

REPLACEMENT PART REFERENCE GUIDE, WP4GA+

AN-10-028

Original Part:	WP4G+	
Replacement Part:	WP4GA+	

Replacement Part has been judged by Mini-Circuits Engineering as a suitable replacement to Original Part.

MECHANICAL DIMENSIONS

Case Style: DQ1225

Both the WP4G+ and WP4GA+ uses the same case style DQ1225 case style.

CONCLUSION:

1) **FORM-FIT-FUNCTIONAL ANALYSIS**_a:

The Replacement Part WP4GA+ has the same form and fit as the original part WP4G+

The Replacement Part maximum power handling and operating temperature on the Absolute Maximum Table were changed. The Replacement Part's maximum input power as a splitter is now +34dBm instead of the Original Part's maximum input power as a splitter of 1.5W (+31.76dBm). Replacement Part's maximum internal dissipation power is now +25dBm instead of the Original Part's maximum internal dissipation power of 0.375W (+25.75dBm).

Additionally, the Replacement Part's maximum operating temperature is now +105°C instead of the Original Part's maximum operating temperature of 85°C

Replacement Part and Original Part feature the same expected performance. See section 2 for Min. Max and Typical performance and graphs.

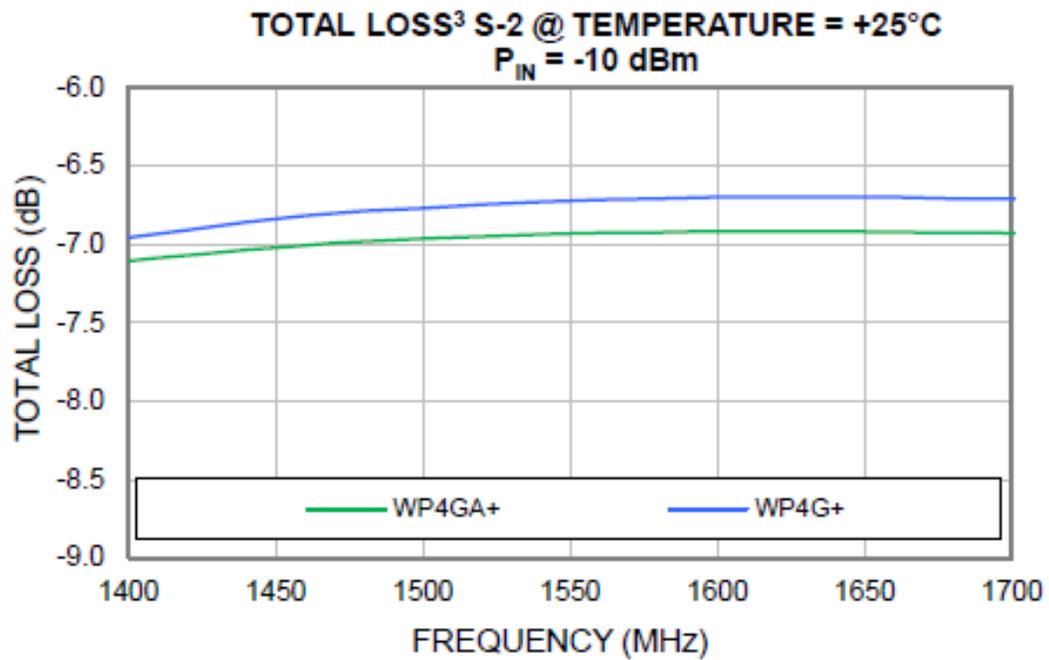
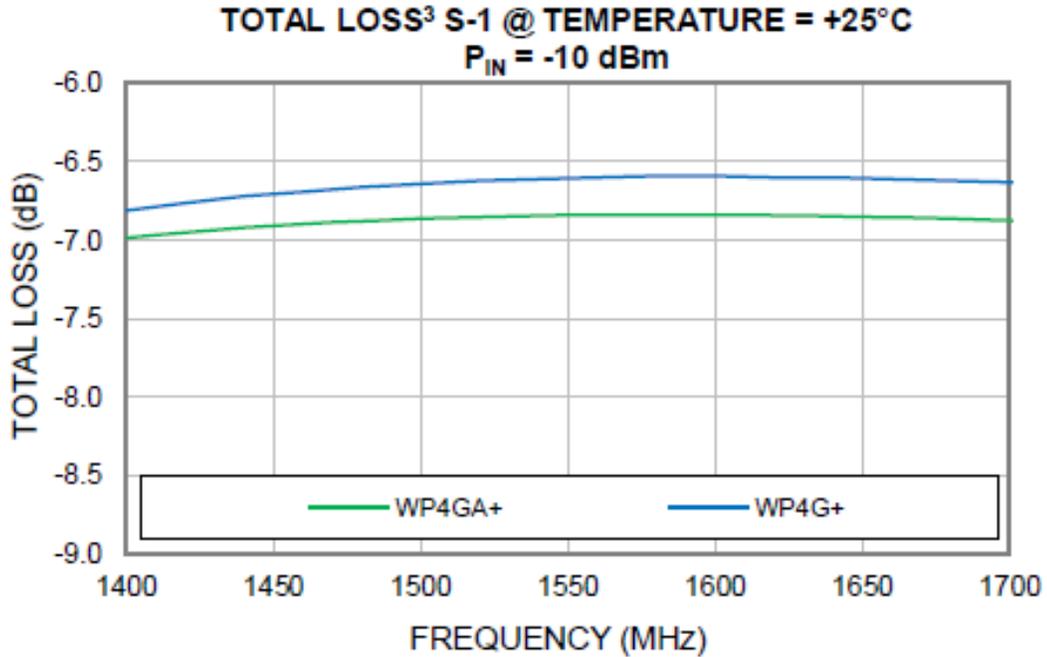
2) RF PERFORMANCE COMPARISON AT ROOM TEMPERATURE:

MODEL: WP4G+, WP4GA+

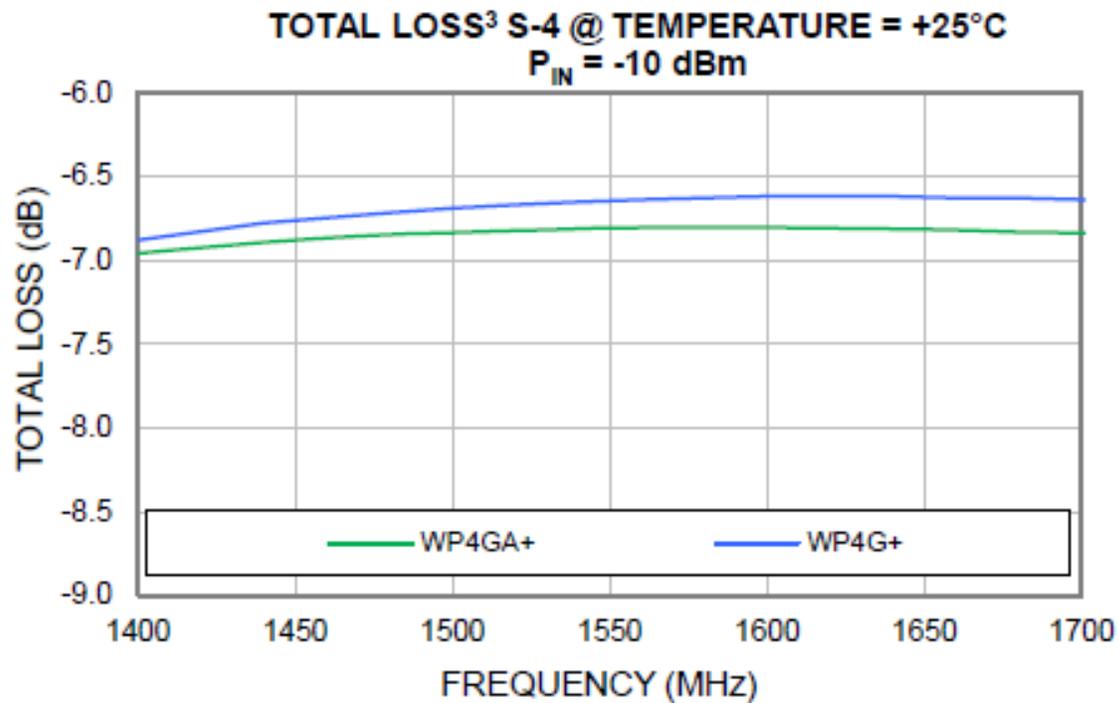
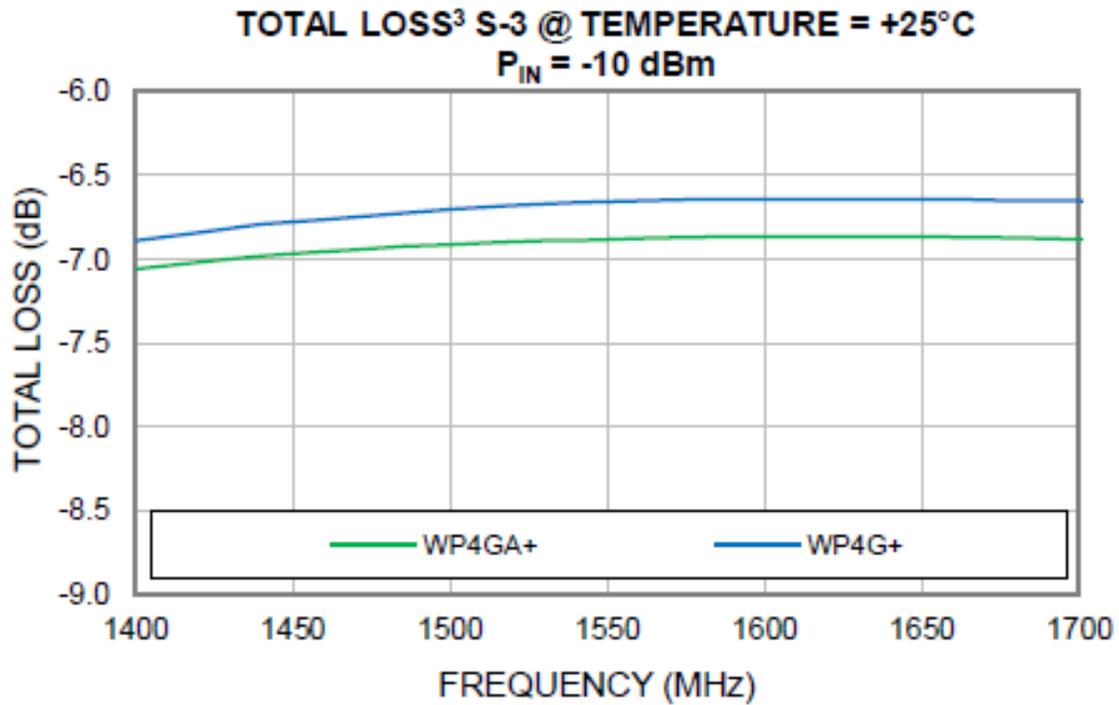
Parameter	Freq (MHz)		WP4G+			WP4GA+		
	From	To	Min.	Avg.	Max.	Min.	Avg.	Max.
INSERTION LOSS ¹ - Above 6dB (dB)	1420	1420					1.1	1.8
	1500	1500		0.7	1.4		1.0	1.7
	1660	1660					1.0	1.7
ISOLATION (dB)	1420	1420					28	
	1500	1500	19	28			29	
	1660	1660					27	
AMPLITUDE UNBALANCE (dB)	1420	1420					0.16	0.6
	1500	1500			0.5		0.16	0.6
	1660	1660					0.14	0.6
PHASE UNBALANCE (Deg)	1420	1420					1.6	7
	1500	1500			4.0		1.6	7
	1660	1660					1.7	7
RETURN LOSS - PORT 1,2,3,4 ² (dB)	1420	1420					18	
	1500	1500		15.6			18	
	1660	1660					17	
RETURN LOSS - SUM (dB)	1420	1420					22	
	1500	1500		19.1			21	
	1660	1660					14	

