

**REPLACEMENT PART REFERENCE GUIDE, DVGA1-242+**

**AN-60-090**

ORIGINAL PART:

DVGA1-242+

REPLACEMENT PART:

DVGA1-242A+



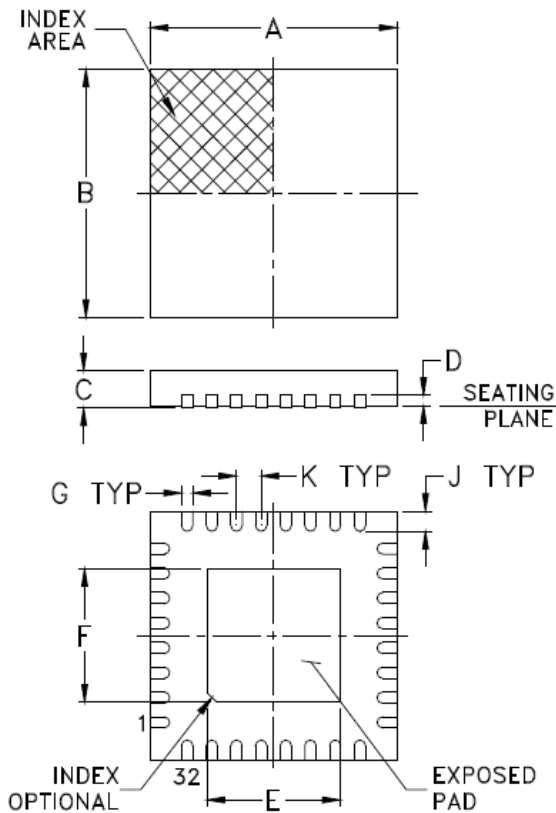
*Replacement Part has been judged by Mini-Circuits Engineering as a suitable replacement to Original Part<sup>a</sup>*

**MECHANICAL DIMENSIONS & PCB LAND PATTERN**

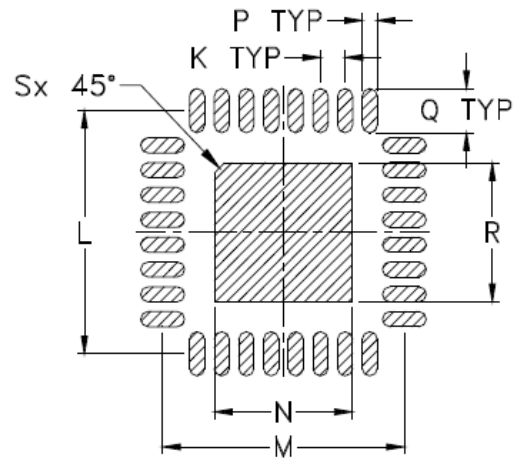
**ORIGINAL PART: DVGA1-242+**

**REPLACEMENT PART: DVGA1-242A+**

**Case Style DG1677 (No Change)**



**PCB Land Pattern**



Suggested Layout,  
Tolerance to be within  $\pm 0.02$

Marking

DVGA1

Marking

DVGA1A

Notes:  
a. Suitability for model replacement within a particular system must be determined by and is solely the responsibility of the customer based on, among other things, electrical performance criteria, stimulus conditions, application, compatibility with other components and environmental conditions and stresses.

## CONCLUSION:

### 1) FORM-FIT-FUNCTIONAL COMPATIBLE<sub>2</sub>:

Replacement part is Form, Fit compatible. Following is a summary of changes/improvements:

Typical performance: See paragraphs 2 and 3

Min/Max Specifications seen below,

Parameter	Original Part (DVGA1-242+)	Replacement Part (DVGA1-242A+)
Control Input High Voltage	0.7VD1 min	1.17V min, 3.6V max
Control Input Low Voltage	0.3VD1 max	-0.3V min, 0.6V max
Supply Current, ID1	100µA max (During turn-on and transition between attenuation states ID1 may increase up to 2mA)	200µA max
Control Current	1 µA max	1 µA max except, 30µA typ. for C0.5, C16 and 2µA typ. for LE

