



AP4048 1000 TO 4000 MHz AR4048 TO-8 & TO-8B CASCADABLE AMPLIFIERS

Typical Values

AP4048/AR4048

High Output Level.....	+24.0 dBm
High Third Order I.P.....	+35 dBm
High Reverse Isolation.....	38 dB
High Performance Thin Film	
Available in Surface Mount	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50° C	-55 to +85° C
Frequency (Min.)	700-4100 MHz	1000-4000 MHz	1000-4000 MHz
Small Signal Gain (Min.)	16.8 dB	16.0 [^] dB	15.5 [^] dB
Gain Flatness (Max.)	±0.3 dB	±0.6 dB	±0.7 dB
Noise Figure (Max.)	<4.0 dB	4.5 dB	5.0 dB
SWR (Max.) Input/Output	<1.6:1	1.9:1	2.0:1
Power Output (Min.) @ 1dB comp.	+24.0 dBm	+23.0 dBm	+22.5 dBm
Reverse Isolation	38 dB	—	—
DC Current (Max.)	225 mA	235 mA	245 mA

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

[^] 0.5 dB less above 3700 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25° C; 2500 MHz	+12 Volts	+15 Volts
Second Order Harmonic Intercept Point.....	+57 dBm	+58 dBm
Second Order Two Tone Intercept Point.....	+51 dBm	+52 dBm
Third Order Two Tone Intercept Point.....	+34 dBm	+35 dBm

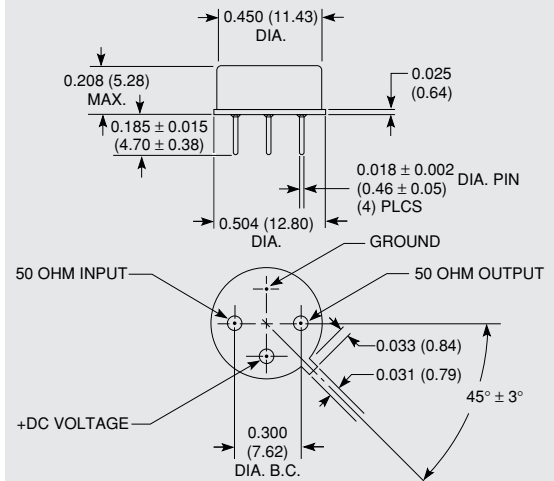
ABSOLUTE MAXIMUM RATINGS

Storage Temperature.....	-62 to 125° C
Maximum Case Temperature.....	+125° C
Maximum DC Voltage.....	+17 Volts
Maximum Continuous RF Input Power.....	+20 dBm
Maximum Short Term Input Power (1 Minute Max.).....	200 Milliwatts
Maximum Peak Power (3 µsec Max.).....	0.5 Watt
Burn-in Temperature.....	+105° C
Thermal Resistance ¹ (θjc).....	+12° C/Watt
Junction Temperature Rise Above Case (Tjc).....	+42.1° C

¹ Thermal resistance is based on total power dissipation.