1. Typical insertion loss displayed are the worsted case among Port1, Port 2, Port 3, and Port 4
2. Typical return loss displayed are the worsted case among Port1, Port 2, Port 3, and Port 4

3) TYPICAL PERFORMANCE GRAPHS AT ROOM TEMPERATURE:

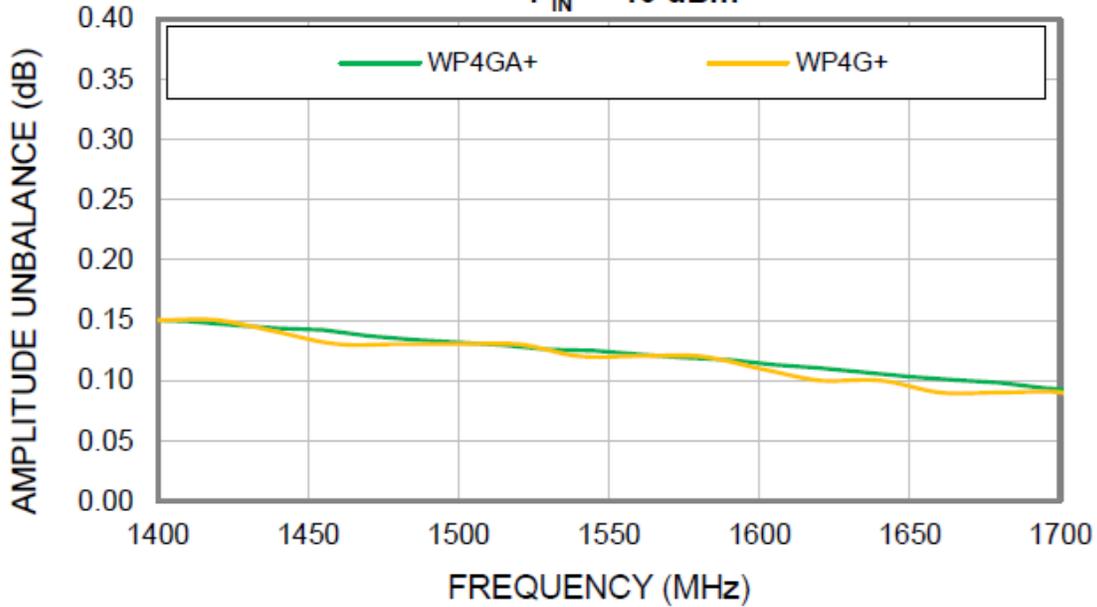


