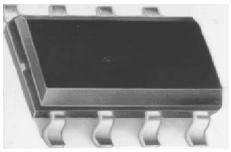
Monolithic Amplifier

NEW

VNA-25



MAX. RATINGS

TEMP.: CASE OPERATING: -40°C TO +70°C (SEE NOTE 3)
STORAGE: -55°C TO +150°C
DC VOLTS: +7.0V; -1.0 V REVERSE VOLTAGE
DC VOLTAGE ON RF IN AND OUT: ± 15V

CASE STYLE: **XX211**
PRICE: $4.95 EACH QTY.: 10

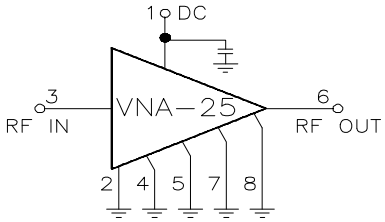
FEATURES

- LOW-COST PACKAGE: STANDARD SOIC-8
- LOW NOISE FIGURE, 5.5 dB TYP.
- POWER OUTPUT 18.2 dBm TYP. IN CELLULAR BAND
- NO EXTERNAL BLOCKING CAPACITORS REQUIRED
- SEPARATE RF AND DC CONNECTIONS (NO RF CHOKE REQUIRED)
- USEFUL AT +3V TO +6V DC: POWER OUTPUT (1 GHz) 11.9, 18.2 & 19.6 dBm TYP. AT 3,5 & 6V DC

PIN CONNECTIONS

RF IN	3
RF OUT	6
DC VOLTAGE SUPPLY	1
GROUND	2,4,5,7,8

TYPICAL BIASING CONFIGURATION



OUTLINE DRAWING

FOR OUTLINE DRAWING & PIN DESIGNATION
SEE MINI-CIRCUITS CATALOGS:
- RF/IF DESIGNER'S GUIDE
- RF/IF DESIGNER'S HANDBOOK
- MICROWAVES & RF PRODUCT DATA DIRECTORY
- THOMAS REGISTER CATALOG FILE
- EEM CATALOG

SPECIFICATIONS

FREQUENCY (MHz)	GAIN, dB		POWER, dBm			DYNAMIC RANGE		VSWR TYP.		DC POWER		
	MIN.	TYP.	MAX. OUTPUT (1 dB COMP.) MIN.	TYP.	INPUT (NO DAMAGE)	NF, dB TYP.	INTERCEPT POINT, dBm 3RD ORDER TYP.	OUTPUT	INPUT	VOLTS FOR SPECIFIED PERFORMANCE	CURRENT, mA TYP.	MAX.
500 - 800	11.5	14.0	+16.5	+18.0	+10	5.9	+27	1.5:1	6.4:1	+5.0	85	105
800 - 1000	15.0	17.0	+17.5	+18.5	+10	5.4	+27	1.7:1	2.8:1			
1000 - 2000	16.0	18.0	+16.5	+17.5	+10	5.1	+27	1.7:1	2.0:1			
2000 - 2500	13.5	16.0	+15.5	+17.0	+10	4.8	+27	1.5:1	1.4:1			

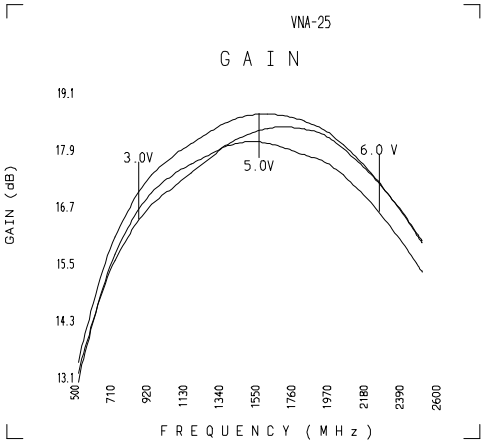
ALL SPECIFICATIONS AT 25°C (CASE TEMP. 35°)

