

# AC1582

## 5 TO 1500 MHz TO-8 CASCADABLE AMPLIFIER

**Typical Values**

Medium Gain .....	<b>AC1582</b> 12.5 dB
Medium Output Power .....	+11.0 dBm
High Performance Thin Film Standard Size TO-8 Package	

### SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	5-1600 MHz	5-1500 MHz	5-1500 MHz
Small Signal Gain (Min.)	12.5 dB	11.8 dB	11.0 dB
Gain Flatness (Max.)	±0.2 dB	±0.5 dB	±0.7 dB
Noise Figure (Max.)	4.0 dB	5.0 dB	5.5 dB
SWR (Max.)	Input/Output	1.7:1	2.0:1
Power Output (Min.) @ 1dB comp.	10-1000 MHz	+11.0 dBm	+10.5 dBm
	1000-1300 MHz	+10.5 dBm	+10.0 dBm
	1300-1500 MHz	+9.5 dBm	+9.0 dBm
Reverse Isolation	17.0 dB	—	—
DC Current (Max.)	31 mA	32 mA	35 mA

\* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.

### INTERMODULATION PERFORMANCE

Typical @ 25 °C; 300 MHz

Second Order Harmonic Intercept Point .....	<b>AC1582</b> +40 dBm
Second Order Two Tone Intercept Point .....	+34 dBm
Third Order Two Tone Intercept Point .....	+24 dBm

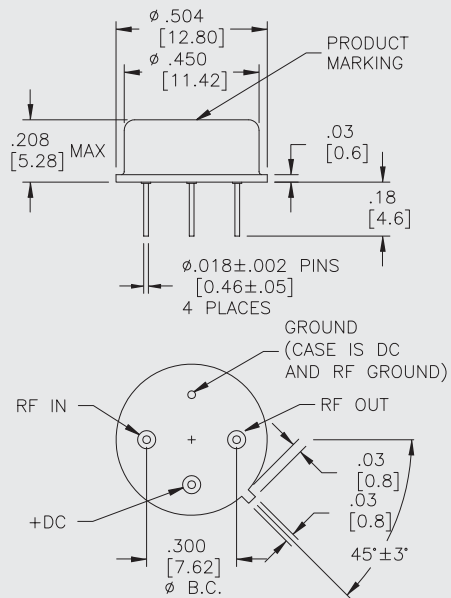
### ABSOLUTE MAXIMUM RATINGS

Storage Temperature .....	-62° to +125 °C
Maximum Case Temperature .....	+125 °C
Maximum DC Voltage .....	+10 Volts
Maximum Continuous RF Input Power .....	+13 dBm
Maximum Short Term Input Power (1 Minute Max.) .....	50 Milliwatts
Maximum Peak Power (3 μsec Max.) .....	0.5 Watt
Burn-in Temperature .....	+125 °C
Thermal Resistance <sup>1</sup> (θ <sub>jc</sub> ) .....	96.0 °C/Watt
Junction Temperature Rise Above Case (T <sub>jc</sub> ) .....	15.3 °C

<sup>1</sup> Thermal resistance is based on total power dissipation.

