

AP1588

1200 TO 1600 MHz TO-8 CASCADABLE AMPLIFIER

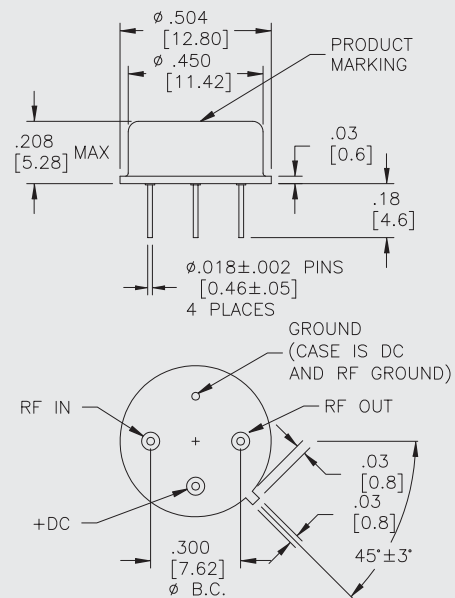
Typical Values

Low Noise Figure	1.4 dB
High Gain	> 25.0 dB
High Output Power	+24.5 dBm
High Third Order I.P.	+35 dBm
High Performance Thin Film	
Standard Size TO-8 Package	

AP1588

AP1588

TO-8 Package for Amplifiers



SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	1100-1700 MHz	1200-1600 MHz	1200-1600 MHz
Small Signal Gain (Min.)	> 25.0 dB	24.0 dB	23.5 dB
Gain Flatness (Max.)	±1.0 dB	±1.4 dB	±1.6 dB
Noise Figure (Max.)	1.4 dB	2.0 dB	2.5 dB
SWR (Max.) Input/Output	< 1.7:1	1.8:1	1.9:1
Power Output (Min.) @ 1dB comp.	+24.5 dBm	+24.0 dBm	+23.5 dBm
Reverse Isolation	45.0 dB	—	—
DC Current (Max.)	145.0 mA	153.0 mA	158.0 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 1400 MHz	+12 volts	+15 volts
Second Order Harmonic Intercept Point	+60 dBm	+64 dBm
Second Order Two Tone Intercept Point	+54 dBm	+58 dBm
Third Order Two Tone Intercept Point	+33 dBm	+35 dBm

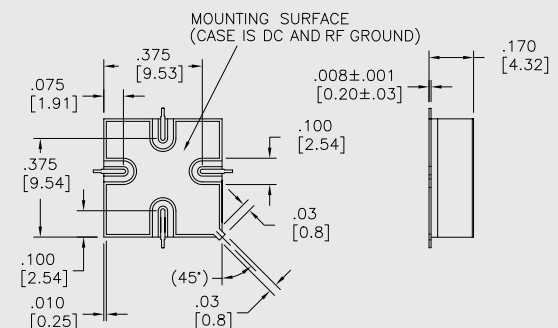
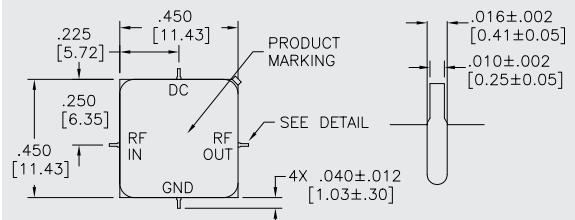
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+15 dBm
Maximum Short Term Input Power (1 Minute Max.)	100 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Burn-in Temperature	+105 °C
Thermal Resistance ¹ (θ _{jc})	+16 °C/Watt
Junction Temperature Rise Above Case (T _{jc})	+38 °C

¹ Thermal resistance is based on total power dissipation.

