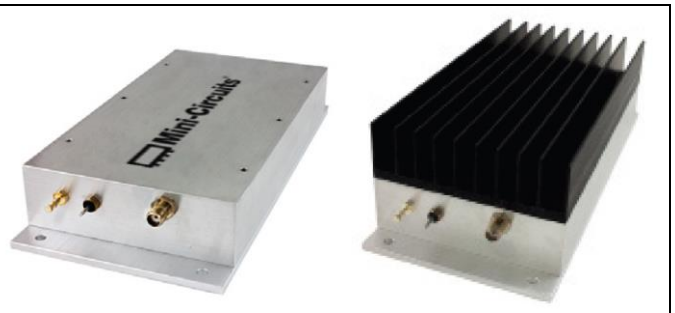
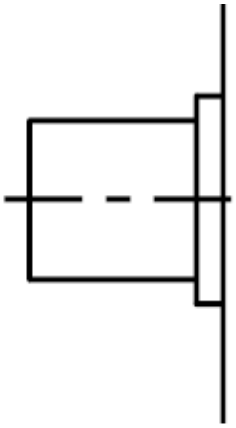
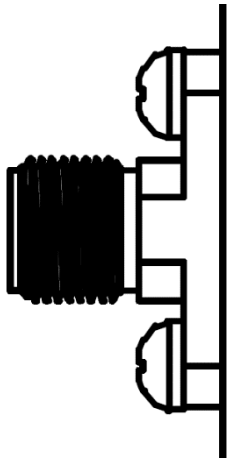
REPLACEMENT PART REFERENCE GUIDE, ZHL-42X+ and ZHL-42+

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

ORIGINAL PART:	ZHL-42X+ ZHL-42+	
REPLACEMENT PART:	ZHL-0G64G21W0X+ ZHL-0G64G21W0+	

Note: This replacement part reference guide is applicable for the ZHL-42X+ (amplifier without heatsink) and the ZHL-42+ (amplifier with heatsink). The heatsink properties and dimensions for the original part and the replacement part are the same.

MECHANICAL DIMENSIONS

Case Style: U36	
Replacement part uses same case style as original part.	
Original Part ZHL-42X+	**Replacement Part ZHL-0G64G21W0X+**
	

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-42X+	Replacement Part ZHL-0G64G21W0X+
Operating DC Voltage (Typ.)	15 V	28 V
DC Voltage (Max.)	20 V	30 V
Gain	35 dB Min 42 dB Max	38 dB Min 43 dB Max
Gain Flatness	±1.3 Max	±1.1 Max
Input VSWR (:1)	2.5 Max	2.4 Max
Output VSWR (:1)	2.5 Max	2.4 Max

For typical performance and graphs: See paragraphs 2 and 3

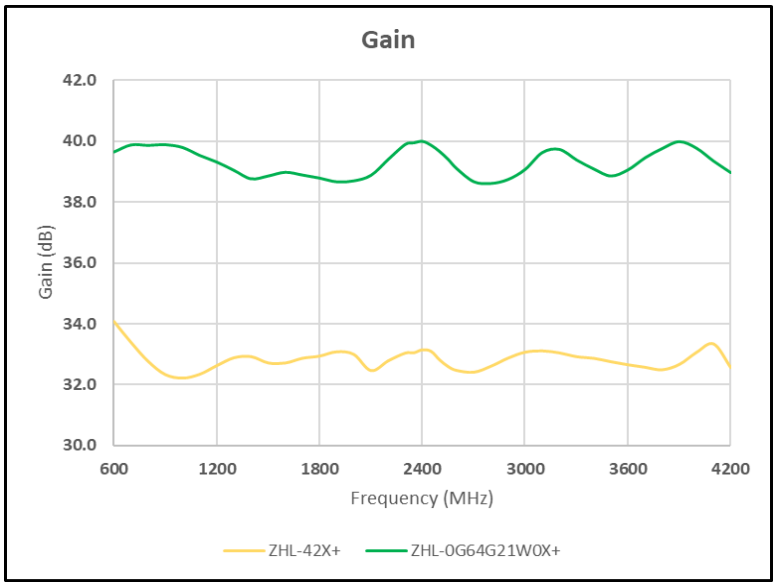
2) TYPICAL PERFORMANCE COMPARISON AT ROOM TEMPERATURE:

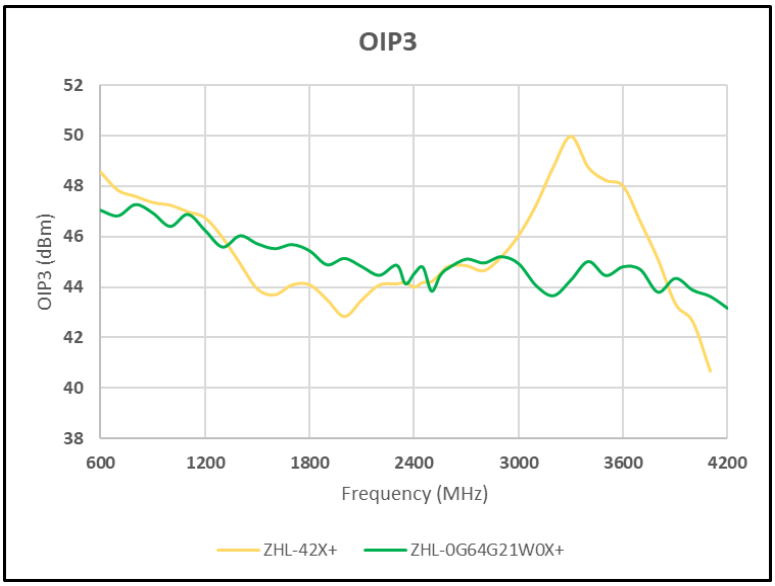
MODEL: ZHL-42X+ (Original), ZHL-0G64G21W0X+ (Replacement) (RF Parameters)

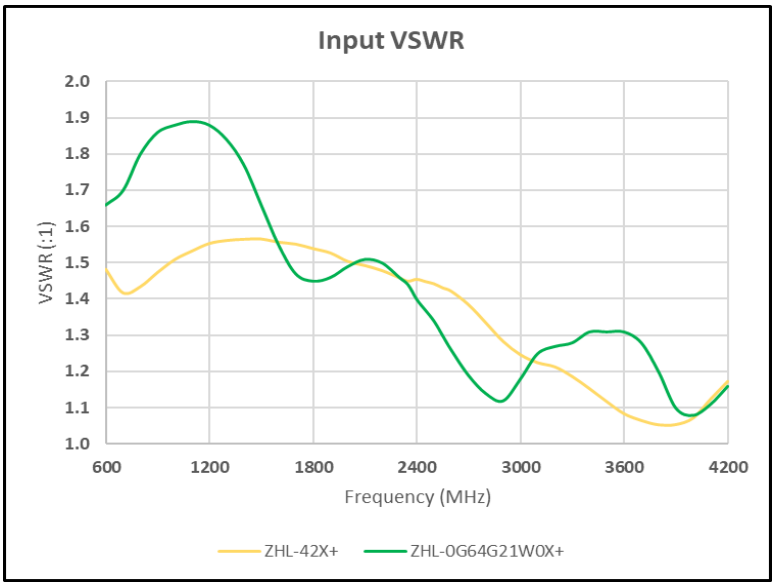
Parameter	Frequency MHz		Original Design @ 2 Units ZHL-42X+			Replacment Design @ 5 Units ZHL-0G64G21W0X+		
	From	To	Min	Avg	Max	Min	Avg	Max
Gain (dB)	600	4200	31.32	32.82	34.69	38.25	39.30	40.27
Gain Flatness (dB)	600	4200	0.84	0.95	1.07	0.69	0.82	0.92
P1dB (dBm)	600	4200	27.86	31.34	33.05	29.59	32.10	34.82
P3dB (dBm)	600	4200	28.17	31.73	33.46	31.99	34.32	36.90
OIP3 Worse of Upper/Lower (dBm)	600.0001	4200	36.32	46.26	54.23	42.81	45.16	48.10
Input VSWR (:1)	600	4200	1.01	1.36	1.59	1.00	1.44	1.96
Output VSWR (:1)	600	4200	1.05	1.66	2.31	1.00	1.56	2.12
DC Current (mA)	600	4200	781	792	803	824	832	852

