

# AC1527 AC1528

## 10 TO 1500 MHz TO-8 CASCADABLE AMPLIFIERS

Typical Values	AC1527	AC1528
Medium Output Level	+15.0 dBm	+15.0 dBm
High Third Order I.P.	+31.0 dBm	+30.0 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	10-1500 MHz	10-1500 MHz
Small Signal Gain (Min.)			
AC1527	9.5 dB	8.5 dB	8.0 dB
AC1528	11.0 dB	10.0 dB	9.5 dB
Gain Flatness (Max.)	±0.2 dB	±0.5 dB	±0.8 dB
Noise Figure (Max.)	5.0 <sup>^</sup> dB	5.5 <sup>^</sup> dB	6.0 <sup>^</sup> dB
SWR (Max.)	Input/Output	1.8:1/1.8:1	2.0:1/2.0:1
Power Output (Min.) @ 1dB comp.	+15.0 dBm	+14.0 dBm	+13.0 dBm
Reverse Isolation	AC1527 AC1528	—	—
AC1527	15.0 dB	—	—
AC1528	16.0 dB	—	—
DC Current (Max.)	45.0 mA	50.0 mA	53.0 mA

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

### INTERMODULATION PERFORMANCE

Typical @ 25 °C	AC1527	AC1528
Second Order Harmonic Intercept Point	+49 dBm	+51 dBm
Second Order Two Tone Intercept Point	+45 dBm	+45 dBm
Third Order Two Tone Intercept Point	+31 dBm	+30 dBm

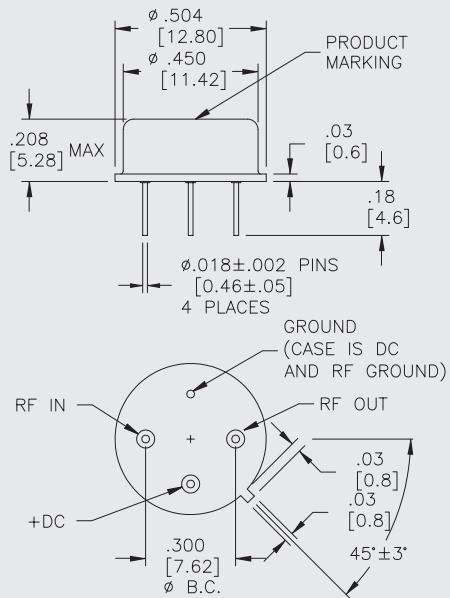
### ABSOLUTE MAXIMUM RATINGS

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 AC1527/AC1528	+100 °C/+105 °C
Thermal Resistance <sup>1</sup> (θjc; AC1527)	+48 °C/Watt
Thermal Resistance <sup>1</sup> (θjc; AC1528)	+40 °C/Watt
Junction Temperature Rise Above Case (Tjc; AC1527)	+35.7 °C
Junction Temperature Rise Above Case (Tjc; AC1528)	+29.6 °C