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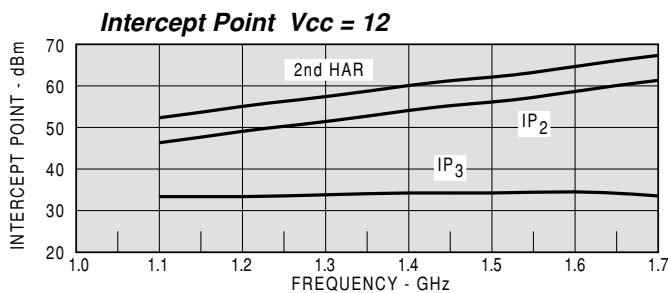
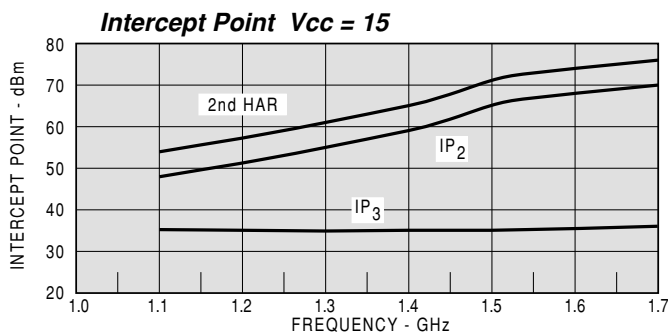
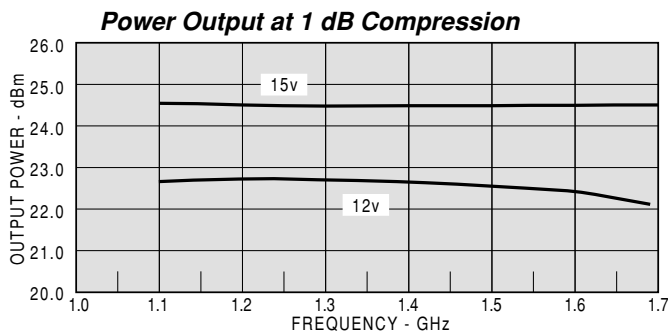
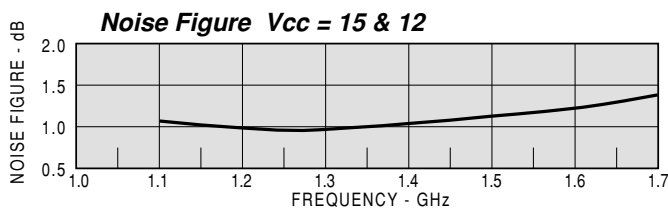
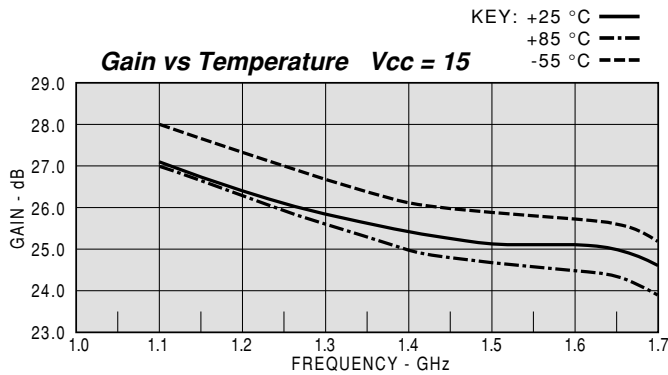
SMTO-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AP1588		Vcc=+15V				Icc=145.24	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
1000	1.67	1.76	27.86	180	0.85	-48.3	
1100	1.46	1.66	27.15	153	0.75	-44.0	
1200	1.45	1.61	26.41	128	0.69	-43.6	
1300	1.43	1.60	25.80	104	0.65	-44.8	
1400	1.31	1.59	25.52	80	0.68	-45.4	
1500	1.10	1.57	25.19	55	0.69	-45.7	
1600	1.25	1.55	25.15	26	0.80	-46.6	
1700	2.04	1.50	24.52	-7	0.92	-48.9	
1800	3.86	1.49	23.20	-42	0.98	-49.4	

LINEAR S-PARAMETERS

Model: AP1588		Vcc=+15V				Icc=145.24		
FREQ.	S11	S21		S12		S22		
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1000	0.25	9.6	24.73	179.6	0.004	76.3	0.27	103.6
1100	0.19	-39.4	22.78	152.6	0.006	68.7	0.25	93.8
1200	0.18	-78.9	20.92	127.7	0.007	56.2	0.23	82.6
1300	0.18	-104.7	19.50	104.4	0.006	49.1	0.23	71.7
1400	0.14	-122.9	18.89	79.9	0.005	35.6	0.23	60.0
1500	0.05	-133.8	18.18	55.1	0.005	15.0	0.22	47.4
1600	0.11	12.4	18.08	26.5	0.005	-13.4	0.22	34.5
1700	0.34	-3.0	16.83	-6.7	0.004	-59.6	0.20	25.9
1800	0.59	-25.1	14.46	-41.9	0.003	-108.3	0.20	28.1

Model: AP1588		Vcc=+12V				Icc=141.41	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
1000	1.78	1.87	27.66	-178	0.85	-44.6	
1100	1.57	1.76	27.05	154	0.75	-42.8	
1200	1.56	1.69	26.39	129	0.71	-43.0	
1300	1.57	1.67	25.83	105	0.66	-42.8	
1400	1.49	1.63	25.64	80	0.69	-43.1	
1500	1.26	1.61	25.41	55	0.70	-43.7	
1600	1.12	1.54	25.54	25	0.83	-44.9	
1700	1.92	1.46	25.03	-11	1.00	-45.5	
1800	4.03	1.53	23.44	-49	1.10	-45.6	

LINEAR S-PARAMETERS

Model: AP1588		Vcc=+12V				Icc=141.41		
FREQ.	S11	S21		S12		S22		
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1000	0.28	14.1	24.16	-178.4	0.006	84.6	0.30	105.1
1100	0.22	-32.5	22.52	154.4	0.007	69.4	0.28	95.8
1200	0.22	-71.4	20.87	128.9	0.007	67.4	0.26	85.1
1300	0.22	-98.6	19.57	105.2	0.007	44.6	0.25	74.9
1400	0.20	-120.0	19.15	80.3	0.007	19.6	0.24	63.3
1500	0.12	-144.6	18.65	55.0	0.007	8.8	0.23	51.0
1600	0.06	55.8	18.92	25.2	0.006	-16.6	0.21	39.1
1700	0.32	11.4	17.84	-10.7	0.005	-64.2	0.19	36.7
1800	0.60	-18.8	14.87	-49.1	0.005	-109.2	0.21	45.5