

AP3008

20 TO 3000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values

High Output Power	AP3008 +26.0 dBm
Ultra Broad Bandwidth	20-3000 MHz
High Third Order I.P.	+40.0 dBm
High Performance Thin Film Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	10-3200 MHz	20-3000 MHz	20-3000 MHz
Small Signal Gain (Min.)	12.5 dB	11.0 dB	10.5 dB
Gain Flatness (Max.)	±0.5 dB	±0.7 dB	±0.9 dB
Noise Figure (Max.) 200-3000 MHz	3.0 dB	3.8 dB	4.3 dB
SWR (Max.) Input/Output	1.7:1	1.9:1	2.0:1
Power Output (Min.) @ 1dB comp. 20-2500 MHz 2500-3000 MHz	+26.0 dBm +25.0 dBm	+25.0 dBm +23.5 dBm	+24.5 dBm +23.0 dBm
Reverse Isolation	21.0 dB	—	—
DC Current (Max.)	167 mA	176 mA	186 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C	+12 Volts	+15 Volts
Second Order Harmonic Intercept Point	+56 dBm	+64 dBm
Second Order Two Tone Intercept Point	+50 dBm	+58 dBm
Third Order Two Tone Intercept Point	+36 dBm	+40 dBm

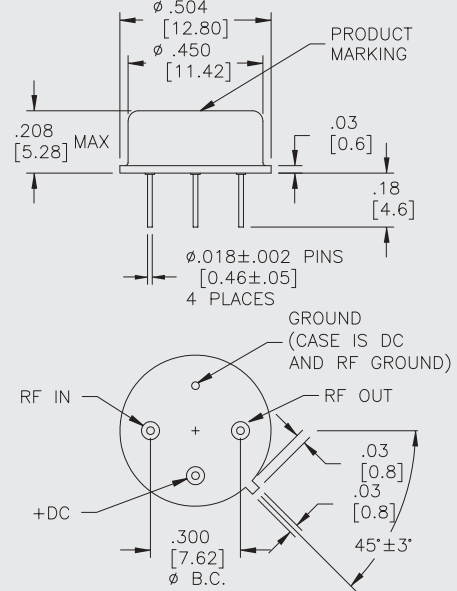
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 to +125 °C
Maximum Case Temperature	+105 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+20 dBm
Maximum Short Term Input Power (1 Minute Max.)	100 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Burn-in Temperature	+85 °C
Thermal Resistance ¹ (θjc)	+23 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+56.8 °C

¹ Thermal resistance is based on total power dissipation.