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## 2) PERFORMANCE COMPARISON<sub>a</sub> $V_{D1}=3V$ , $V_{D2}=5V$ :

DVGA1-242A+	Frequency (MHz)		DVGA1-242A+ Data of 3 Units in TB-643A+ @+25degC			DVGA1-242+ Data of 2 Units in TB-643+ @+25degC		
			Min.	Avg.	Max.	Min.	Avg.	Max.
GAIN (0dB)	400	400	29.3	29.3	29.4	29.0	29.0	29.0
	500	500	29.9	29.9	30.0	29.5	29.5	29.6
	1400	1400	29.3	29.3	29.5	29.0	29.0	29.0
	2000	2000	24.3	24.3	24.4	24.0	24.1	24.2
	2400	2400	20.9	21.0	21.0	20.7	20.7	20.7
ACCURACY (0.5dB)	400	1000	0.48	0.52	0.53	0.49	0.52	0.54
	1000	2400	0.45	0.52	0.60	0.46	0.51	0.57
ACCURACY (1dB)	400	1000	0.98	1.02	1.05	0.99	1.01	1.03
	1000	2400	0.91	1.02	1.15	0.89	1.00	1.12
ACCURACY (2dB)	400	1000	1.94	1.99	2.04	1.96	2.00	2.05
	1000	2400	1.88	2.02	2.24	1.91	2.06	2.25
ACCURACY (4dB)	400	1000	3.91	4.00	4.05	3.90	3.98	4.06
	1000	2400	3.75	3.97	4.31	3.83	4.03	4.31
ACCURACY (8dB)	400	1000	7.80	7.99	8.07	7.80	7.95	8.04
	1000	2400	7.51	7.90	8.48	7.60	7.91	8.26
ACCURACY (16dB)	400	1000	15.80	16.04	16.15	15.81	16.00	16.08
	1000	2400	15.27	15.84	16.59	15.24	15.74	16.24
INPUT RETURN LOSS( All States) (dB)	400	400	17.9	18.7	19.2	16.5	17.2	17.8
	500	500	15.5	15.9	16.3	14.3	14.8	15.4
	1400	1400	7.5	7.6	7.8	9.1	9.4	9.6
	2000	2000	7.6	7.7	7.7	10.2	10.6	11.0
	2400	2400	11.0	11.4	11.6	13.7	14.0	14.2
OUTPUT RETURN LOSS (dB) (All States)	400	400	20.4	20.7	21.0	16.5	17.2	17.8
	500	500	20.8	21.0	21.5	14.3	14.8	15.4
	1400	1400	11.8	12.1	12.3	9.1	9.4	9.6
	2000	2000	9.4	9.8	10.3	10.2	10.6	11.0
	2400	2400	9.6	9.9	10.2	13.7	14.0	14.2
OIP3(dBm)	450	451	35.7	36.6	37.1	36.5	36.6	36.7
	1000	1001	35.1	35.9	36.3	35.7	35.8	35.8
	1400	1401	35.9	36.9	37.5	36.8	36.9	36.9
	2000	2001	37.6	38.4	38.9	38.5	38.6	38.7
	2400	2401	37.4	38.2	38.7	38.1	38.2	38.2
P1dB(dBm)	450	450	22.1	22.1	22.2	22.2	22.2	22.2
	1000	1000	22.4	22.6	22.7	22.7	22.7	22.7
	1400	1400	22.9	23.0	23.1	23.1	23.1	23.1
	2000	2000	22.9	23.0	23.1	22.9	23.0	23.1
	2400	2400	22.7	22.8	22.9	22.8	22.8	22.9
NOISE FIGURE(dB)	450	450	2.1	2.1	2.2	2.3	2.3	2.3
	1000	1000	2.2	2.2	2.2	2.4	2.4	2.4
	1400	1400	2.4	2.4	2.4	2.7	2.7	2.7
	2000	2000	2.6	2.6	2.6	2.9	3.0	3.0
	2400	2400	2.8	2.9	2.9	3.2	3.2	3.3
Current (mA)	DC	DC	153.0	155.1	157.8	154.4	155.7	157.0