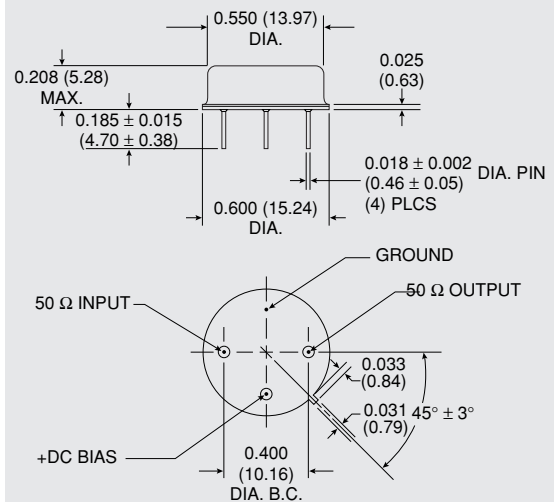
AP4048

TO-8 Package for Amplifiers



AR4048

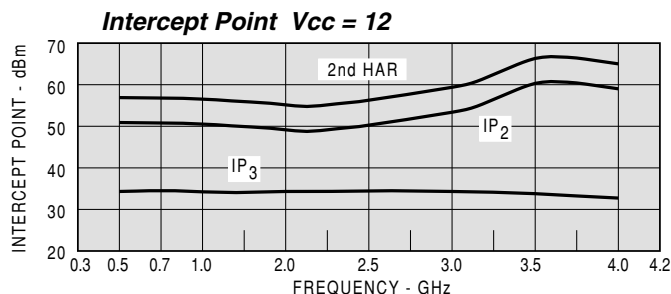
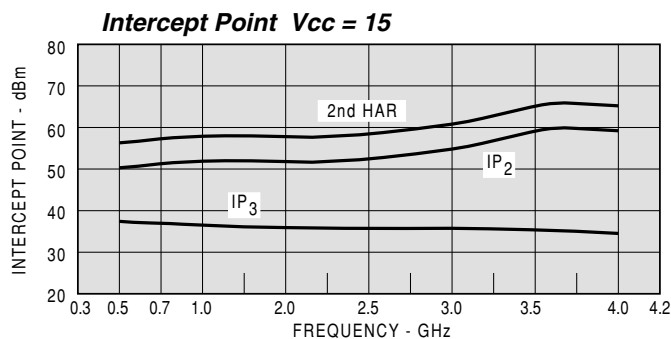
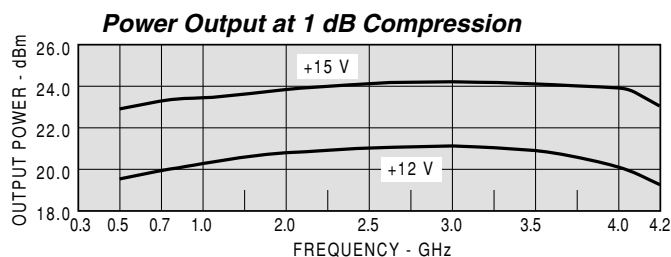
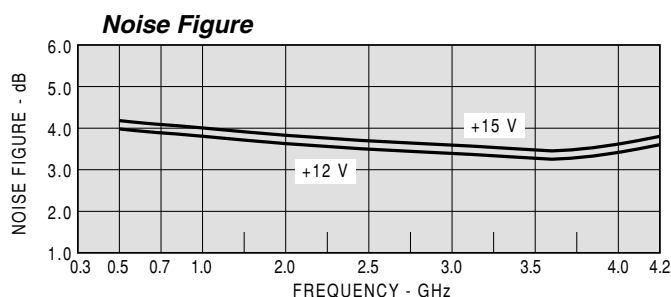
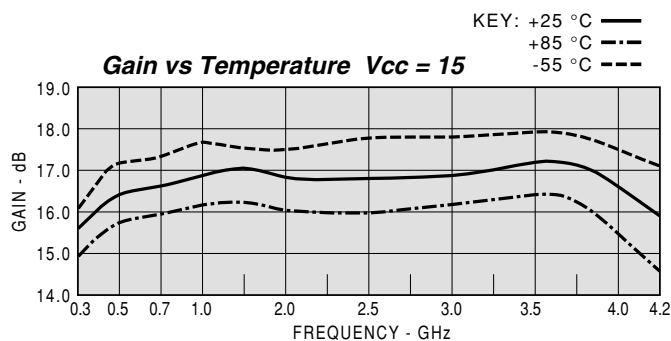
TO-8B Package for Amplifiers



DIMENSIONS ARE IN INCHES (MILLIMETERS)



TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

Model: AR4048			$V_{cc} = +15V$			$I_{cc} = 226.20$
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO
MHZ	IN	OUT	DB	DEG	NSEC	DB
300	2.29	1.46	15.42	43	1.50	-39.2
500	1.54	1.31	16.35	-13	0.65	-36.9
700	1.32	1.34	16.65	-50	0.48	-36.9
1000	1.20	1.39	16.89	-95	0.41	-37.2
1200	1.18	1.39	16.99	-124	0.39	-37.8
1400	1.21	1.38	16.95	-151	0.38	-37.8
1600	1.18	1.34	16.89	-178	0.37	-38.2
1800	1.17	1.31	16.82	156	0.36	-39.2
2000	1.23	1.23	16.82	132	0.35	-39.8
2200	1.22	1.18	16.75	106	0.35	-40.0
2400	1.22	1.16	16.71	81	0.35	-40.2
2600	1.16	1.15	16.77	56	0.35	-39.5
2800	1.16	1.14	16.89	31	0.35	-39.4
3000	1.33	1.15	16.94	5	0.36	-38.6
3200	1.49	1.15	17.04	-23	0.39	-38.0
3400	1.59	1.14	17.00	-51	0.39	-37.0
3600	1.71	1.17	16.95	-80	0.40	-36.9
3800	1.59	1.27	16.73	-110	0.43	-36.8
4000	1.55	1.42	16.30	-141	0.42	-36.4
4200	1.43	1.67	15.50	-175	0.47	-37.8

Model: AR4048			$V_{cc} = +15V$			$I_{cc} = 226.20$
FREQ.	S11	S11	S21	S21	S12	S22
MHZ	MAG	ANG	MAG	ANG	MAG	ANG
300	0.39	-92.6	5.90	42.7	0.011	34.3
500	0.21	-114.0	6.57	-13.0	0.014	3.3
700	0.14	-124.9	6.80	-49.8	0.014	-16.8
1000	0.09	-144.6	6.99	-95.5	0.014	-38.6
1200	0.08	-137.0	7.07	-123.9	0.013	-53.1
1400	0.10	-128.4	7.04	-151.1	0.013	-71.0
1600	0.08	-139.8	6.99	-177.5	0.012	-87.9
1800	0.08	-148.4	6.93	156.5	0.011	-108.2
2000	0.10	-149.0	6.93	131.5	0.010	-122.7
2200	0.10	-153.7	6.88	106.3	0.010	-139.6
2400	0.10	-130.9	6.84	80.9	0.010	-156.4
2600	0.08	-144.0	6.90	55.9	0.011	-170.0
2800	0.07	-134.9	6.99	30.8	0.011	177.4
3000	0.14	-139.7	7.03	5.0	0.012	167.3
3200	0.20	-144.5	7.11	-22.9	0.013	157.6
3400	0.23	-139.2	7.08	-51.0	0.014	149.2
3600	0.26	-152.9	7.04	-79.5	0.014	138.2
3800	0.23	-163.1	6.87	-110.4	0.014	128.3
4000	0.21	-169.5	6.53	-140.7	0.015	121.8
4200	0.18	-153.7	5.96	-174.7	0.013	115.4
4400	0.17	-159.0	5.29	153.3	0.012	114.4