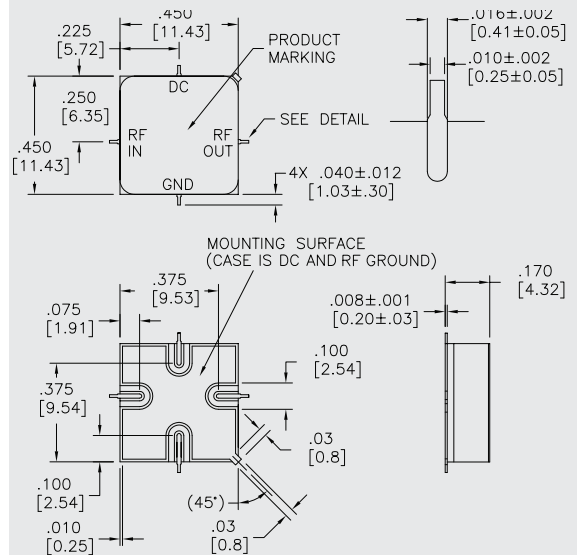
AP3008

TO-8 Package for Amplifiers



APS3008

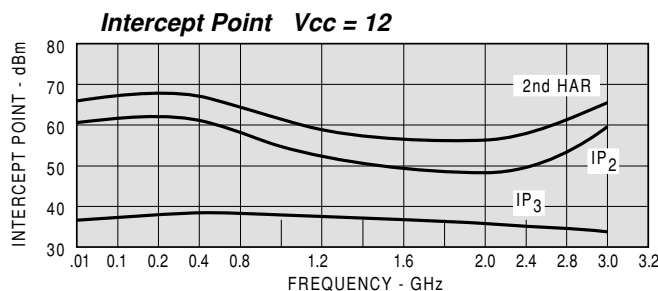
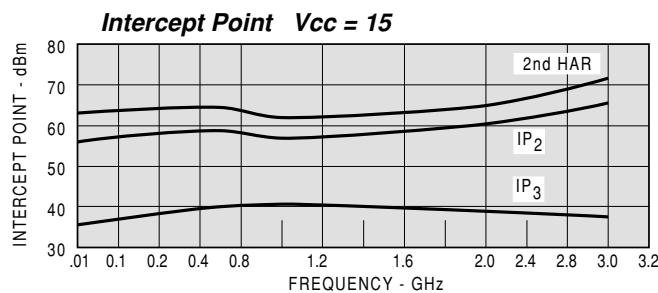
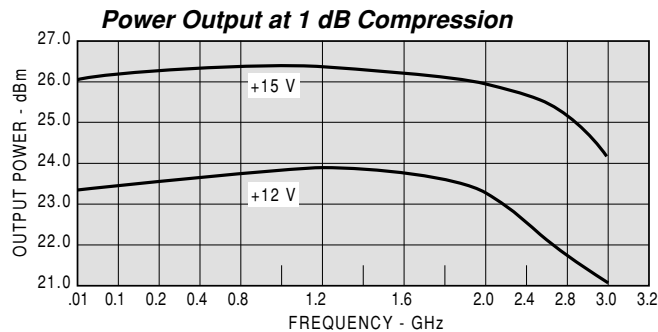
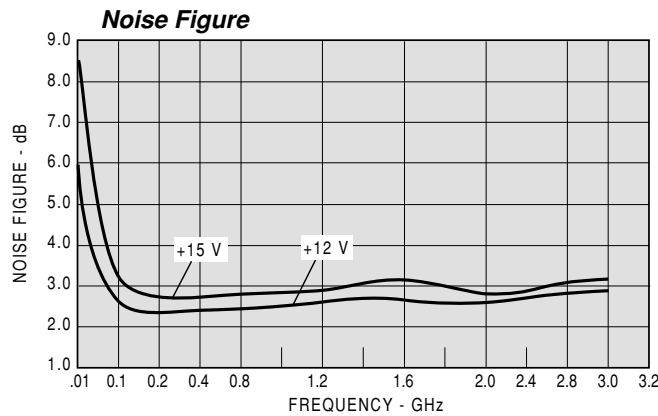
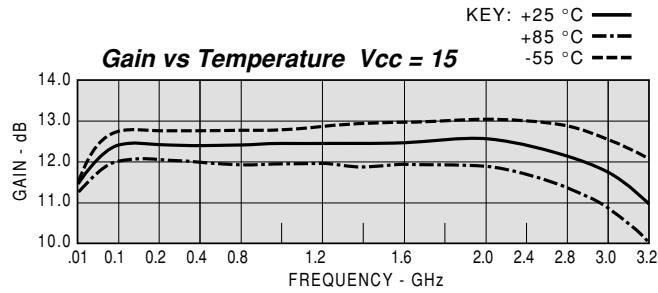
SMTO-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AP3008			Vcc=+15V			lcc=166.94	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
10	2.02	1.33	11.61	-146.0		-17.60	
20	1.43	1.50	12.32	-164.0		-18.40	
50	1.17	1.65	12.46	-177.0	0.74	-19.00	
100	1.12	1.67	12.48	175.0	0.43	-19.10	
200	1.11	1.66	12.49	165.0	0.28	-19.10	
400	1.16	1.65	12.48	147.0	0.24	-19.20	
600	1.22	1.63	12.46	130.0	0.24	-19.30	
800	1.29	1.60	12.49	114.0	0.23	-19.40	
1000	1.36	1.58	12.52	97.0	0.23	-19.60	
1200	1.42	1.57	12.54	79.0	0.24	-19.70	
1400	1.47	1.55	12.54	62.0	0.24	-19.80	
1600	1.51	1.58	12.51	44.0	0.24	-20.10	
1800	1.59	1.58	12.50	26.0	0.26	-20.40	
2000	1.63	1.57	12.46	7.0	0.26	-20.40	
2200	1.62	1.55	12.36	-10.0	0.25	-20.60	
2400	1.56	1.53	12.28	-29.0	0.26	-20.50	
2600	1.46	1.52	12.26	-49.0	0.28	-20.20	
2800	1.40	1.48	12.17	-70.0	0.30	-19.40	
3000	1.44	1.42	11.81	-94.0	0.33	-19.00	
3200	1.61	1.37	11.02	-118.0	0.34	-18.50	

