


REPLACEMENT PART REFERENCE GUIDE, **ZHL-10W-202X-S+ and ZHL-10W-202-S+**

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

ORIGINAL PART:	ZHL-10W-202X-S+ ZHL-10W-202-S+	
REPLACEMENT PART:	ZHL-10M2G0010X+ ZHL-10M2G0010+	

Note: This replacement part reference guide is applicable for the ZHL-10W-202X-S+ (amplifier without heatsink) and the ZHL-10W-202-S+ (amplifier with heatsink). The heatsink properties and dimensions for the original part and the replacement part are the same.

MECHANICAL DIMENSIONS

Case Style: BT1689-1

Replacement part uses same case style as original part.

CONCLUSION:

1) FORM-FIT-FUNCTIONAL ANALYSIS_a:

The Replacement Part is Form, Fit compatible.

Following is a summary of changes/improvements in the electrical specification:

Parameter	Original Part ZHL-10W-202X-S+	Replacement Part ZHL-10M2G0010X+
Gain	+44 dBm, Min +56 dBm, Max	+45 dBm, Min +55 dBm, Max
Gain Flatness	±2.7 dB, Max	±2.5 dB, Max
PSat	+39 dBm, Min	+40 dBm, Min
Input Return Loss	No Min Spec Specified	7.3 dB, Min
Output Return Loss	No Min Spec Specified	4.4 dB, Min
DC Supply Voltage	+30 V, Max	+32 V, Max
DC Supply Current	5 A, Max	3.5 A, Max
DC Supply Current with Fan	No Max Spec Specified	3.9 A, Max

