

REPLACEMENT PART REFERENCE GUIDE, DVGA1-242PP+

AN-60-091

ORIGINAL PART:

DVGA1-242PP+

REPLACEMENT PART:

DVGA1-242APP+



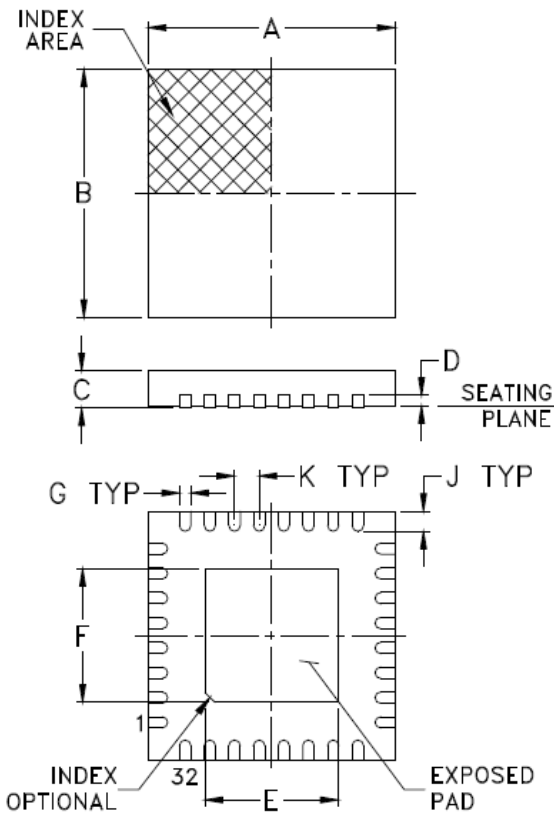
Replacement Part has been judged by Mini-Circuits Engineering as a suitable replacement to Original Part^a

MECHANICAL DIMENSIONS & PCB LAND PATTERN

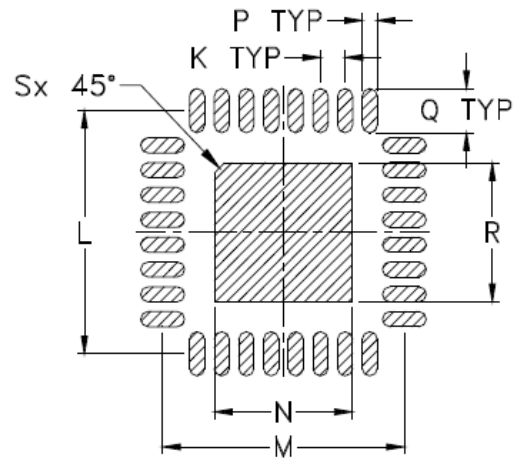
ORIGINAL PART: DVGA1-242PP+

REPLACEMENT PART: DVGA1-242APP+

Case Style DG1677 (No Change)



PCB Land Pattern



Suggested Layout,
Tolerance to be within ± 0.002

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 COMPATIBLE₂:

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 (DVGA1-242PP+)	Replacement Part (DVGA1-242APP+)
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_a $V_{D1}=3V$, $V_{D2}=5V$:

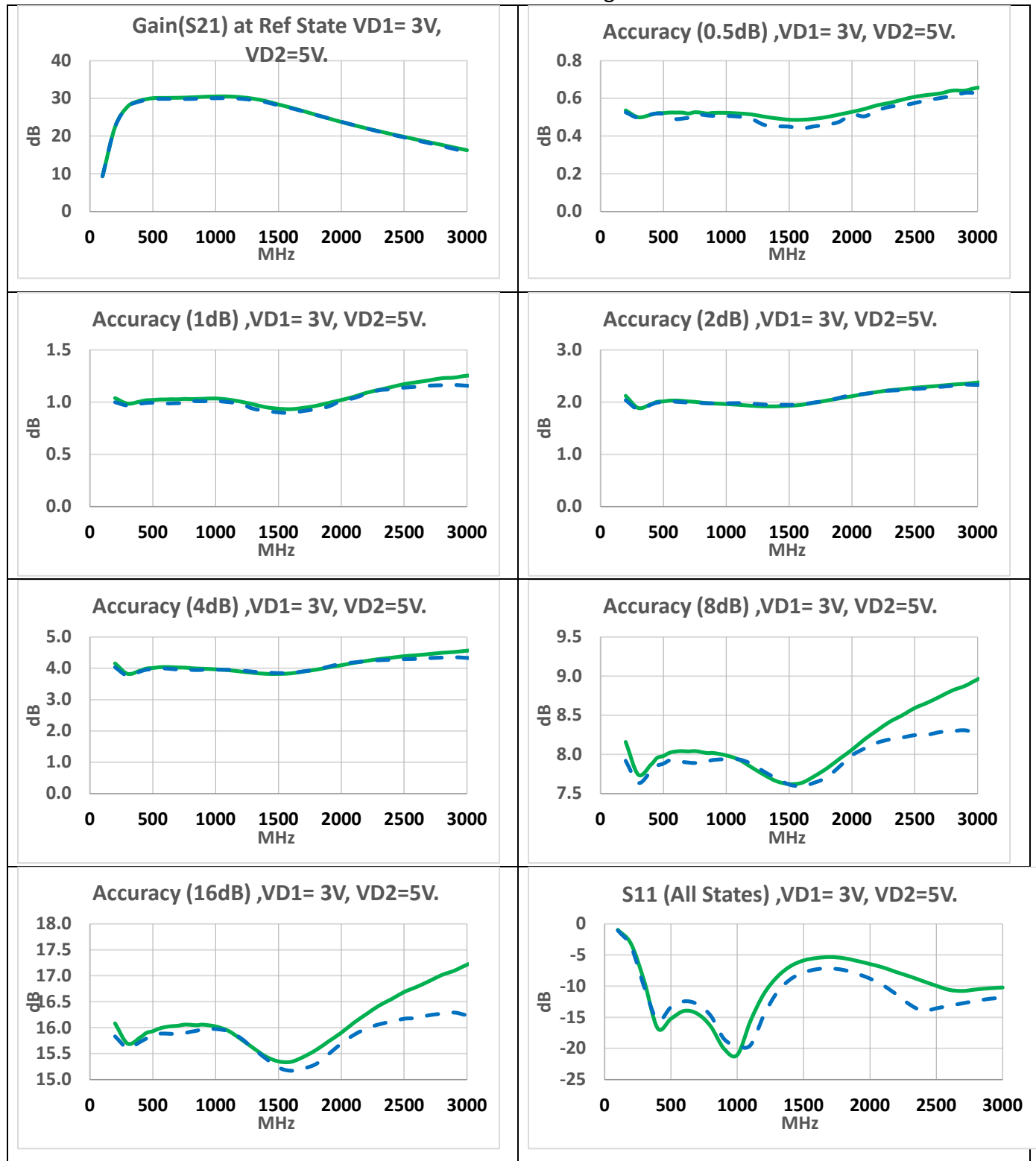
DVGA1-242APP+	Frequency (MHz)		DVGA1-242APP+ Data of 5 Units in TB-681A+ at +25degC			DVGA1-242PP+ Data of 2 Units in TB-681+		
			Min.	Avg.	Max.	Min.	Avg.	Max.
GAIN (0dB)	400	400	29.3	29.3	29.4	28.9	29.1	29.2
	450	450	29.5	29.7	29.7	29.2	29.4	29.5
	500	500	29.8	30.0	30.0	29.5	29.7	29.8
	1000	1000	30.4	30.4	30.5	30.0	30.0	30.0
	1400	1400	29.2	29.3	29.3	28.8	28.9	29.0
	2000	2000	23.7	23.9	24.1	23.6	23.7	23.8
	2400	2400	20.5	20.7	20.9	20.3	20.4	20.4
ACCURACY (0.5dB)	450	1000	-0.01	0.01	0.03	-0.01	0.01	0.02
	1000	2400	-0.05	0.01	0.09	-0.06	-0.01	0.07
ACCURACY (1dB)	450	1000	-0.02	0.01	0.03	-0.01	0.00	0.02
	1000	2400	-0.11	0.00	0.14	-0.11	-0.01	0.14
ACCURACY (2dB)	450	1000	-0.05	-0.01	0.03	-0.02	-0.01	0.01
	1000	2400	-0.13	0.01	0.25	-0.06	0.05	0.26
ACCURACY (4dB)	450	1000	-0.07	-0.01	0.04	-0.06	-0.04	0.00
	1000	2400	-0.24	-0.03	0.34	-0.17	0.02	0.32
ACCURACY (8dB)	450	1000	-0.14	-0.02	0.06	-0.16	-0.10	-0.04
	1000	2400	-0.49	-0.11	0.50	-0.44	-0.12	0.26
ACCURACY (16dB)	450	1000	-0.18	-0.02	0.11	-0.21	-0.10	0.02
	1000	2400	-0.80	-0.24	0.55	-0.88	-0.35	0.14
INPUT RETURN LOSS(All States) (dB)	400	400	16.8	17.3	17.4	15.5	15.5	15.5
	450	450	15.9	16.2	16.4	14.4	14.5	14.6
	500	500	15.0	15.1	15.4	13.4	13.6	13.7
	1000	1000	19.7	21.5	24.3	19.6	19.6	19.6
	1400	1400	6.8	7.2	7.4	8.3	8.6	8.9
	2000	2000	6.5	6.5	6.7	8.4	8.6	8.8
	2400	2400	9.2	9.4	9.6	13.1	13.6	14.0
OUTPUT RETURN LOSS (dB) (All States)	400	400	21.6	22.3	22.7	20.4	20.6	20.8
	450	450	21.0	21.5	21.8	20.2	20.4	20.6
	500	500	20.2	20.5	20.7	19.8	20.0	20.3
	1000	1000	14.7	15.1	15.3	15.1	15.2	15.4
	1400	1400	15.5	15.6	15.6	15.0	15.2	15.4
	2000	2000	9.0	9.1	9.2	8.9	9.0	9.0
	2400	2400	9.4	9.6	9.7	9.3	9.3	9.4
OIP3(dBm)	450	451	35.4	36.1	36.6	37.7	38.6	39.4
	1000	1001	34.5	35.1	35.5	36.1	36.8	37.4
	1400	1401	35.5	36.1	36.4	37.2	37.8	38.4
	2000	2001	37.0	37.7	38.2	38.8	39.4	39.9
	2400	2401	37.3	37.8	38.3	38.5	39.1	39.7
P1dB(dBm)	450	450	22.0	22.2	22.3	22.6	22.6	22.6
	1000	1000	22.4	22.6	22.8	23.0	23.0	23.1
	1400	1400	22.8	22.9	23.1	23.2	23.2	23.2
	2000	2000	22.7	22.7	22.8	22.8	22.8	22.9
	2400	2400	22.5	22.6	22.7	22.9	23.0	23.0
NOISE FIGURE(dB)	450	450	2.1	2.2	2.2	2.4	2.4	2.4
	1000	1000	2.2	2.3	2.4	2.6	2.6	2.7
	1400	1400	2.5	2.6	2.6	2.9	2.9	2.9
	2000	2000	2.8	2.9	2.9	3.3	3.3	3.3
	2400	2400	3.0	3.0	3.1	3.4	3.4	3.5
Current (mA)	DC	DC	157.1	158.1	159.7	158.3	159.5	160.7

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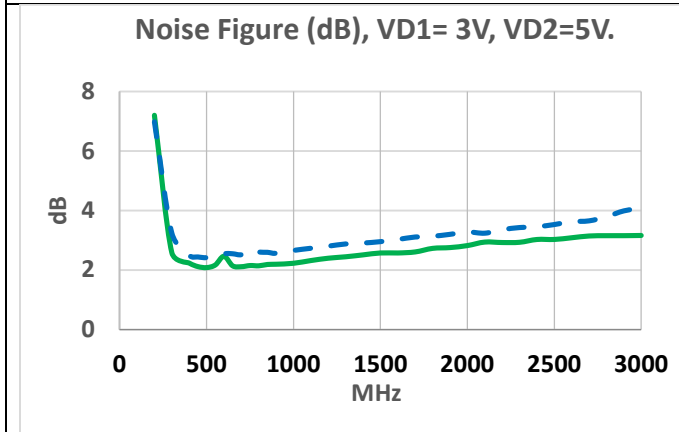
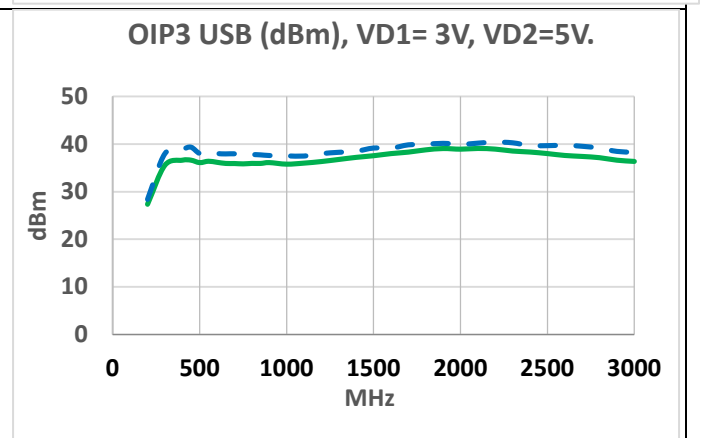
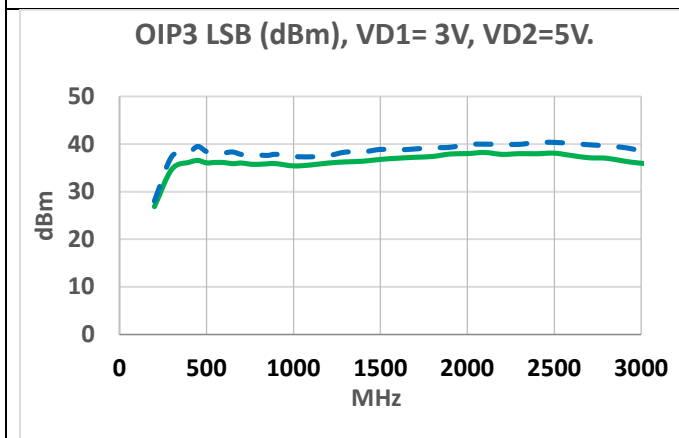
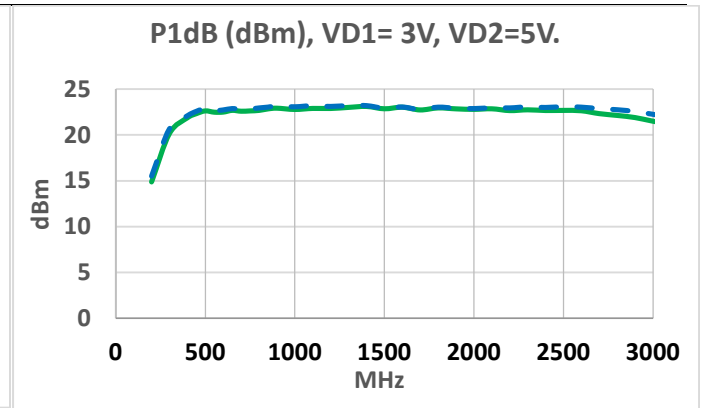
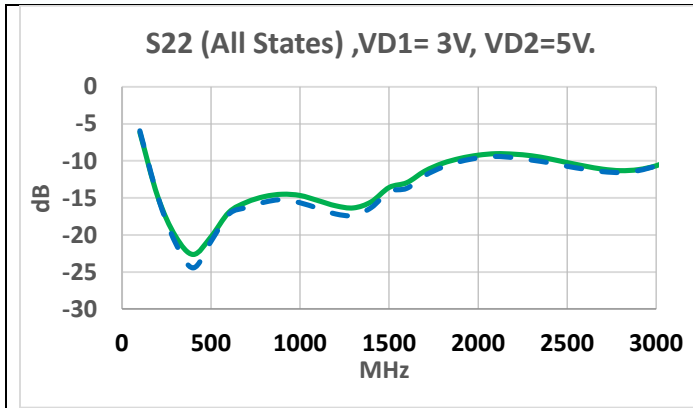
3) PERFORMANCE COMPARISON CURVES_a $V_{D1}=3V$, $V_{D2}=5V$:

Data of Replacement Part

Data of Original Part



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