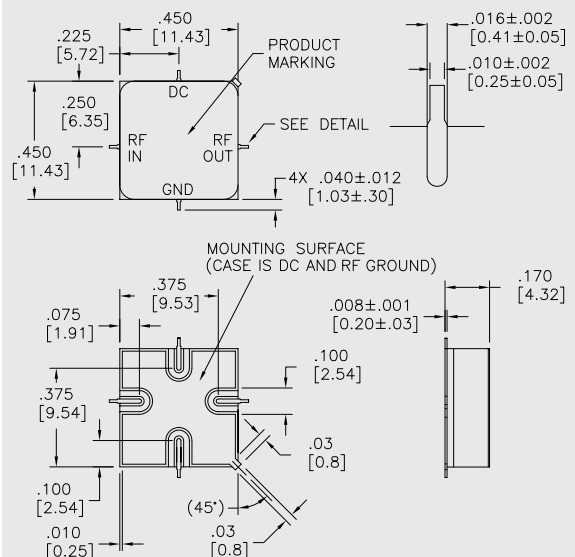
### AC1582

#### TO-8 Package for Amplifiers



### AS1582

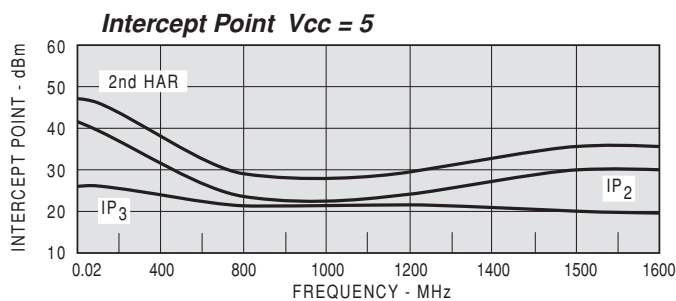
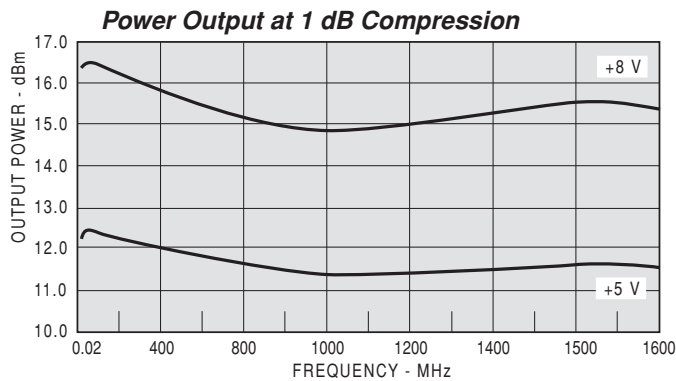
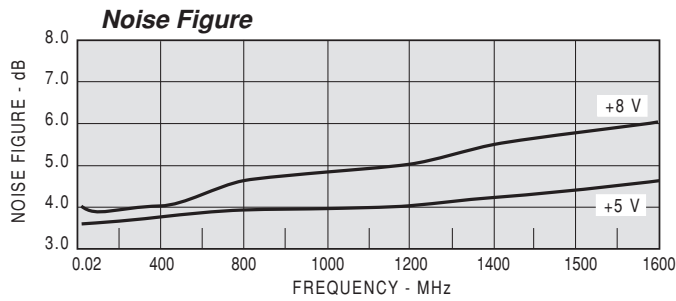
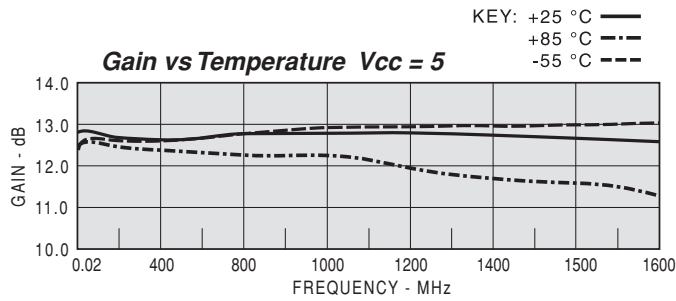
#### SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: AC1582 Vcc=+5V Icc=31.18

FREQ. MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	DELAY NSEC	REV/ISO DB
2	1.67	1.61	12.62	-157	14.00	-18.0
5	1.40	1.39	12.63	-172	14.00	-17.9
10	1.37	1.36	12.64	-177	2.70	-17.8
50	1.38	1.32	12.73	174	0.52	-17.7
100	1.37	1.31	12.69	166	0.43	-17.7
200	1.36	1.31	12.60	151	0.40	-17.8
400	1.34	1.29	12.55	124	0.38	-17.9
600	1.29	1.24	12.60	95	0.40	-17.7
800	1.28	1.18	12.66	66	0.41	-17.7
1000	1.36	1.19	12.67	36	0.42	-17.6
1200	1.47	1.33	12.65	4	0.44	-17.6
1400	1.47	1.50	12.58	-28	0.46	-17.5
1500	1.38	1.55	12.53	-46	0.48	-17.3
1600	1.27	1.56	12.50	-64	0.51	-17.1

Model: AC1582 Vcc=+5V Icc=31.18

LINEAR S-PARAMETERS

FREQ. MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
2	0.25	-118.1	4.27	-157.0	0.13	25.0	0.23	160.2
5	0.17	-149.7	4.28	-172.0	0.13	9.3	0.16	168.6
10	0.16	-162.8	4.29	-176.9	0.13	4.2	0.15	170.2
50	0.16	-176.5	4.33	173.6	0.13	-2.9	0.14	166.6
100	0.16	-179.1	4.31	165.8	0.13	-7.9	0.14	158.1
200	0.15	-179.2	4.26	151.4	0.13	-15.9	0.14	138.6
400	0.14	-179.5	4.24	123.6	0.13	-31.6	0.13	98.0
600	0.13	-174.0	4.26	95.2	0.13	-48.0	0.11	53.8
800	0.12	-157.3	4.30	65.9	0.13	-66.0	0.08	-6.1
1000	0.15	-144.3	4.30	35.8	0.13	-84.6	0.09	-85.3
1200	0.19	-145.1	4.29	4.4	0.13	-103.9	0.14	-148.5
1400	0.19	-152.3	4.25	-28.4	0.13	-123.4	0.20	164.3
1500	0.16	-151.7	4.23	-45.6	0.14	-134.6	0.22	141.0
1600	0.12	-136.6	4.22	-64.0	0.14	-146.2	0.22	116.2