REPLACEMENT PART REFERENCE GUIDE, GP2S1A+

AN-10-025

Original Part:	GP2S1+	
Replacement Part:	GP2S1A+	

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

MECHANICAL DIMENSIONS

Case Style: DQ1225
Both the GP2S1A+ and GP2S1+ uses the same case style DQ1225 case style.

CONCLUSION:

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

The Replacement Part GP2S1A+ has the same form and fit as he original part GP2S1+

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 +40dBm at 25C 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 +35dBm at 25C instead of the Original Part's maximum internal dissipation power of 0.75W (+28.75dBm).

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.

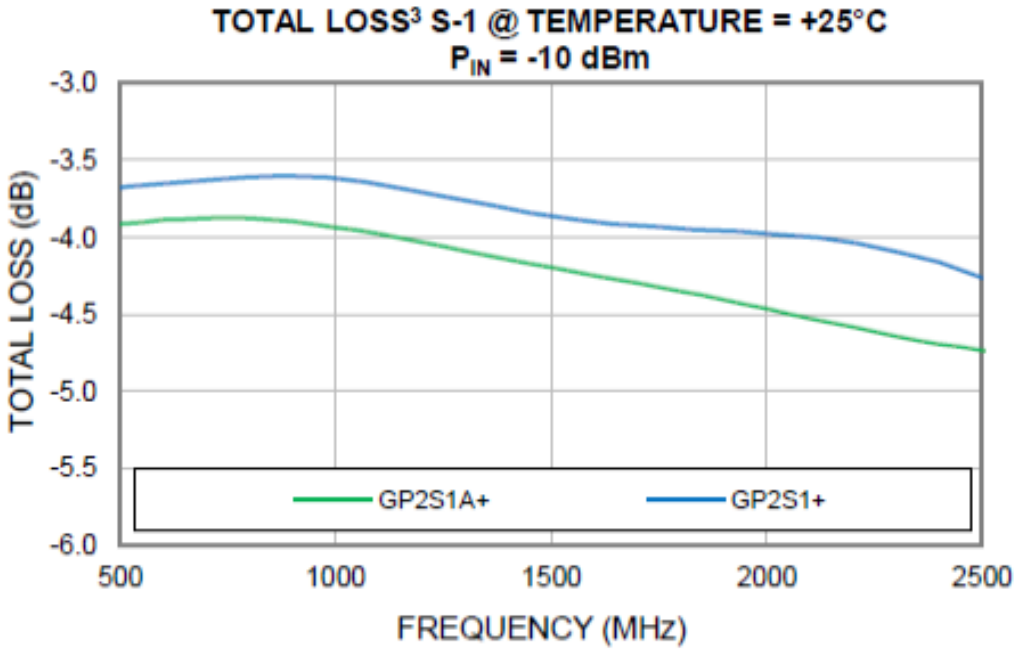
2) RF PERFORMANCE COMPARISON AT ROOM TEMPERATURE:

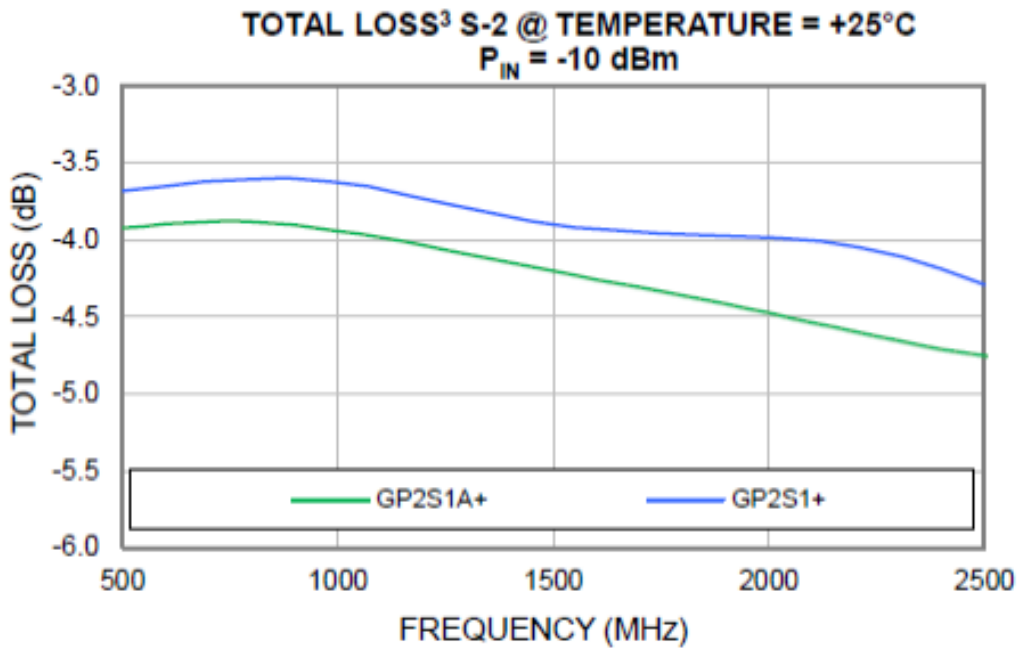
MODEL: GP2S1+, GP2S1A+

Parameter	Freq (MHz)		GP2S1+			GP2S1A+		
	From	To	Min.	Avg.	Max.	Min.	Avg.	Max.
INSERTION LOSS[1] - Above 3dB (dB)	500	500					0.9	1.3
	1500	1500		0.9	1.8		1.0	1.4
	2500	2500					1.5	1.8
ISOLATION (dB)	500	500				8	12	
	1500	1500	9	20		17	22	
	2500	2500				15	19	
AMPLITUDE UNBALANCE (dB)	500	500					0.01	0.2
	1500	1500			0.2		0.02	0.2
	2500	2500					0.02	0.2
PHASE UNBALANCE (Deg)	500	500					0.1	2
	1500	1500			5.0		0.4	3
	2500	2500					0.6	4
RETURN LOSS - PORT 1,2[2] (dB)	500	500					20	
	1500	1500		17.7			26	
	2500	2500					19	
RETURN LOSS - SUM (dB)	500	500					15	
	1500	1500		20.8			22	
	2500	2500					17	

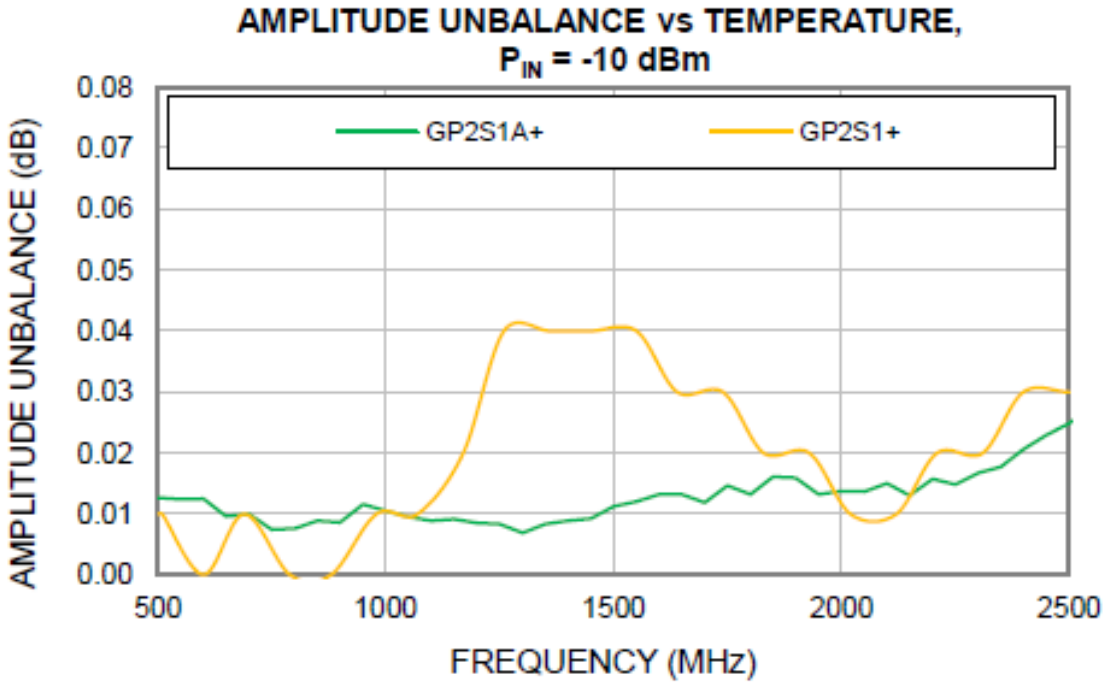
1. Typical insertion loss displayed are the worst case among Port 1 and Port 2.
2. Typical return loss displayed are the worst case among Port 1 and Port 2.

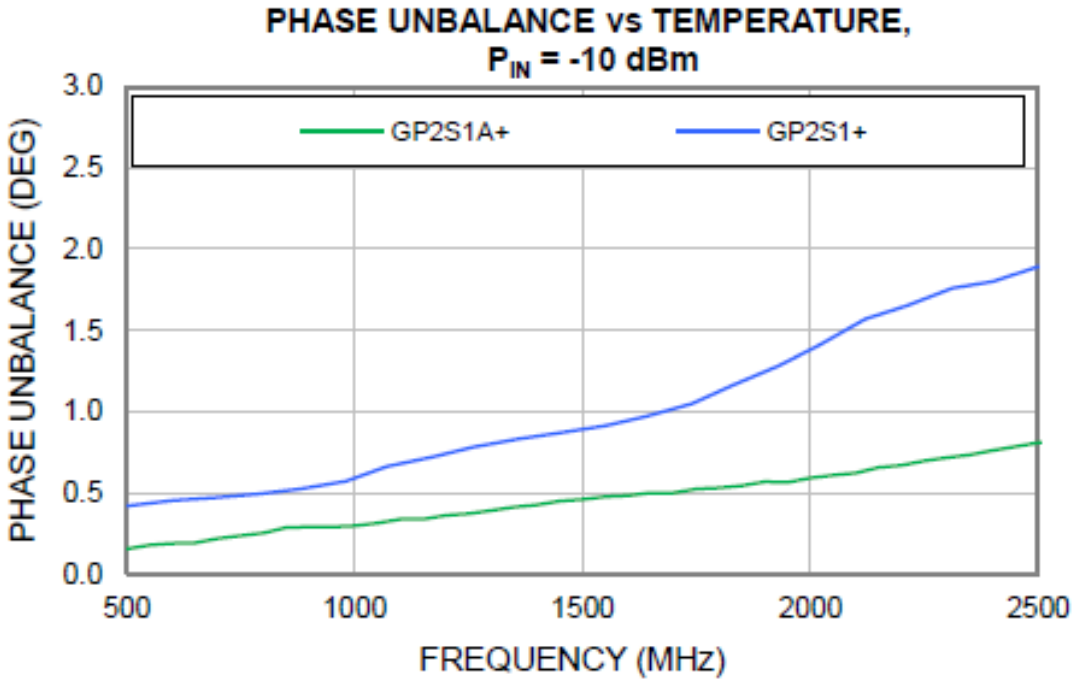
3) TYPICAL PERFORMANCE GRAPHS AT ROOM TEMPERATURE:

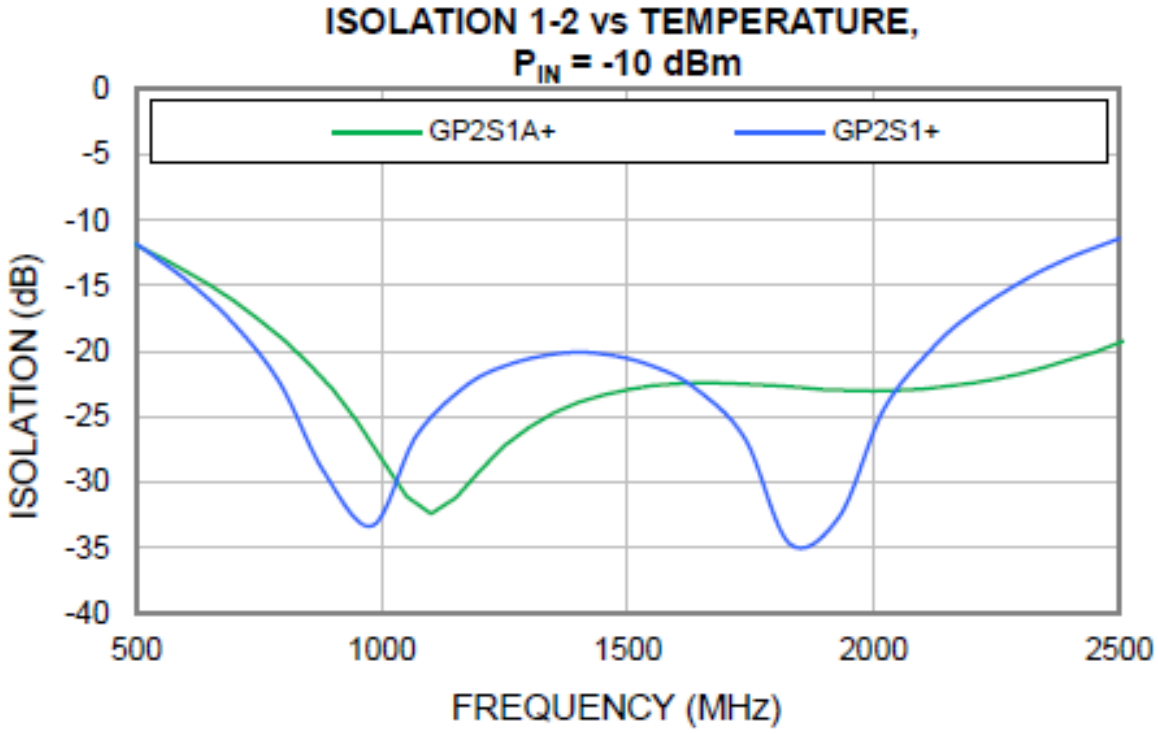


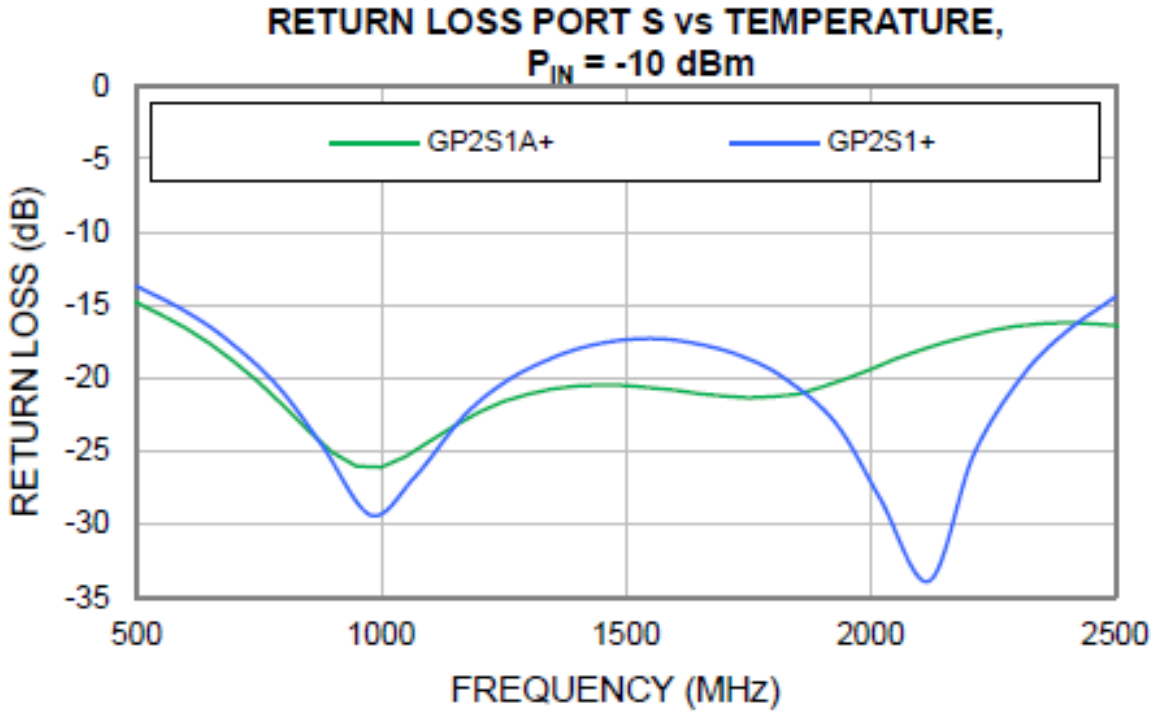


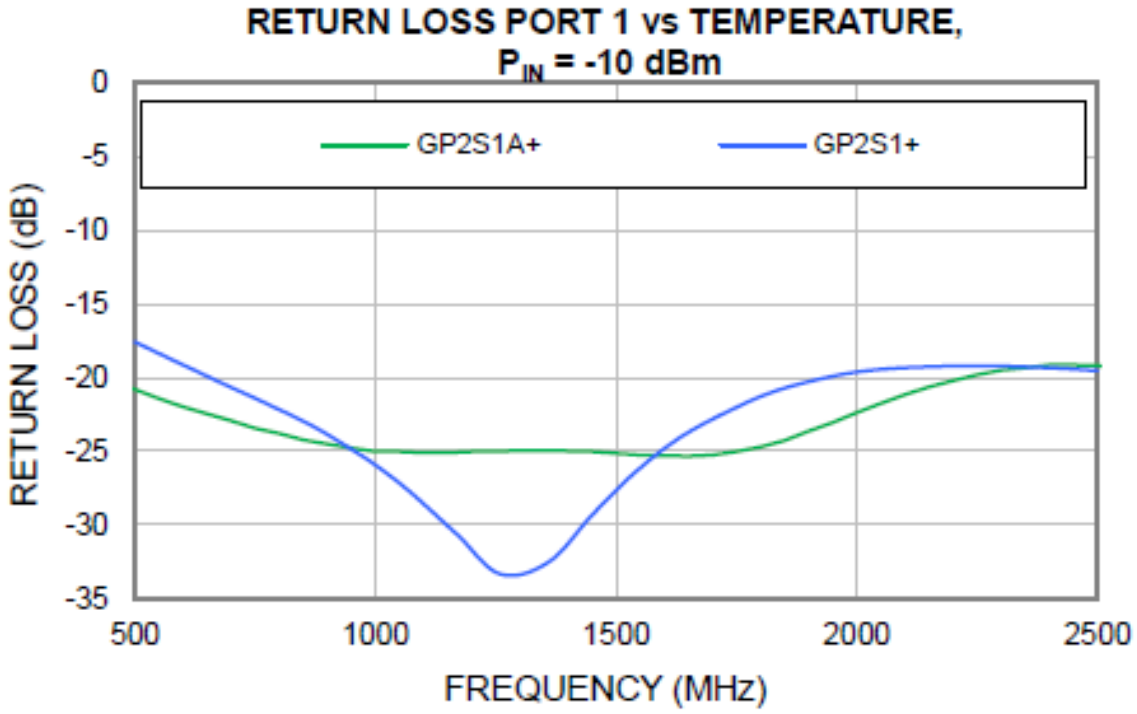
