

# AC1227

## 0.3 TO 1200 MHz TO-8 CASCADABLE AMPLIFIER

**Typical Values**

High Output Level .....	<b>AC1227</b> +14.0 dBm
High Third Order I.P. ....	+28.0 dBm
Low SWR .....	< 1.5:1
High Performance Thin Film Standard Size TO-8	

### SPECIFICATIONS\*

Parameter	Typical	Guaranteed*	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	0.1-1300 MHz	0.3-1200 MHz	0.3-1200 MHz
Small Signal Gain (Min.)	12.3 dB	11.0 dB	10.5 dB
Gain Flatness (Max.)	±0.25 dB	±0.5 dB	±0.8 dB
Noise Figure (Max.)	4.3 dB	5.0 dB	5.5 dB
SWR (Max.) Input/Output	< 1.5:1	1.8:1	1.8:1
Power Output (Min.) @ 1dB comp.	+14.0 dBm	+13.0 dBm	+12.5 dBm
DC Current (Max.)	44.0 mA	46.0 mA	48.0 mA

\* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.

### INTERMODULATION PERFORMANCE

**Typical @ 25 °C**

Second Order Harmonic Intercept Point .....	<b>AC1227</b> +46 dBm
Second Order Two Tone Intercept Point .....	+40 dBm
Third Order Two Tone Intercept Point .....	+28 dBm

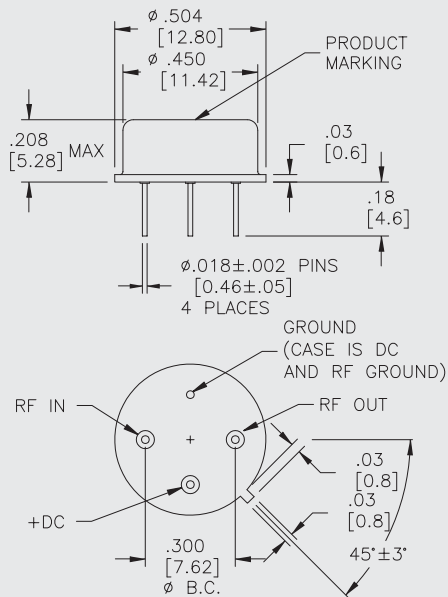
### ABSOLUTE MAXIMUM RATINGS

Storage Temperature .....	-62 to +125 °C
Maximum Case Temperature .....	+125 °C
Maximum DC Voltage .....	+18 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 .....	+100 °C
Thermal Resistance <sup>1</sup> (θjc) .....	+55 °C/Watt
Junction Temperature Rise Above Case (Tjc) .....	+37.8 °C

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

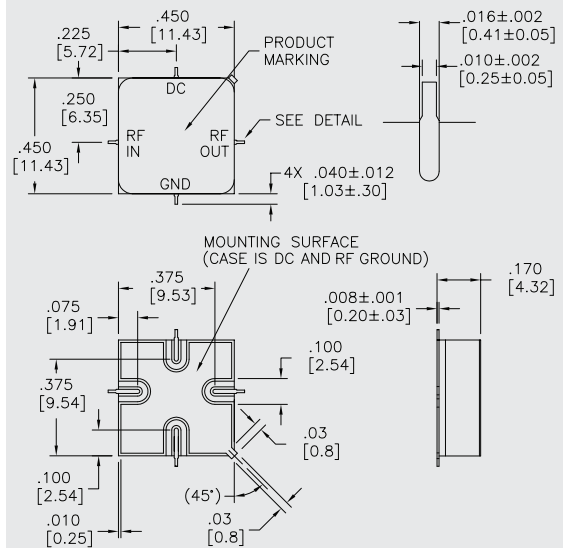
### AC1227

#### TO-8 Package for Amplifiers



### AS1227

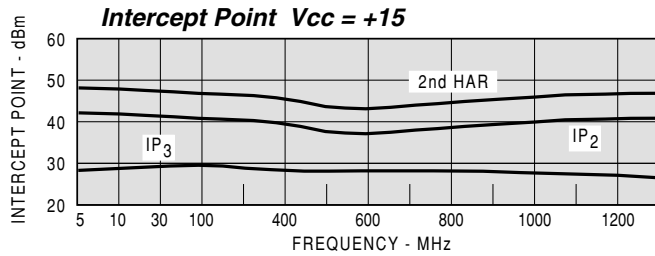
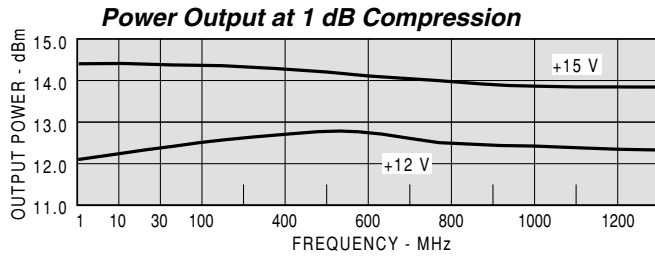
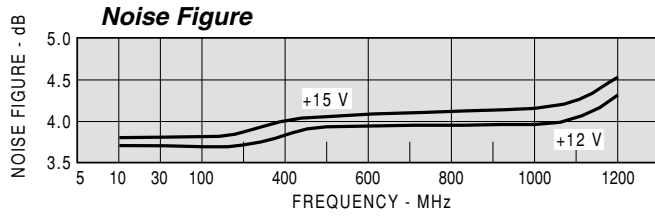
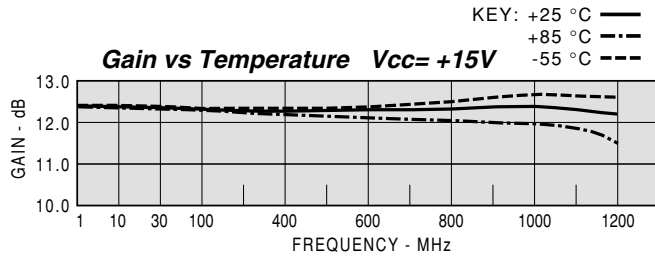
#### SMT0-8 Package for Amplifiers



