APPLICATION NOTE

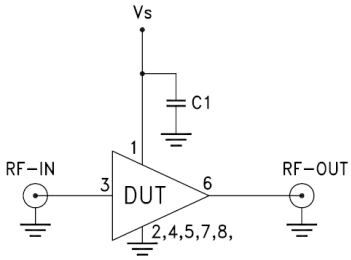
REPLACEMENT PART REFERENCE GUIDE: AN-60-065

ORIGINAL PART: VNA-28
REPLACEMENT PART: VNA-28A+

This replacement part has been judged by Mini-Circuits Engineering as a suitable replacement part[a]

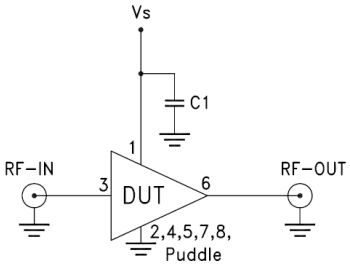
APPLICATION CIRCUITS

ORIGINAL PART: VNA-28
APPLICATION CIRCUIT



Vs=Supply Voltage

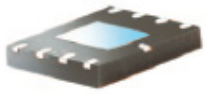
REPLACEMENT PART: VNA-28A+
APPLICATION CIRCUIT



Vs=Supply Voltage

ORIGINAL PART: VNA-28
CASE STYLE-SOIC-8 LEAD

REPLACEMENT PART: VNA-28A+
CASE STYLE- 5x6mm MCLP (FOOT PRINT COMPATIBLE)



CONCLUSION:

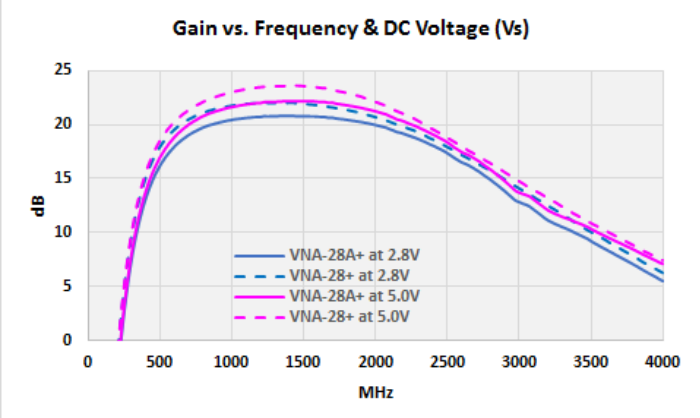
1) **FORM-FIT-FUNCTIONAL COMPATIBLE**: Similar Circuit and PCB Layout.
2) **TYPICAL PERFORMANCE COMPARISON** [a]:

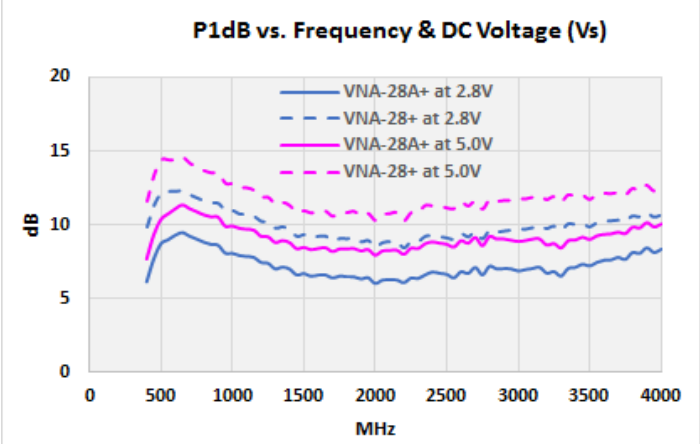
At DC=+5V	GHz	VNA-28A+	VNA-28+
Gain (dB)	0.5	16.8	18.4
	1.0	21.5	23.0
	1.5	22.0	23.5
	2.0	21.1	22.1
	2.5	18.2	18.8
Input Return Loss (dB)	0.75 to 2.5	15.7	14.6
Output Return Loss (dB)	0.75 to 2.5	15.0	13.7
Output Power @ P1dB	0.5 to 2.5	8.8	11.9
Output IP3 (dBm)	0.5 to 2.5	20.0	23.7
Noise Figure (dB)	0.5 to 2.5	3.7	3.5
Directivity (Isolation-Gain) (dB)	0.5 to 2.5	16.8	16.6
DC Current (mA)	DC	26.3	32.2

