

REPLACEMENT PART REFERENCE GUIDE,
TVA-R5-13A+

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

ORIGINAL PART:	TVA-R5-13A+	
REPLACEMENT PART:	HPA-0M51G02W5+	

Note: This replacement part reference guide is applicable for the TVA-R5-13A+.

MECHANICAL DIMENSIONS

Case Style: PJ2059-2
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 TVA-R5-13A+	Replacement Part HPA-0M51G02W5+
Gain	34 dB, Min	38 dB, Min
Output Power at 1dB Compression	31 dBm, Min	32 dBm, Min
Noise Figure	No Max Spec Specified	14 dB, Max
Output Third Order Intercept Point	No Min Spec Specified	38 dBm, Min
Input VSWR	No Max Spec Specified	2.0, Max
Output VSWR	No Max Spec Specified	4.0, Max

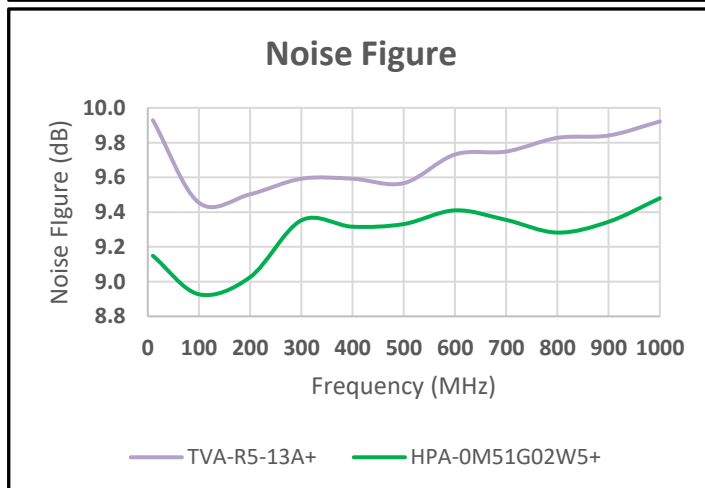
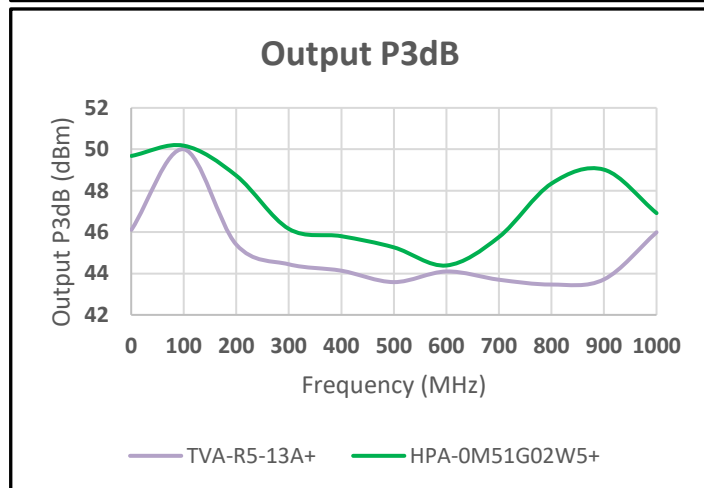
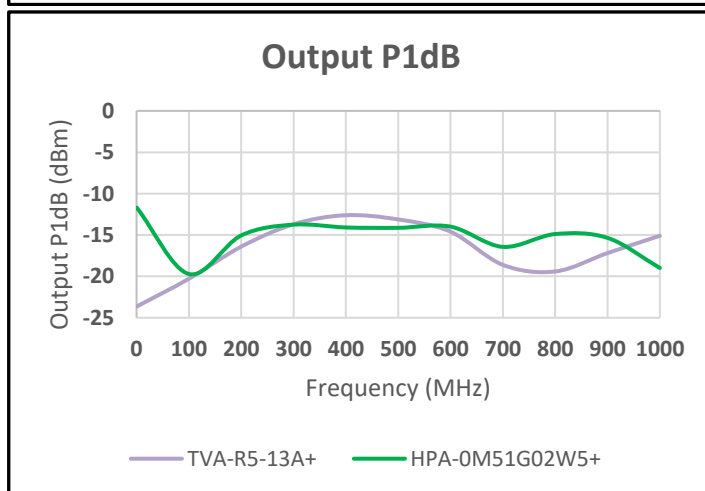
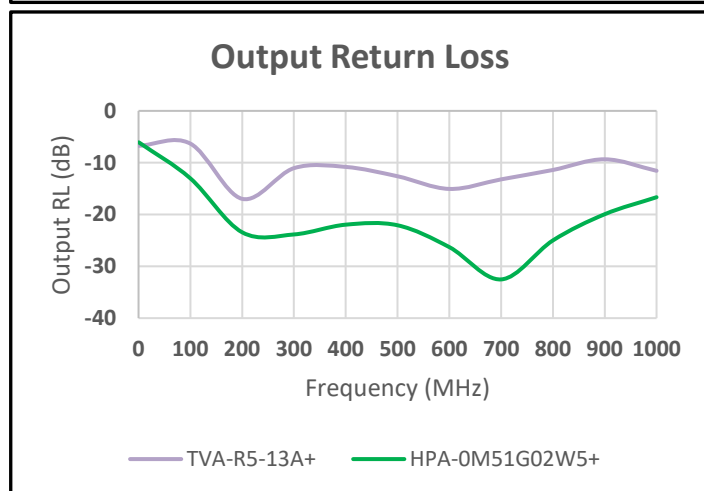
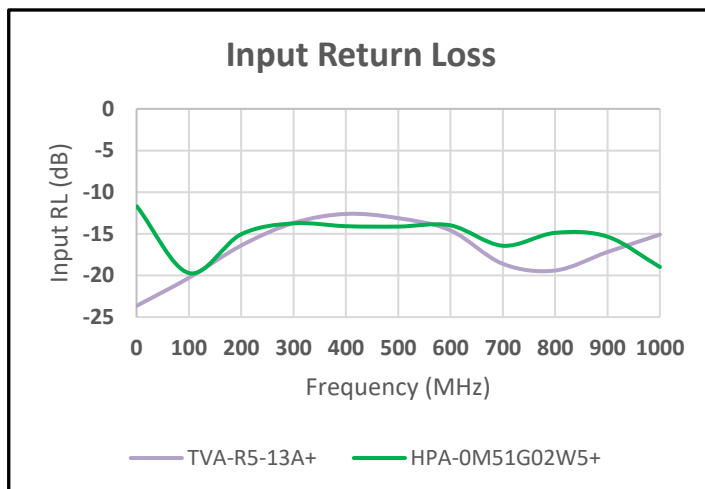