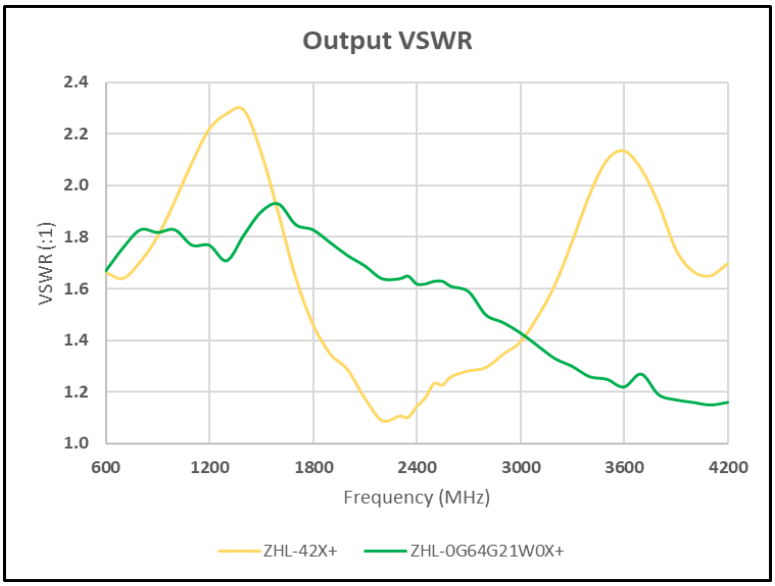
Please note that data compiled above is for ZHL-42X+ and ZHL-0G64G21W0X+ (models without heatsink). Similar performance can be expected between the model supplied without heatsink and the model supplied with heatsink.

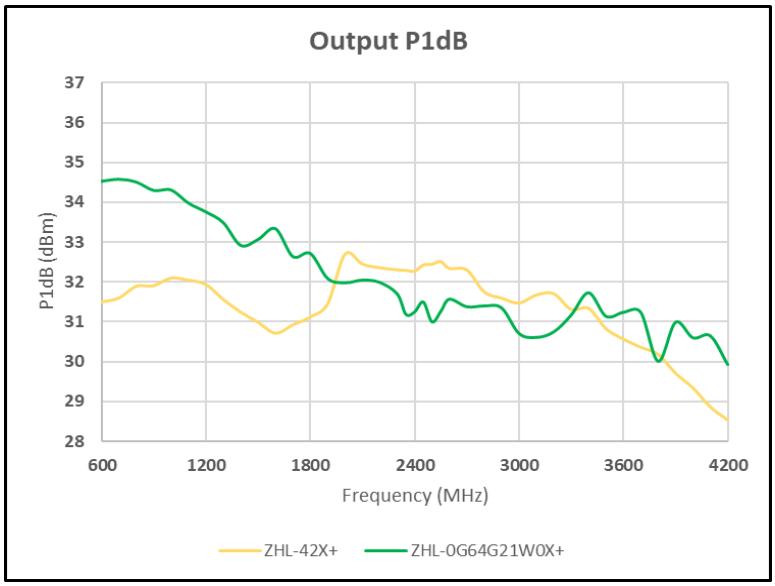
3) **TYPICAL PERFORMANCE GRAPHS AT ROOM TEMPERATURE**:

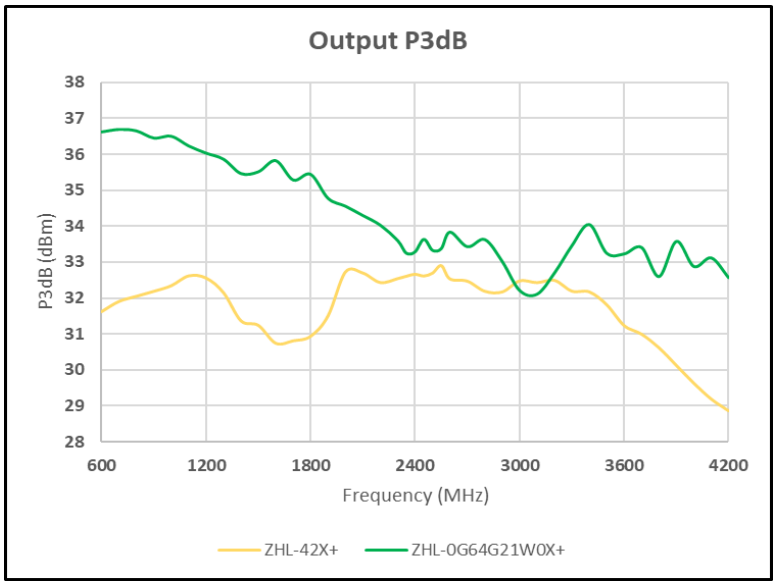












Please note that data compiled above is for ZHL-42WX+ and ZHL-0G64G21W0X+ (models without heatsink). Similar performance can be expected between the model supplied without heatsink and the model supplied with heatsink.

IMPORTANT NOTICE