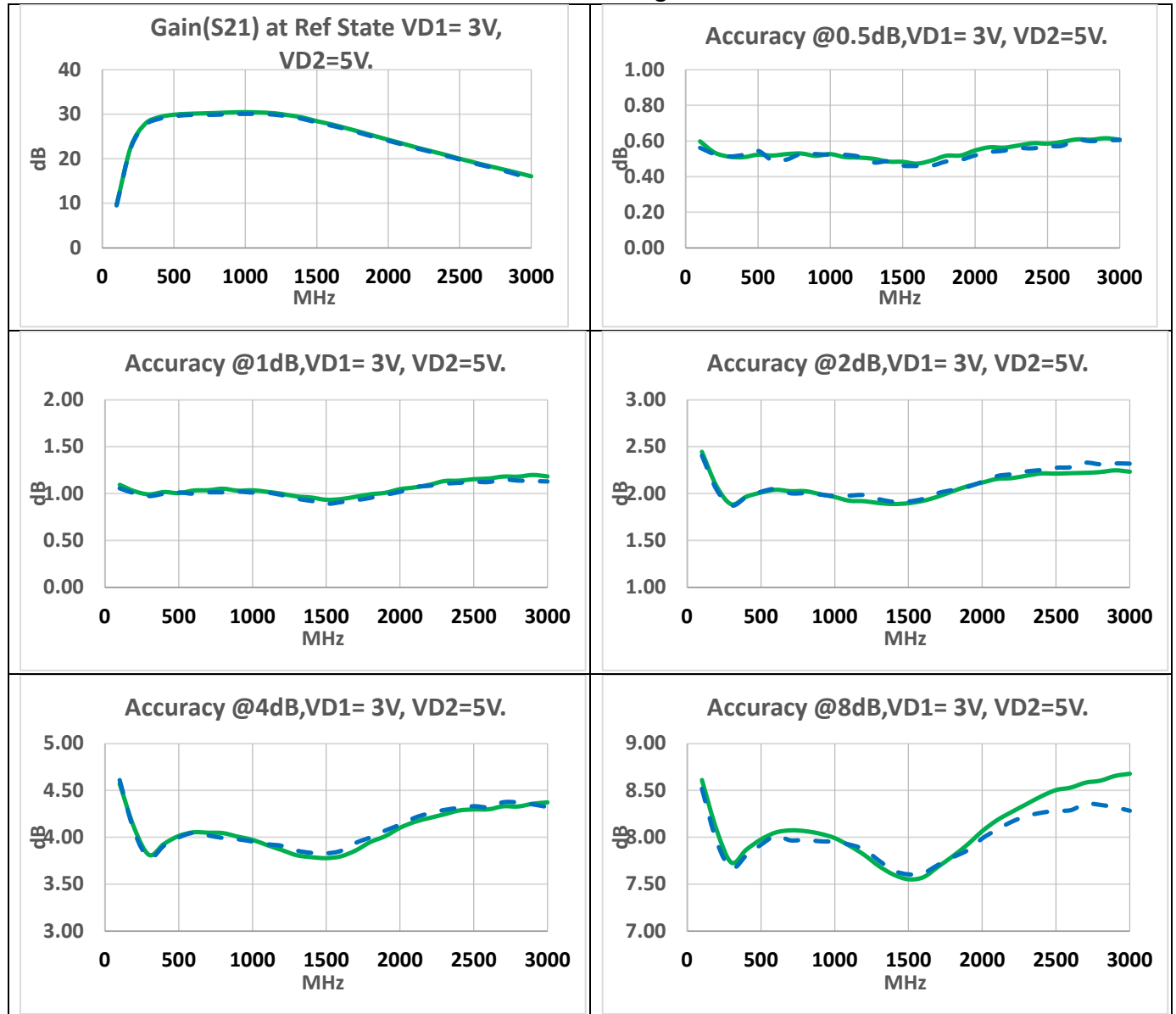
Notes:  
a. Suitability for model replacement within a particular system must be determined by and is solely the responsibility of the customer based on, among other things, electrical performance criteria, stimulus conditions, application, compatibility with other components and environmental conditions and stresses.