3. Total Loss = Single Path (S-1 or S-2 or S-3 or S-4) Insertion Loss + 6 dB Splitter Loss

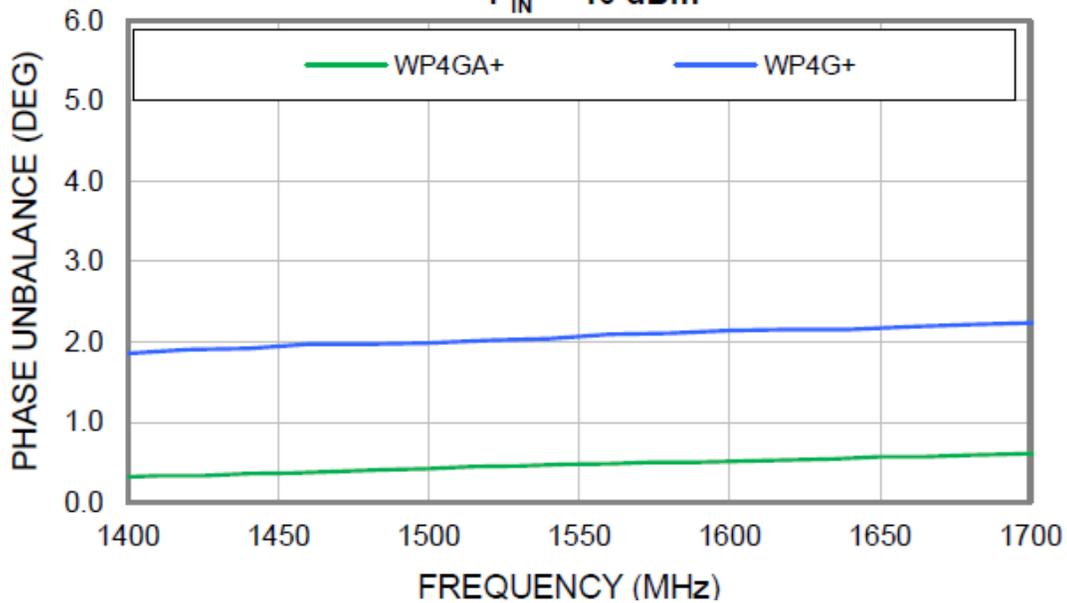


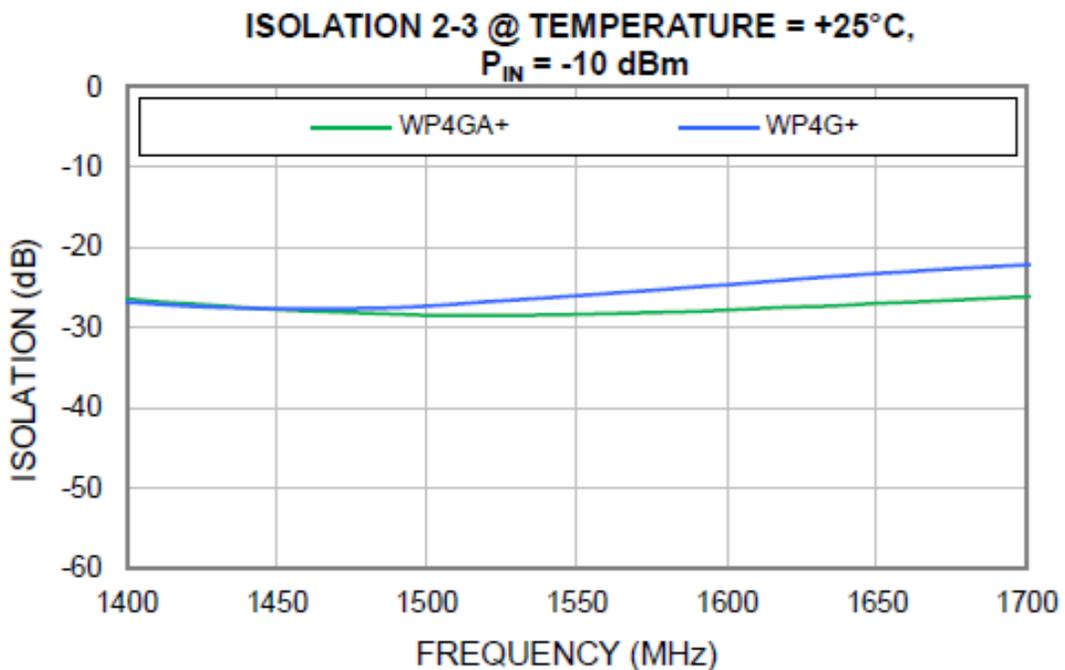
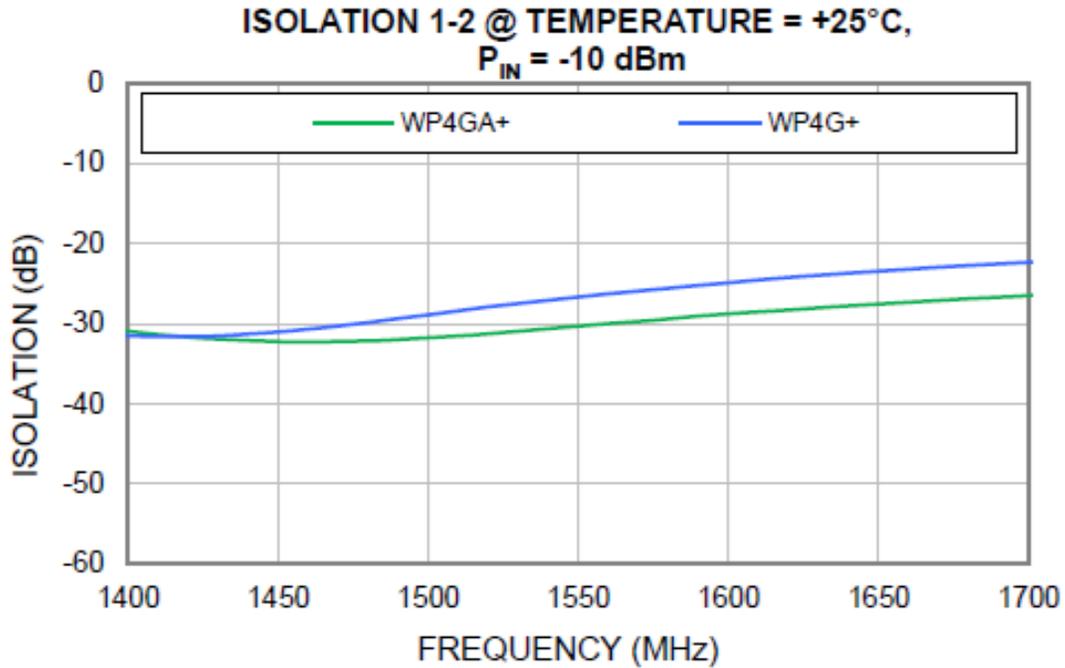
3. Total Loss = Single Path (S-1 or S-2 or S-3 or S-4) Insertion Loss + 6 dB Splitter Loss