3. Total Loss = Single Path (S-1 or S-2) Insertion Loss + 3 dB Splitter Loss

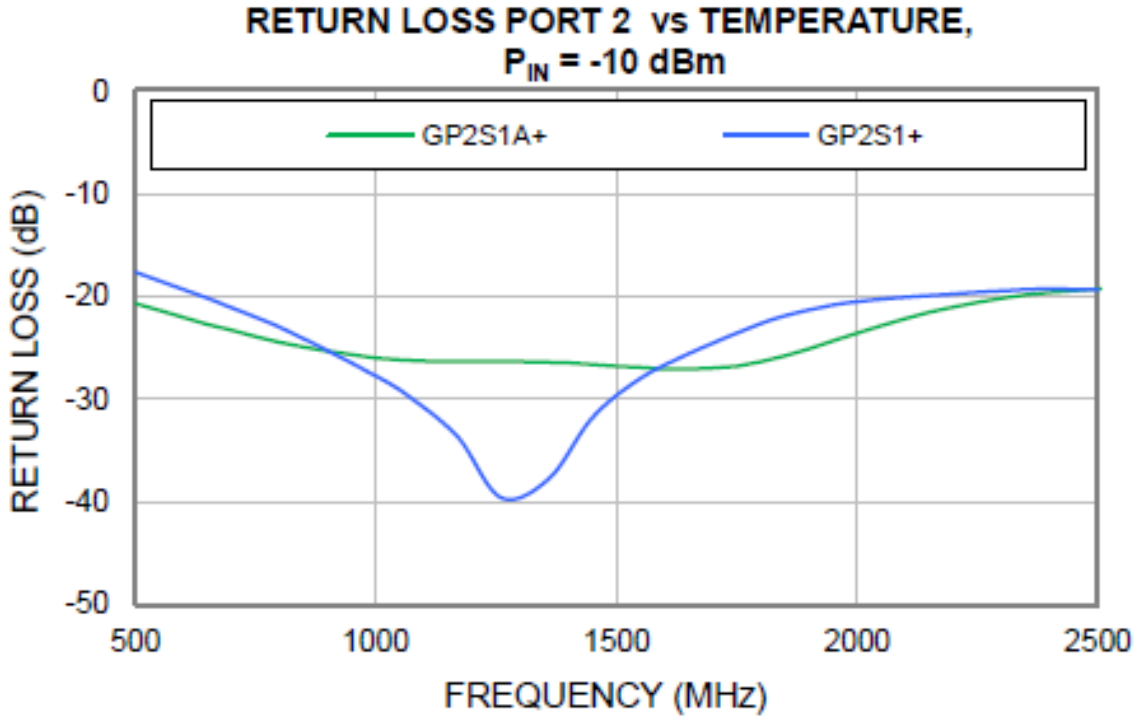












IMPORTANT NOTICE