For typical performance and graphs: See paragraphs 2 and 3

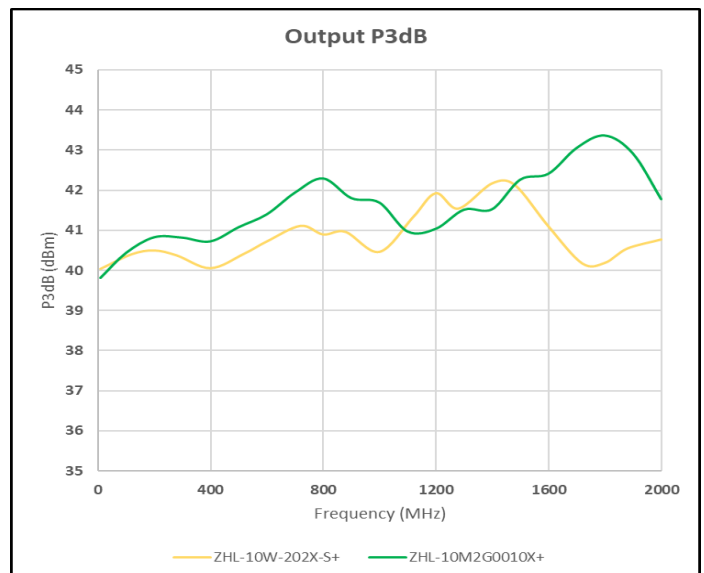
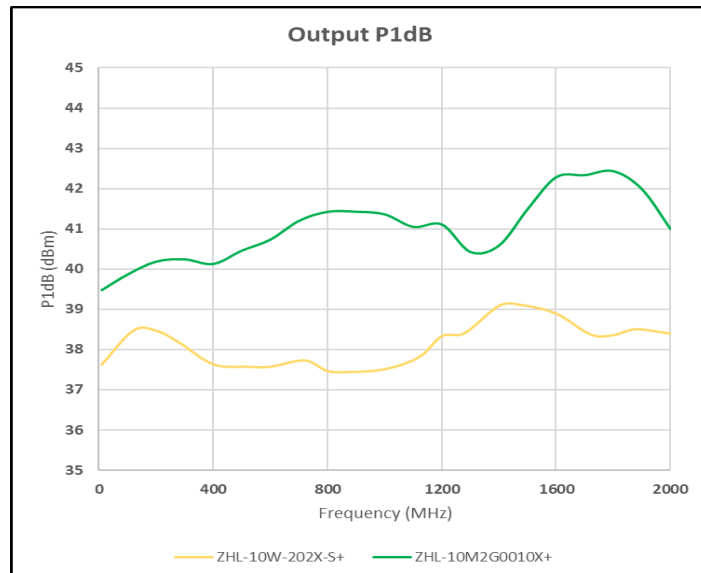
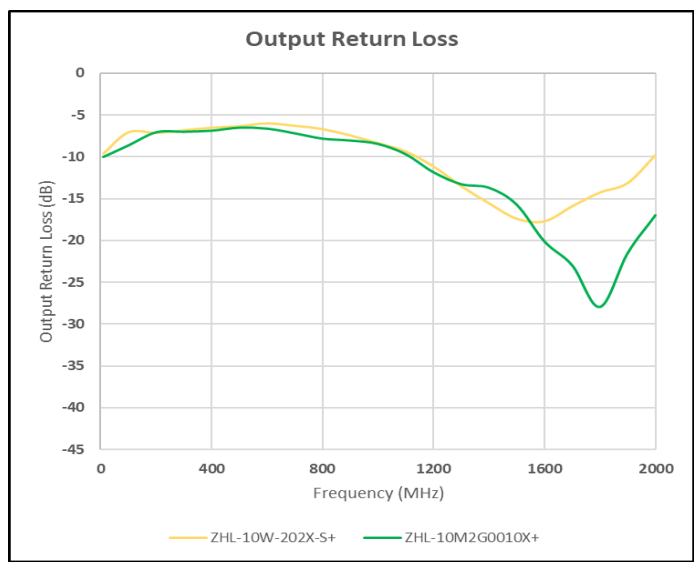
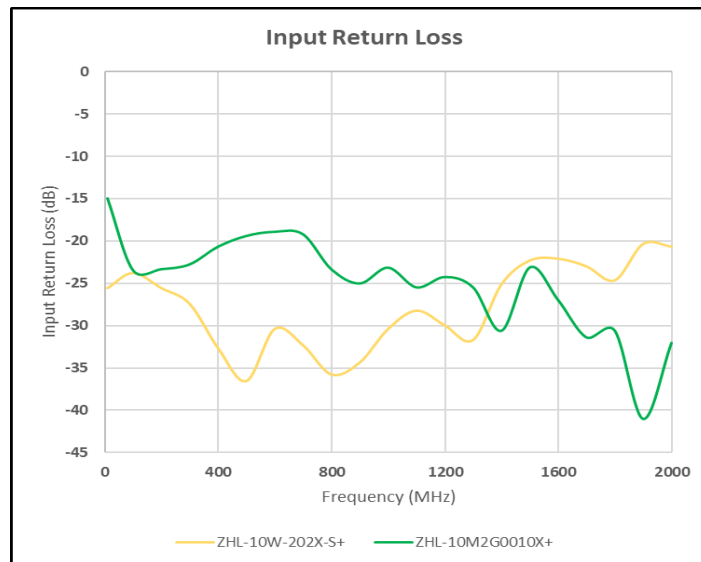
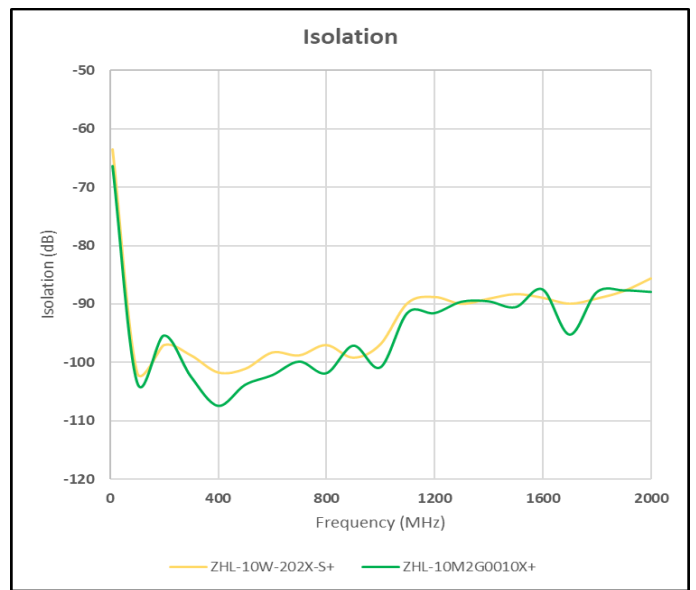
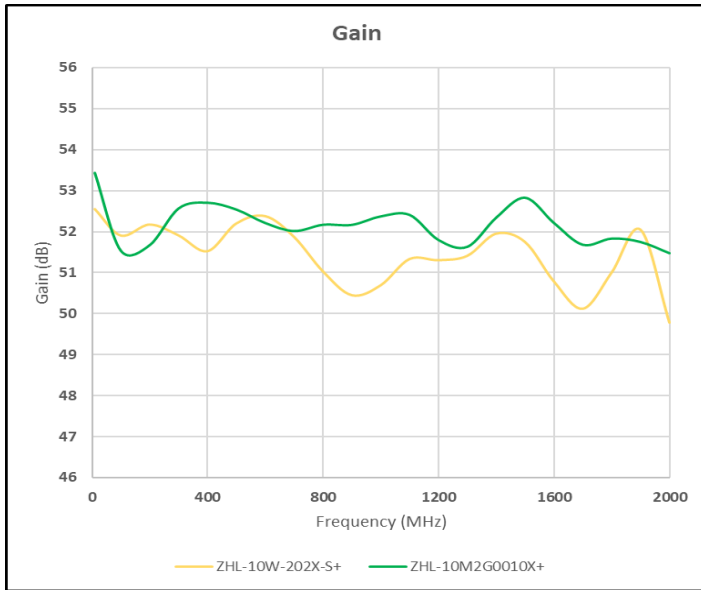
2) TYPICAL PERFORMANCE COMPARISON AT ROOM TEMPERATURE:

MODEL: ZHL-10W-202X-S+ (Original), ZHL-10M2G0010X+ (Replacement) (RF Parameters)

RF Parameter	Frequency MHz		Original Design @ 10 Units ZHL-10W-202(X)-S+			Replacement Design @ 5 Units ZHL-10M2G0010(X)+		
	From	To	Min	Avg	Max	Min	Avg	Max
Gain (dB)	10	2000	49.18	51.48	53.20	50.64	52.13	54.13
Gain Flatness (dB)	10	2000	1.23	1.43	1.73	1.10	1.20	1.38
Isolation (dB)	10	2000	59.04	95.98	135.79	64.26	95.16	125.78
P1dB (dBm)	10	1000	34.49	38.14	39.96	39.27	41.03	42.63
P3dB (dBm)	10	1000	39.69	40.81	42.25	39.69	41.64	43.54
PSat (dBm)	10	2000	40.75	42.07	43.00	40.63	42.24	43.99
Input Return Loss (dB)	10	2000	18.15	29.93	50.23	13.64	25.17	48.13
Output Return Loss (dB)	10	2000	5.76	8.22	19.73	6.21	12.33	36.39
DC Current (A)	10	2000	1.50	1.52	1.54	1.23	1.29	1.32

Please note that data compiled above and plotted on next page is for ZHL-10W-202X-S+ and ZHL-10M2G0010X+ (models without heatsink). Similar performance can be expected between the model supplied without heatsink and the model supplied with heatsink.

3) TYPICAL PERFORMANCE GRAPHS AT ROOM TEMPERATURE:





© 2023 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.