**AMPLITUDE UNBALANCE @ TEMPERATURE = +25°C,
P_{IN} = -10 dBm**

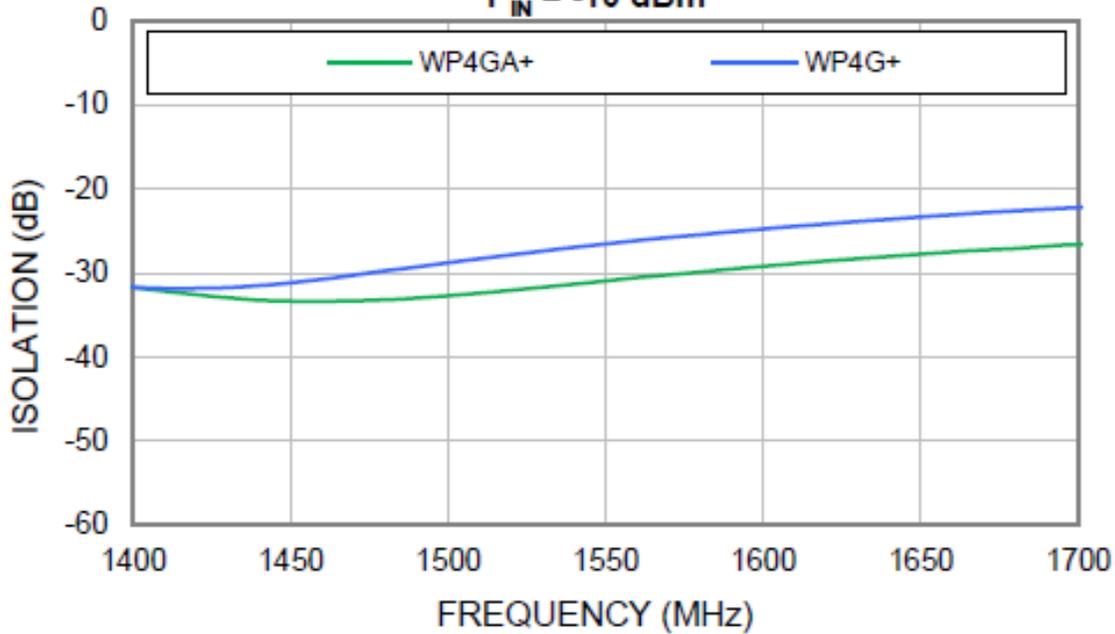


**PHASE UNBALANCE @ TEMPERATURE = +25°C,
P_{IN} = -10 dBm**