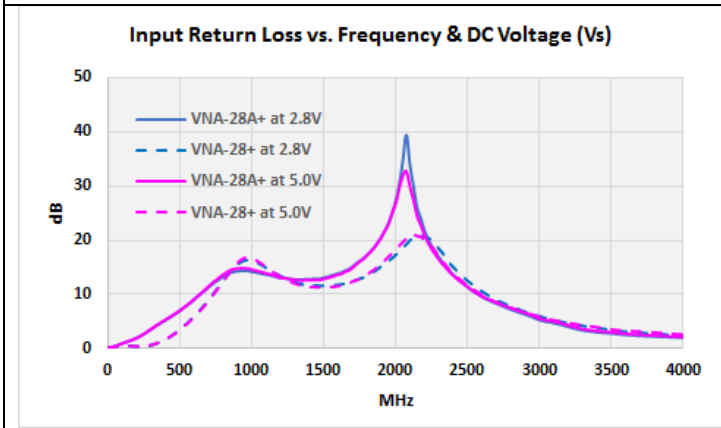
At DC=+2.8V	GHz	VNA-28A+	VNA-28+
Gain (dB)	0.5	16.1	18.0
	1.0	20.3	21.8
	1.5	20.6	22.0
	2.0	19.8	20.7
	2.5	17.3	18.0
Input Return Loss (dB)	0.75 to 2.5	15.9	14.6
Output Return Loss (dB)	0.75 to 2.5	12.1	11.3
Output Power @ P1dB	0.5 to 2.5	6.9	10.0
Output IP3 (dBm)	0.5 to 2.5	18.3	21.8
Noise Figure (dB)	0.5 to 2.5	3.7	3.5
Directivity (Isolation-Gain) (dB)	0.5 to 2.5	16.6	16.6
DC Current (mA)	DC	24.0	32.2

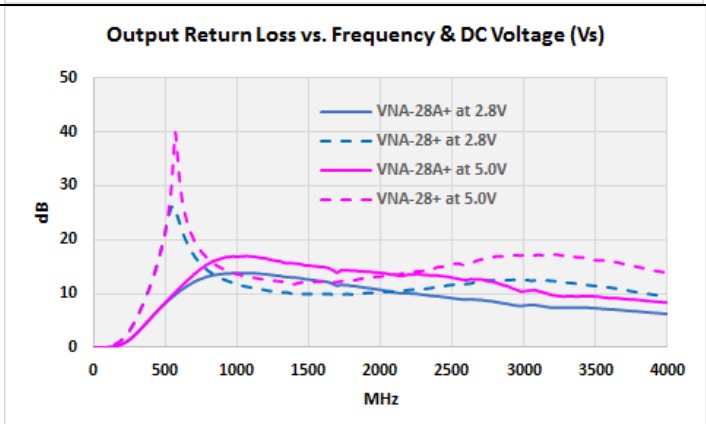
Notes:
a. Suitability for model replacement within a particular system must be determined by and is solely the responsibility of the customer based on, among other things, electrical performance criteria, stimulus conditions, application, compatibility with other components and environmental conditions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

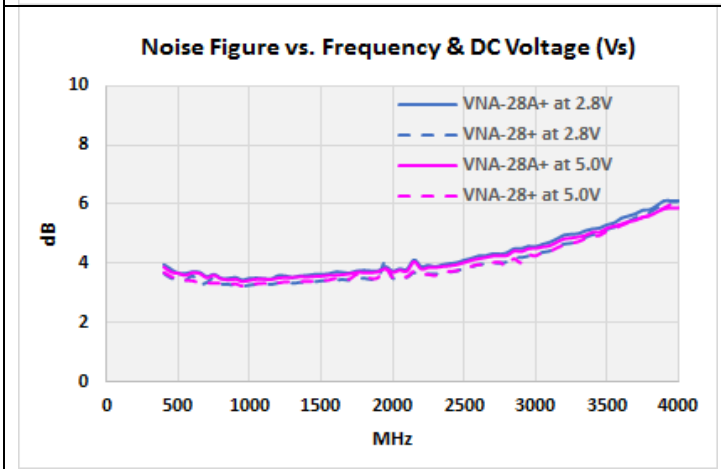
COMPARISON PERFORMANCE CURVES:

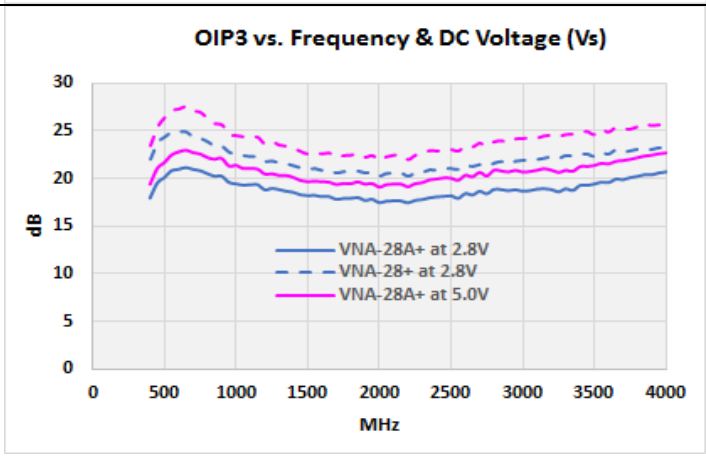












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