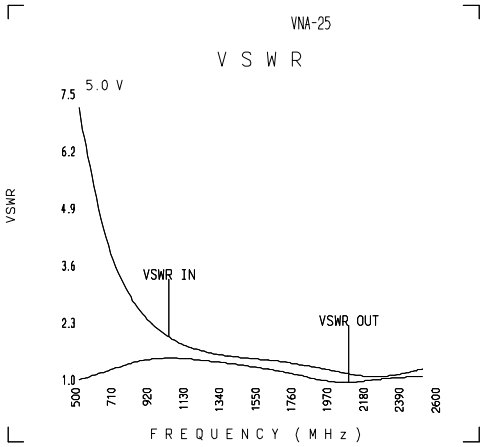
NOTES

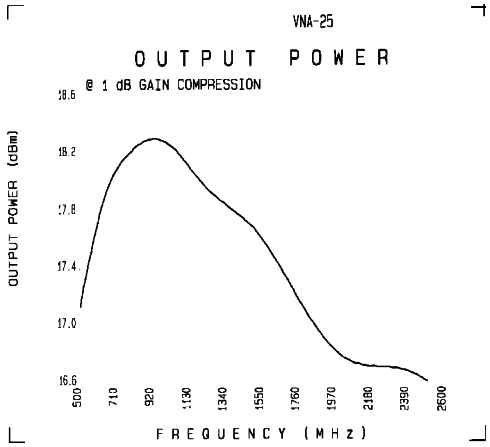
1. SPECIFIED PERFORMANCE INCLUDES TEST FIXTURE: 1.5-INCH P.C. BOARD WITH SMA CONNECTORS.
2. TO ENSURE PROPER PERFORMANCE, CONNECT GROUND LEADS TO UPPER P.C. BOARD GROUND, AND INTERCONNECT TOP AND BOTTOM P.C. BOARD GROUND PLANES VERY CLOSE TO CASE LOCATION.
3. MTTF AT 150°C MAX. JUNCTION TEMP: 3 X 10^7 HOURS TYP.
4. THERMAL RESISTANCE, JUNCTION-TO-CASE: 125°C/W TYP.
5. TEMPERATURE RISE, AIR-AMBIENT TO CASE, FOR APPLICATIONS GUIDANCE ONLY: 10°C WHEN SOLDERED TO A 1.5-INCH SQUARE P.C BOARD ON THE FLOOR OF AN ALUMINUM HOUSING. P.C. BOARD HAS PLATED-THROUGH HOLES WITH O.2- INCH TOTAL PERIPHERY, AT VNA-25 LOCATION.

SEE PAGE 2 FOR TEMPERATURE PERFORMANCE

DATA ON A TYPICAL UNIT







FREQ. (MHz)	GAIN (dB) 3.0 V	5.0V	6.0V	Pout (dBm) @ 1 dB COMPR 3.0 V	5.0V	6.0V	N.F. (dB)	VSWR OUT 3.0 V	5.0V	6.0V	VSWR IN 3.0 V	5.0V	6.0V
500	13.29	13.52	13.12	10.86	17.14	18.50	5.91	1.13	1.12	1.12	7.12	7.30	7.05
645	15.19	15.63	15.25	11.33	18.02	19.52	5.55	1.22	1.28	1.29	4.20	4.26	4.21
785	16.21	16.76	16.42	11.48	18.23	19.82	5.34	1.44	1.49	1.49	3.02	3.01	3.01
930	16.90	17.54	17.16	11.69	18.36	19.91	5.10	1.58	1.60	1.60	2.39	2.33	2.35
1070	17.26	17.94	17.55	11.89	18.24	19.62	4.93	1.62	1.62	1.61	2.02	1.96	1.99
1215	17.67	18.26	17.81	11.90	17.98	19.10	4.81	1.60	1.56	1.55	1.78	1.76	1.79
1355	18.12	18.61	18.10	11.93	17.85	18.59	4.78	1.56	1.50	1.49	1.64	1.66	1.71
1500	18.37	18.76	18.21	11.99	17.72	18.29	4.79	1.52	1.43	1.43	1.52	1.60	1.66
1645	18.51	18.77	18.13	11.98	17.45	17.91	4.74	1.48	1.33	1.32	1.44	1.55	1.61
1785	18.48	18.66	17.92	11.87	17.14	17.54	4.74	1.44	1.22	1.22	1.36	1.47	1.54
1930	18.36	18.46	17.80	11.88	16.87	17.26	4.70	1.39	1.09	1.11	1.28	1.37	1.44
2070	17.97	18.04	17.40	11.66	16.74	17.09	4.69	1.37	1.03	1.05	1.19	1.24	1.30
2215	17.44	17.47	16.85	11.57	16.72	17.20	4.69	1.35	1.12	1.10	1.18	1.16	1.19
2355	16.87	16.85	16.22	11.33	16.72	17.26	4.72	1.32	1.17	1.15	1.27	1.22	1.19
2500	16.08	16.04	15.43	11.14	16.62	17.30	4.70	1.29	1.20	1.18	1.40	1.36	1.29

REV.A ENGREF-EC-2747/2 DATE03-25-94