**If DC is present on RF input/output, this model requires additional external blocking capacitors.**

DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**



**TYPICAL AUTOMATIC TEST DATA**

Model: AC1227			Vcc= +15V		Icc= 43.90	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	
MHZ	IN	OUT	DB	NSEC	DB	
0.3	1.33	1.32	12.5			-18.1
1.0	1.23	1.17	12.4			-18.3
10	1.22	1.15	12.4	1.241		-18.4
50	1.23	1.15	12.3	0.409		-18.5
100	1.22	1.15	12.3	0.399		-18.5
200	1.26	1.13	12.3	0.380		-18.5
300	1.30	1.11	12.2	0.377		-18.5
400	1.31	1.07	12.2	0.392		-18.6
500	1.34	1.02	12.2	0.352		-18.6
600	1.38	1.03	12.2	0.389		-18.5
700	1.38	1.08	12.2	0.395		-18.5
800	1.37	1.15	12.3	0.404		-18.3
900	1.34	1.23	12.3	0.411		-18.1
1000	1.27	1.33	12.3	0.431		-17.9
1100	1.28	1.43	12.3	0.451		-17.7
1200	1.37	1.54	12.2	0.486		-17.4
1300	1.55	1.64	11.9	0.488		-17.3

LINEAR S-PARAMETERS

Model: AC1227			Vcc= +15V				Icc= 43.90	
FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0.3	0.14	-46.2	4.20	-169.0	0.126	-7.0	0.14	-112.3
1.0	0.10	-17.3	4.19	-177.2	0.122	-3.0	0.08	-146.7
10	0.10	-4.2	4.17	178.9	0.120	-1.0	0.07	-178.0
50	0.10	-16.8	4.14	172.9	0.119	-4.0	0.07	173.4
100	0.10	-30.7	4.12	165.7	0.119	-7.0	0.07	166.5
200	0.12	-61.3	4.11	152.0	0.119	-13.0	0.06	154.0
300	0.13	-85.8	4.10	138.5	0.118	-19.0	0.05	143.1
400	0.13	-109.9	4.06	124.4	0.118	-25.0	0.03	131.1
500	0.15	-125.7	4.06	111.6	0.118	-30.0	0.01	140.0
600	0.16	-146.3	4.08	97.7	0.118	-37.0	0.01	-114.5
700	0.16	-167.4	4.09	83.5	0.119	-43.0	0.04	-106.7
800	0.16	170.2	4.11	68.9	0.121	-49.0	0.07	-114.9
900	0.15	145.9	4.13	54.1	0.124	-56.0	0.10	-126.5
1000	0.12	116.3	4.14	38.6	0.128	-63.0	0.14	-138.7
1100	0.12	71.5	4.12	22.3	0.131	-71.0	0.18	-151.5
1200	0.16	28.8	4.05	4.9	0.134	-79.0	0.21	-165.3
1300	0.22	-9.7	3.94	-12.7	0.137	-89.0	0.24	-179.1
1400	0.00	0.0	0.00	0.0	0.000	00.0	0.00	000.0

Model: AC1227			Vcc= +12V		Icc= 35.18	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	
MHZ	IN	OUT	DB	NSEC	DB	
0.3	1.34	1.32	12.4			-18.0
1.0	1.24	1.16	12.3			-18.2
10	1.24	1.14	12.3	1.258		-18.4
50	1.24	1.14	12.3	0.425		-18.4
100	1.23	1.13	12.2	0.395		-18.4
200	1.28	1.12	12.2	0.383		-18.4
300	1.31	1.10	12.1	0.381		-18.5
400	1.32	1.06	12.1	0.392		-18.5
500	1.37	1.04	12.0	0.358		-18.5
600	1.40	1.07	12.1	0.390		-18.4
700	1.42	1.12	12.1	0.401		-18.2
800	1.41	1.19	12.1	0.405		-18.1
900	1.37	1.28	12.2	0.415		-17.9
1000	1.32	1.39	12.2	0.435		-17.5
1100	1.32	1.50	12.2	0.456		-17.3
1200	1.42	1.62	12.0	0.487		-17.0
1300	1.62	1.72	11.7	0.493		-16.8