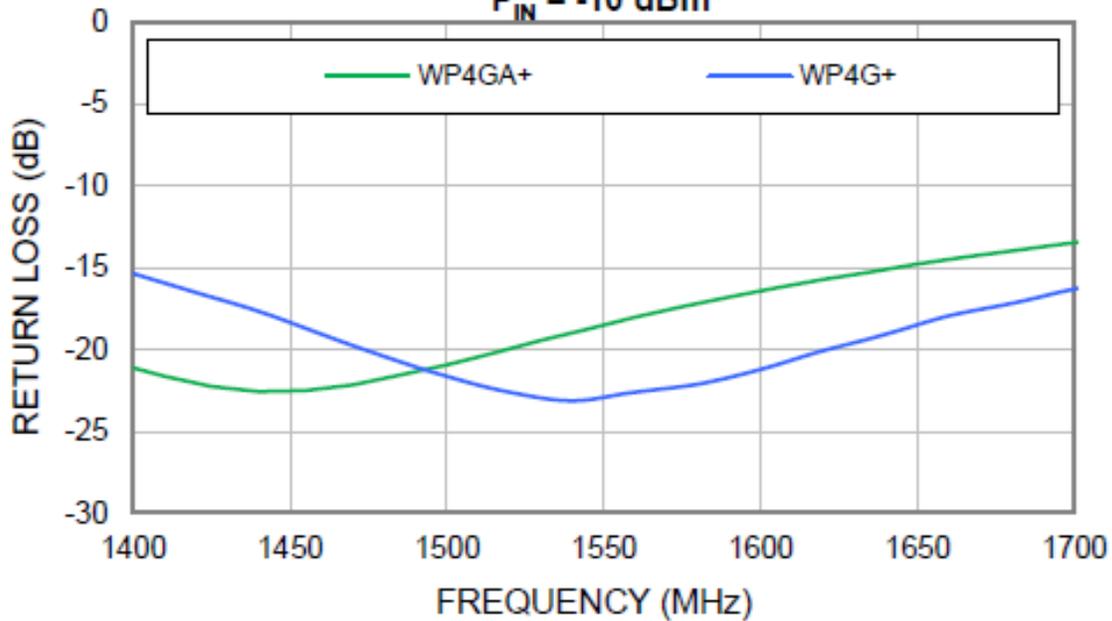


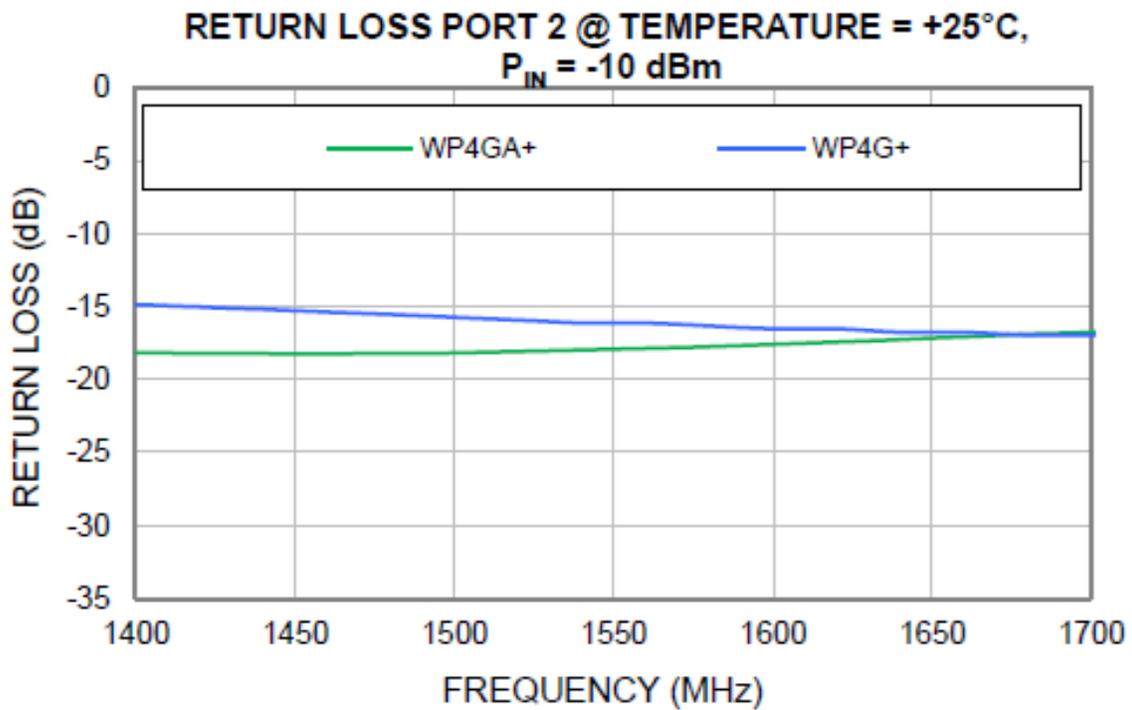
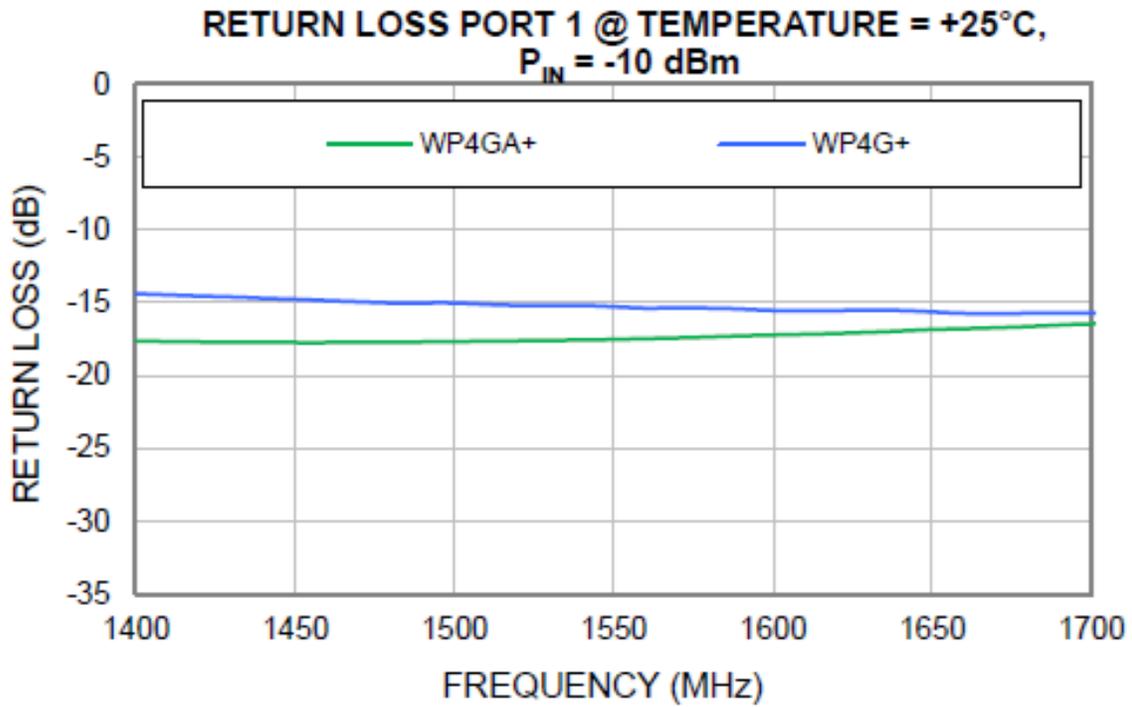


