REPLACEMENT PART REFERENCE GUIDE,
HPA-25W-272+

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

ORIGINAL PART:	HPA-25W-272+	
REPLACEMENT PART:	HPA-20M2G7025+	

MECHANICAL DIMENSIONS

Case Style: NG1942-1
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 HPA-25W-272+	Replacement Part HPA-20M2G7025+
Gain	+44 dB, Min +56 dB, Max	+45 dB, Min +55 dB, Max
Gain Flatness	±2.1 dB, Max	±2.0 dB, Max
P1dB	No Min Spec Specified	+36 dBm, Min
P3dB	No Min Spec Specified	+40 dBm, Min
PSat	No Min Spec Specified	+42 dBm, Min
OIP3	No Min Spec Specified	+40 dBm, Min
Input VSWR	No Max Spec Specified	2.5:1, Max
Output VSWR	No Max Spec Specified	5:1, Max

For typical performance and graphs: See paragraphs 2 and 3

2) TYPICAL PERFORMANCE COMPARISON AT ROOM TEMPERATURE:

MODEL: ZHL-25W-272X + (Original), ZHL-20M2G7025X+ (Replacement) (RF Parameters)

RF Parameter	Frequency MHz		Original Design @ 2 Units ZHL-25W-272(X)+			Replacement Design @ 5 Units ZHL-20M2G7025(X)+		
	From	To	Min	Avg	Max	Min	Avg	Max
Gain (dB)	20	2700	46.96	48.73	50.87	49.06	50.39	51.41
Gain Flatness (dB)	20	2700	1.21	1.51	1.80	0.64	0.79	0.92
Isolation (dB)	20	2700	77.39	103.47	127.65	77.54	96.94	130.05
P1dB (dBm)	20	2700	37.22	40.65	43.59	38.35	39.77	41.33
P3dB (dBm)	20	2700	41.21	44.38	47.53	41.51	43.54	45.37
OIP3 Lower Sideband (dBm)	20.0001	2700	45.61	48.72	50.82	47.12	48.57	50.88
OIP3 Upper Sideband (dBm)	20.0001	2700	45.40	49.26	52.13	46.50	48.94	51.53
OIP3 (dBm) (Worse of Lower/Upper)	20.0001	2700	45.40	48.72	50.82	46.50	48.57	50.88
Noise Figure (dB)	20	2700	9.17	10.02	13.78	9.16	9.53	10.86
Input Return Loss (dB)	20	2700	14.59	23.95	44.83	18.54	23.23	28.37
Output Return Loss (dB)	20	2700	3.22	7.32	38.49	5.00	9.69	22.87
DC Current (A)	20	2700	3.02	3.02	3.03	2.21	2.24	2.25

Note: Data summary above and graphs on the following page are based on measured data for the connectorized modules (ZHL-25W-272X+ and ZHL-20M2G7025X+). One can expect similar performance between the connectorized modules and respective rack mount units (HPA-25W-272+ and HPA-20M2G7025+).

3) TYPICAL PERFORMANCE GRAPHS AT ROOM TEMPERATURE: