8	31.1	6.76	6.71	26.1	44.8
6000	20.1	25.1	34.8	6.81	6.79	28.4	32.5

Outline Dimensions



Outline drawing: OL-4066

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.