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

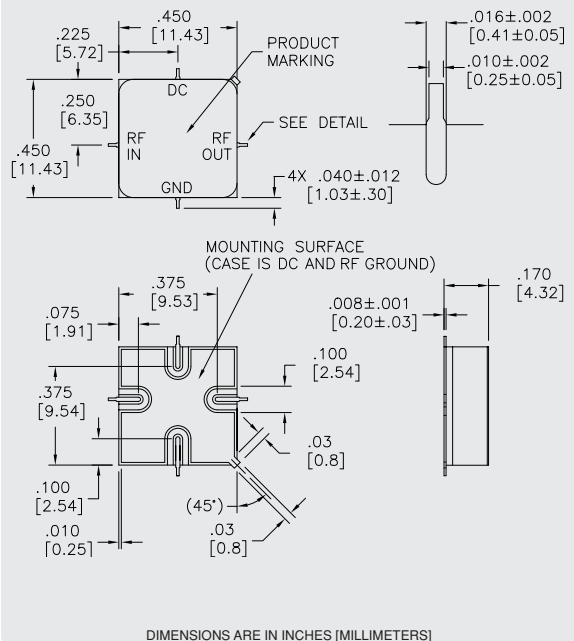
### AC1527/AC1528

#### TO-8 Package for Amplifiers



### AS1527/AS1528

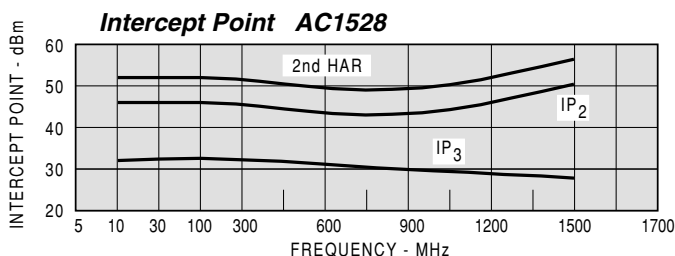
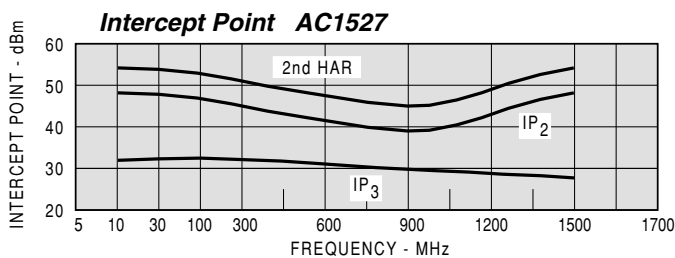
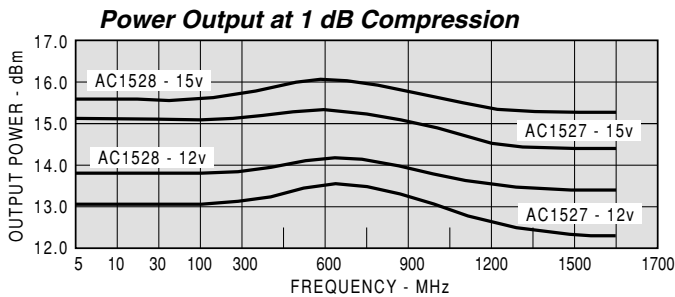
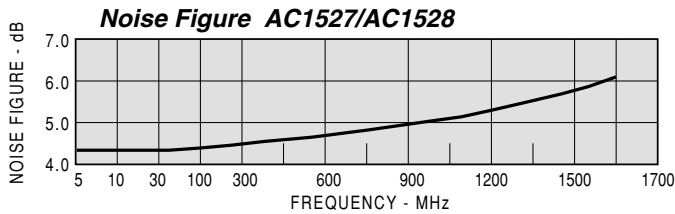
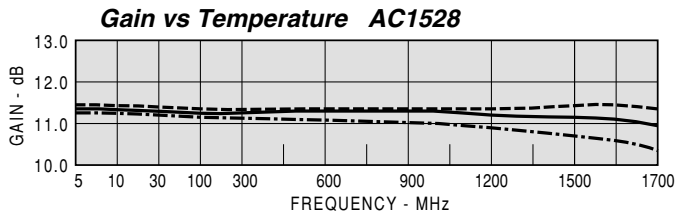
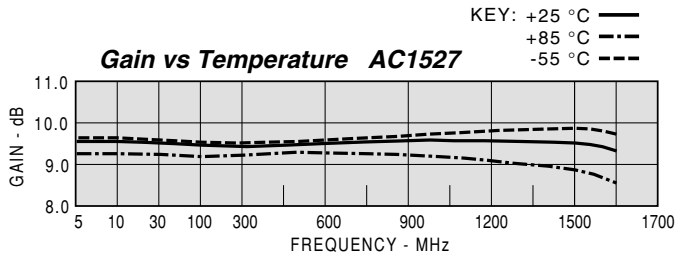
#### SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

## TYPICAL PERFORMANCE

## TYPICAL AUTOMATIC TEST DATA



Model: AC1528				Vcc= +15V		Icc= 45.59	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	DB	DB
MHZ	IN	OUT	DB	NSEC			
3	1.41	1.48	11.3				-16.7
5	1.27	1.26	11.4				-16.7
10	1.18	1.14	11.5	3.169			-16.6
20	1.16	1.08	11.5	1.224			-16.6
100	1.15	1.04	11.4	0.461			-16.6
300	1.16	1.08	11.4	0.363			-16.6
500	1.21	1.15	11.5	0.378			-16.4
700	1.27	1.22	11.4	0.378			-16.3
900	1.32	1.32	11.4	0.389			-16.1
1100	1.35	1.44	11.4	0.394			-15.9
1300	1.33	1.55	11.3	0.421			-15.5
1500	1.25	1.47	11.3	0.455			-15.0