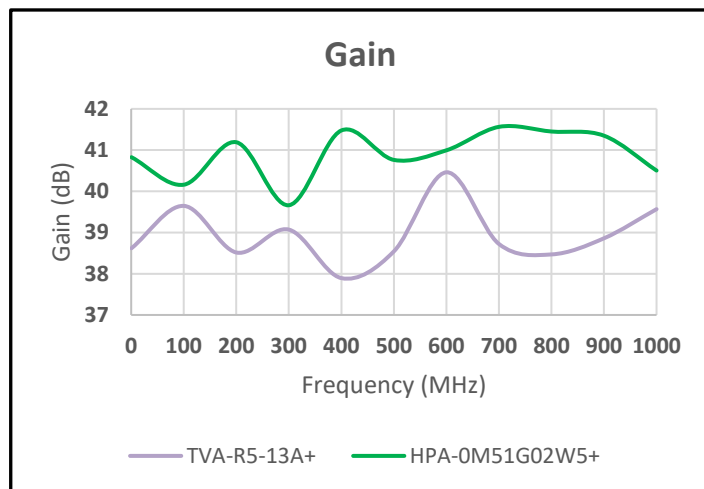
For typical performance and graphs: See paragraphs 2 and 3

2) TYPICAL PERFORMANCE COMPARISON AT ROOM TEMPERATURE:

MODEL: TVA-R5-13A+ (Original), HPA-0M51G02W5+ (Replacement) (RF Parameters)

RF Parameter	Frequency MHz		Original Design @ 3 Units TVA-R5-13A+			Replacement Design @ 5 Units HPA-0M51G02W5+		
	From	To	Min	Avg	Max	Min	Avg	Max
Gain (dB)	DC	1000	37.76	39.15	40.52	39.37	40.97	42.89
Gain Flatness (dB)	DC	1000	37.76	39.15	40.52	1.39	1.54	1.69
P1dB (dBm)	DC	1000	33.26	35.74	37.11	34.25	37.04	39.39
OIP3 (dBm)	DC	1000	42.65	48.52	52.88	43.66	47.39	54.41
Input Return Loss (dB)	DC	1000	12.07	22.42	45.89	11.27	16.70	45.00
Output Return Loss (dB)	DC	1000	6.15	9.65	18.02	6.02	21.51	51.89
Noise Figure (dB)	DC	1000	9.29	9.67	10.15	8.72	9.19	9.64

3) TYPICAL PERFORMANCE GRAPHS AT ROOM TEMPERATURE:





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