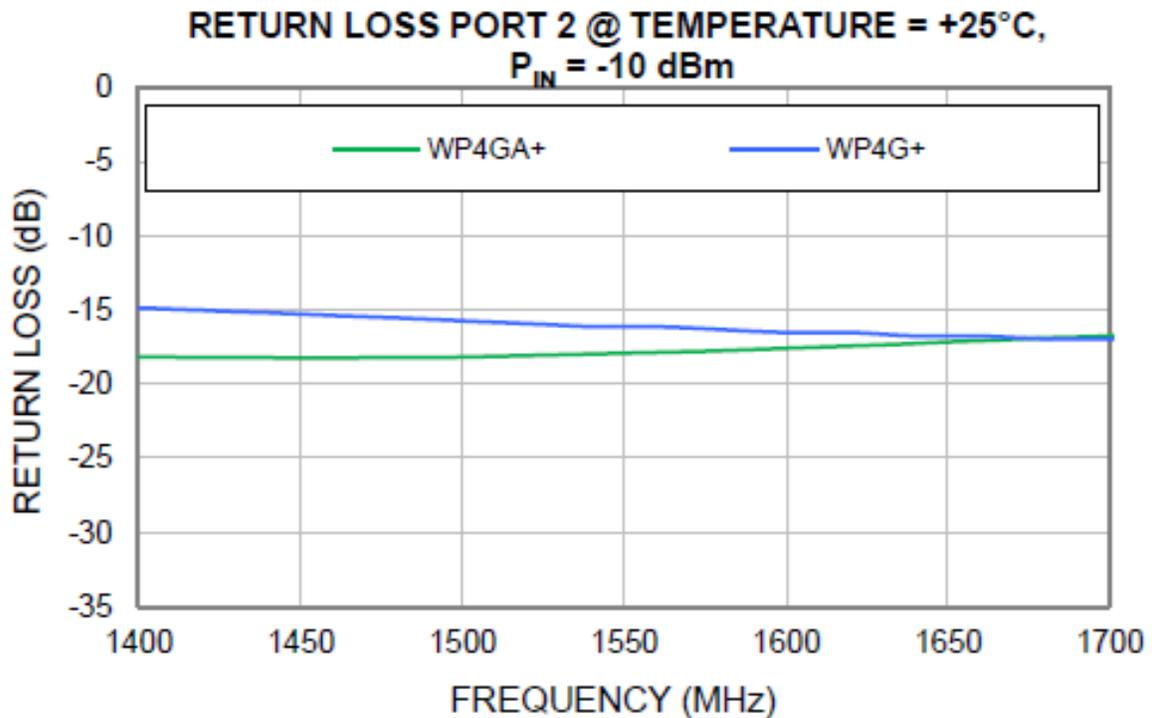
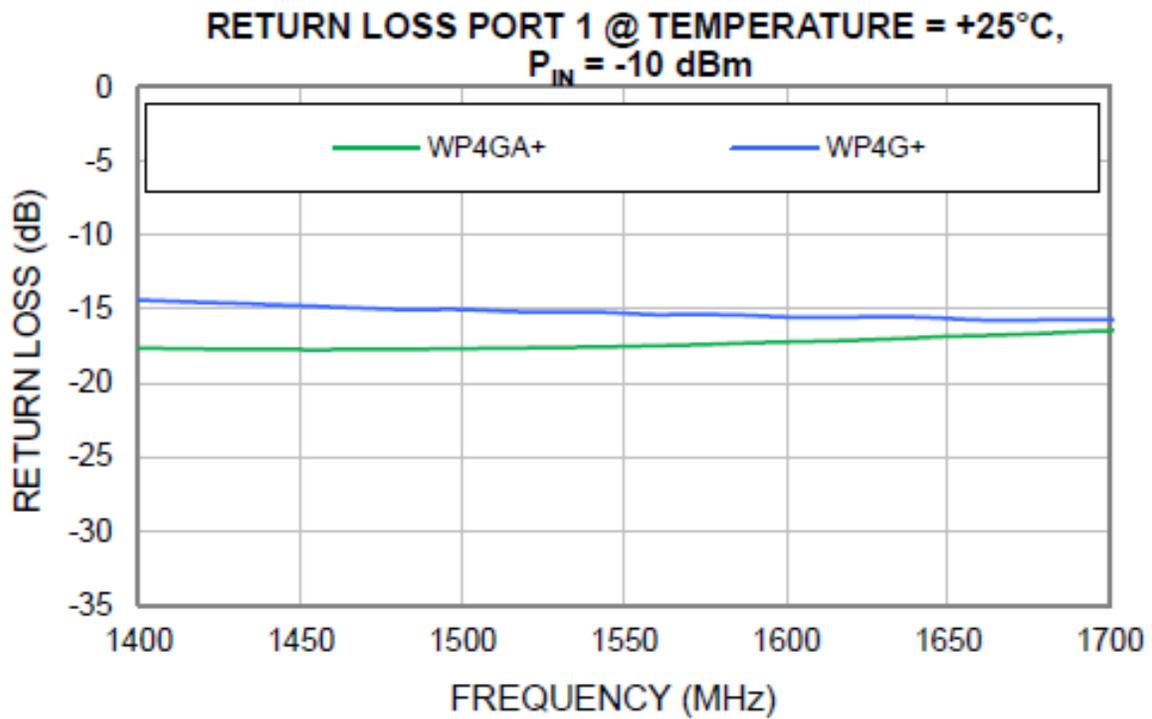
**ISOLATION 3-4 @ TEMPERATURE = +25°C,
P_{IN} = -10 dBm**



**RETURN LOSS PORT S @ TEMPERATURE = +25°C,
P_{IN} = -10 dBm**









© 2015 Mini-Circuits

IMPORTANT NOTICE

This document is provided as an accommodation to Mini-Circuits customers in connection with Mini-Circuits parts only. In that regard, this document is for informational and guideline purposes only. Mini-Circuits assumes no responsibility for errors or omissions in this document or for any information contained herein.

Mini-Circuits may change this document or the Mini-Circuits parts referenced herein (collectively, the "Materials") from time to time, without notice. Mini-Circuits makes no commitment to update or correct any of the Materials, and Mini-Circuits shall have no responsibility whatsoever on account of any updates or corrections to the Materials or Mini-Circuits' failure to do so. Mini-Circuits customers are solely responsible for the products, systems, and applications in which Mini-Circuits parts are incorporated or used. In that regard, customers are responsible for consulting with their own engineers and other appropriate professionals who are familiar with the specific products and systems into which Mini-Circuits' parts are to be incorporated or used so that the proper selection, installation/integration, use and safeguards are made. Accordingly, Mini-Circuits assumes no liability therefore.

In addition, your use of this document and the information contained herein is subject to Mini-Circuits' standard terms of use, which are available at Mini-Circuits' website at www.minicircuits.com/homepage/terms_of_use.html.

Mini-Circuits and the Mini-Circuits logo are registered trademarks of Scientific Components Corporation d/b/a Mini-Circuits. All other third-party trademarks are the property of their respective owners. A reference to any third-party trademark does not constitute or imply any endorsement, affiliation, sponsorship, or recommendation: (i) by Mini-Circuits of such third-party's products, services, processes, or other information; or (ii) by any such third-party of Mini-Circuits or its products, services, processes, or other information.