Model: AC1528				Vcc= +15V				Icc= 45.59	
FREQ.	S11		S21		S12		S22		
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
3	0.17	-58.9	3.68	-162.1	0.146	19.0	0.19	110.0	
5	0.12	-49.1	3.70	-169.9	0.147	11.0	0.12	97.9	
10	0.08	-33.9	3.74	-175.8	0.148	5.0	0.06	80.5	
20	0.07	-22.8	3.76	-179.8	0.149	2.0	0.04	56.7	
100	0.07	-29.6	3.72	-166.5	0.148	-6.0	0.02	2.8	
300	0.07	-65.6	3.72	-140.3	0.148	-20.0	0.04	-28.8	
500	0.09	-90.7	3.74	-113.2	0.151	-33.0	0.07	-63.6	
700	0.12	-114.4	3.72	-86.0	0.153	-48.0	0.10	-101.2	
900	0.14	-135.2	3.72	-58.0	0.156	-63.0	0.14	-132.6	
1100	0.15	-165.4	3.70	-29.6	0.161	-79.0	0.18	-163.0	
1300	0.14	-159.9	3.69	-0.7	0.169	-96.0	0.22	-169.8	
1500	0.11	-77.8	3.69	-33.3	0.178	-116.0	0.19	-138.2	
1700	0.26	-6.1	3.50	-69.7	0.184	-139.0	0.11	90.3	

Model: AC1528				Vcc= +12V		Icc= 36.04	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	DB	DB
MHZ	IN	OUT	DB	NSEC			
3	1.42	1.49	11.2				-16.7
5	1.27	1.25	11.3				-16.6
10	1.19	1.14	11.4	3.151			-16.5
20	1.17	1.08	11.4	1.192			-16.5
100	1.16	1.05	11.3	0.464			-16.6
300	1.18	1.09	11.3	0.368			-16.5
500	1.23	1.16	11.3	0.381			-16.3
700	1.29	1.24	11.3	0.381			-16.1
900	1.33	1.34	11.3	0.392			-15.9
1100	1.34	1.48	11.3	0.398			-15.6
1300	1.33	1.59	11.3	0.425			-15.2
1500	1.30	1.50	11.2	0.461			-14.6

Model: AC1527				Vcc= +15V		Icc= 44.68	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	DB	DB
MHZ	IN	OUT	DB	NSEC			
3	1.34	1.41	9.4				-15.3
5	1.19	1.24	9.5				-15.2
10	1.10	1.15	9.5	2.968			-15.1
20	1.05	1.10	9.5	1.105			-15.0
100	1.00	1.07	9.5	0.438			-15.0
300	1.03	1.05	9.4	0.347			-15.1
500	1.07	1.04	9.5	0.356			-15.1
700	1.15	1.14	9.5	0.363			-15.1
900	1.25	1.28	9.6	0.369			-15.3
1100	1.34	1.43	9.6	0.378			-15.3
1300	1.36	1.56	9.5	0.387			-15.5
1500	1.25	1.61	9.3	0.425			-15.5

Model: AC1527				Vcc= +12V		Icc= 35.31	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	DB	DB
MHZ	IN	OUT	DB	NSEC			
3	1.33	1.39	9.3				-15.2
5	1.19	1.23	9.4				-15.1
10	1.10	1.14	9.4	2.967			-15.0
20	1.04	1.09	9.4	1.055			-15.0
100	1.01	1.06	9.4	0.444			-15.0
300	1.03	1.04	9.3	0.349			-15.0
500	1.07	1.07	9.4	0.359			-15.1
700	1.14	1.17	9.5	0.363			-15.1
900	1.24	1.32	9.5	0.373			-15.1
1100	1.32	1.48	9.5	0.377			-15.2
1300	1.34	1.62	9.4	0.390			-15.2
1500	1.22	1.67	9.3	0.425			-15.1