Model: AP3008

Vcc=+15V

lcc=166.94

LINEAR S-PARAMETERS

FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10	0.34	-66.10	3.81	-145.60	0.13	16.10	0.14	177.40
20	0.18	-77.60	4.13	-163.90	0.12	3.60	0.20	-164.40
50	0.08	-82.20	4.20	-177.00	0.11	-1.30	0.25	-177.10
100	0.06	-87.60	4.21	175.10	0.11	-4.10	0.25	173.10
200	0.05	-92.50	4.21	165.00	0.11	-8.30	0.25	159.10
400	0.07	-106.60	4.21	147.40	0.11	-17.00	0.25	135.70
600	0.10	-116.00	4.20	130.30	0.11	-25.90	0.24	112.90
800	0.13	-124.10	4.21	113.50	0.11	-34.30	0.23	89.10
1000	0.15	-132.50	4.23	96.60	0.11	-43.10	0.23	64.10
1200	0.17	-140.70	4.24	79.20	0.10	-51.40	0.22	38.20
1400	0.19	-149.20	4.24	61.60	0.10	-59.30	0.22	10.80
1600	0.20	-154.80	4.22	44.30	0.10	-68.90	0.22	-17.40
1800	0.23	-164.00	4.22	25.90	0.10	-75.90	0.22	-46.90
2000	0.24	-176.50	4.20	7.40	0.10	-83.80	0.22	-73.10
2200	0.24	168.70	4.15	-10.30	0.09	-91.00	0.22	-95.70
2400	0.22	149.60	4.11	-28.80	0.10	-97.20	0.21	-115.40
2600	0.19	123.80	4.10	-48.60	0.10	-103.50	0.21	-137.10
2800	0.17	87.50	4.06	-70.10	0.11	-111.90	0.19	-163.30
3000	0.18	43.80	3.89	-93.70	0.11	-121.90	0.17	-163.30
3200	0.23	7.50	3.55	-118.30	0.12	-133.20	0.16	122.30

Model: AP3008			Vcc=+12V			lcc=159.43	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
10	1.99	1.41	11.56	-146.0		-18.00	
20	1.43	1.67	12.26	-164.0		-19.00	
50	1.17	1.84	12.39	-177.0	0.71	-19.60	
100	1.12	1.86	12.42	175.0	0.43	-19.80	
200	1.12	1.85	12.43	165.0	0.28	-19.70	
400	1.17	1.83	12.42	147.0	0.25	-19.70	
600	1.24	1.79	12.42	130.0	0.24	-19.70	
800	1.31	1.74	12.42	113.0	0.24	-19.70	
1000	1.38	1.69	12.44	96.0	0.24	-19.70	
1200	1.45	1.63	12.47	79.0	0.24	-19.60	
1400	1.51	1.56	12.48	61.0	0.25	-19.50	
1600	1.55	1.52	12.48	43.0	0.24	-19.50	
1800	1.65	1.44	12.49	25.0	0.26	-19.50	
2000	1.70	1.37	12.42	6.0	0.26	-19.20	
2200	1.71	1.32	12.26	-13.0	0.26	-19.20	
2400	1.67	1.27	12.16	-32.0	0.27	-18.90	
2600	1.58	1.22	12.06	-52.0	0.28	-18.50	
2800	1.54	1.13	11.82	-74.0	0.31	-17.80	
3000	1.61	1.04	11.26	-98.0	0.32	-17.30	
3200	1.82	1.08	10.30	-121.0	0.33	-16.90	