3) PERFORMANCE COMPARISON CURVES<sup>a</sup>,  $V_{D1}=3V$ ,  $V_{D2}=5V$ :

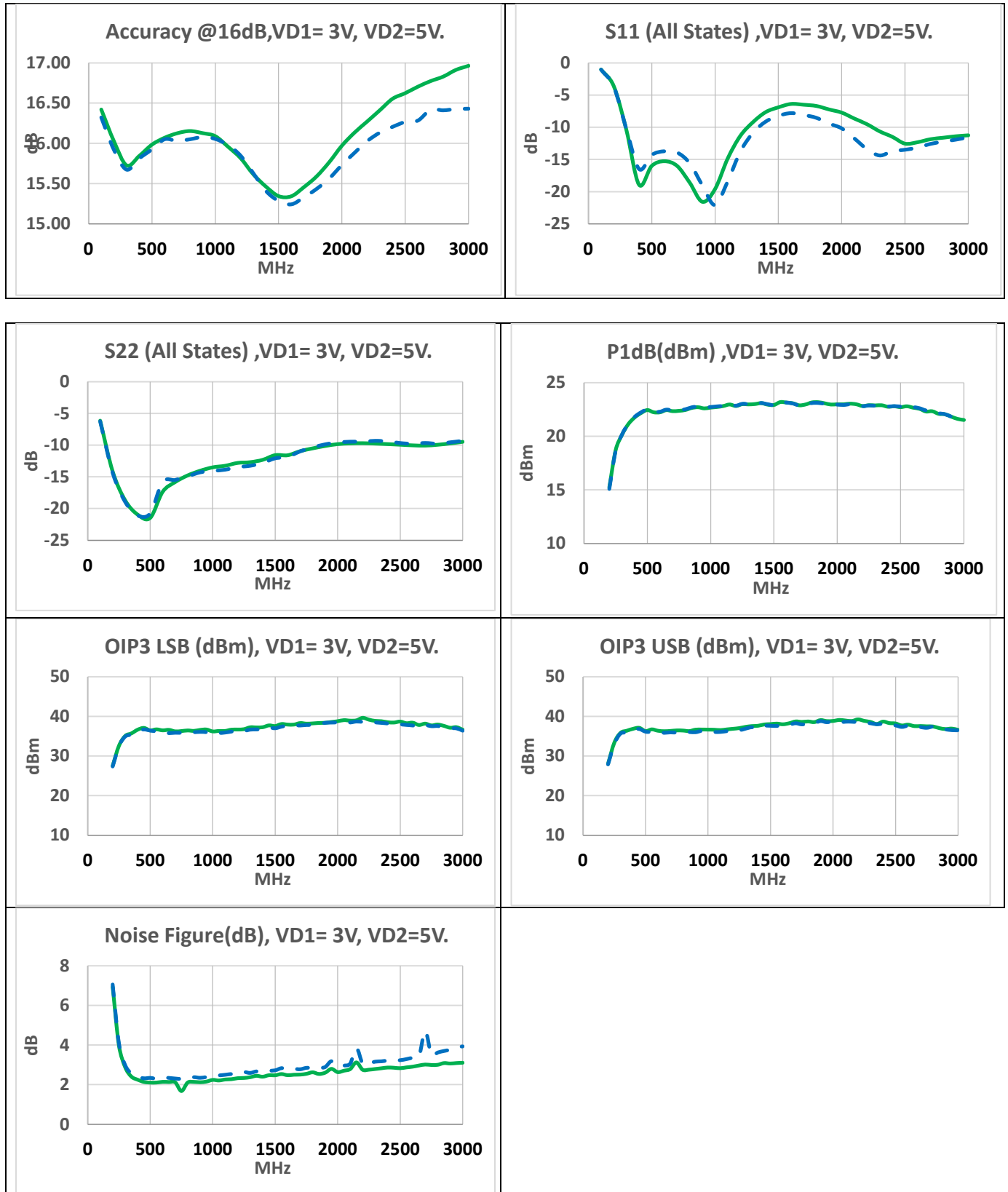
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Data of Replacement Part

Data of Original Part



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## IMPORTANT NOTICE

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