

WJ-EA54

10 to 250 MHz TO-5 CASCADABLE AMPLIFIER

- ◆ TWO STAGES: 27 dB GAIN (TYP.)
- ◆ LOW VSWR: 1.2:1 (TYP.)
- ◆ VERY SMALL SIZE: TO-5 PACKAGE.



Specifications *

Characteristics	Typical	Guaranteed	
		0° to 50°C	-54° to +85°C
Frequency (Min.)	5-350 MHz	10-250 MHz	10-250 MHz
Small Signal Gain (Min.)	27.0 dB	25 dB	24 dB
Gain Flatness (Max.)	±.7 dB	±1.0 dB	±1.2 dB
Noise Figure (Max.)	3.8 dB	4.5 dB	5.0 dB
Power Output at 1 dB Compression (Min.)	+5.0 dBm	+4.0 dBm	+2.0 dBm
VSWR (Max.) Input/Output	1.2:1	1.7:1	1.8:1
DC Current (Max.) at 5 Volts	30 mA	33 mA	36 mA

* Measured in a 50-ohm system at +5 Vdc Nominal.

Typical Intermodulation Performance at 25°C

Second Order Harmonic Intercept Point.....+33 dBm (Typ.)
 Second Order Two Tone Intercept Point.....+28 dBm (Typ.)
 Third Order Two Tone Intercept Point.....+16 dBm (Typ.)

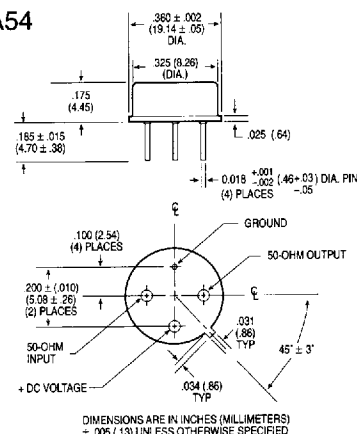
Absolute Maximum Ratings

Storage Temperature-62°C to +125°C
 Maximum Case Temperature125°C
 Maximum DC Voltage.....+7 Volts
 Maximum Continuous RF Input Power+13 dBm
 Maximum Short Term RF Input Power (1 Minute Max.).....50 Milliwatts
 Maximum Peak Power0.5 Watt (3 µsec Max.)
 "S" Series Burn-In Temperature (Case)125°C

Weight approximately 1.0 grams (0.04 oz.)

Outline Drawings

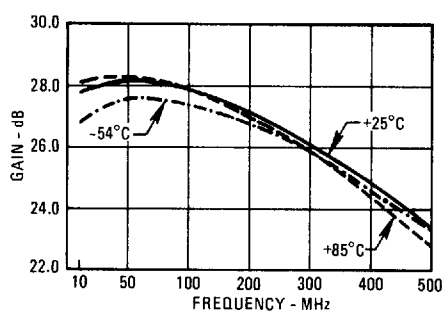
EA54



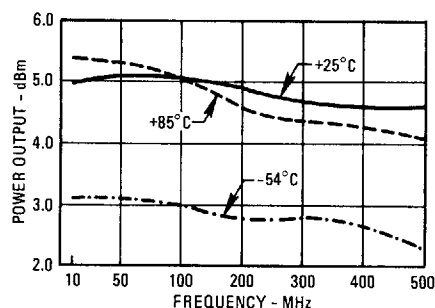
WJ-CA package is not available for TO-5's.

Typical Performance at 25°C

Gain

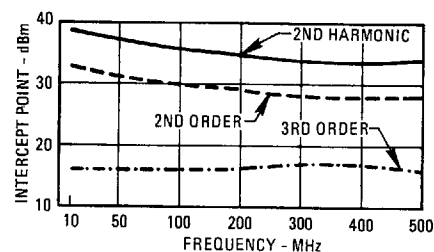


Power Output*

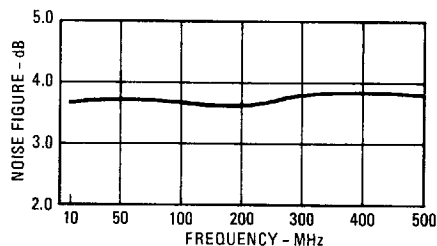


*at 1 dB Gain Compression

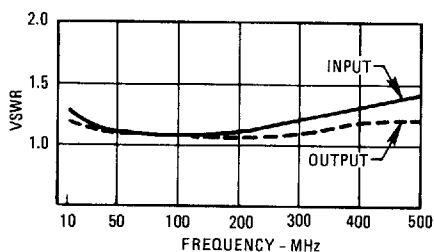
Intercept Point



Noise Figure



VSWR



Typical Automatic Test Data

V_{CC} = 5.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
2.0	1.9	1.9	25.3
5.0	1.3	1.3	26.9
10.0	1.2	1.1	27.1
50.0	1.1	1.1	27.2
100.0	1.1	1.1	27.0
150.0	1.1	1.1	26.8
200.0	1.2	1.1	26.5
250.0	1.2	1.1	26.1
300.0	1.3	1.1	25.6
350.0	1.3	1.1	25.0
400.0	1.3	1.1	24.4

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
2.0	.310	-80	18.425	75	.004	69	.315	-83
5.0	.131	-92	22.043	29	.006	30	.123	-92
10.0	.074	-105	22.657	13	.006	17	.065	-101
50.0	.043	-144	22.888	-10	.006	12	.026	-131
100.0	.044	-133	22.449	-24	.006	13	.029	-140
150.0	.059	-131	21.857	-37	.006	19	.034	-148
200.0	.078	-137	21.137	-50	.006	22	.039	-153
250.0	.090	-144	20.102	-62	.007	29	.045	-160
300.0	.112	-150	19.019	-74	.007	31	.051	-167
350.0	.125	-159	17.840	-86	.008	33	.056	-174
400.0	.134	-164	16.667	-96	.008	37	.058	-178

Thermal Data: V_{CC} = 5 Vdc

Thermal Resistance θ_{JC} 45°C/W
 Transistor Power Dissipation P_D0.047 W
 Junction Temperature Rise Above Case T_{JC} ...2°C