

AR2584

20 TO 2500 MHz TO-8B CASCADABLE AMPLIFIER

Typical Values	AR2584
High Efficiency	41 mA at +8Vdc
High Gain	18.5 dB
Low Noise	3.0 dB
High Performance Thin Film TO-8B Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	10-2600 MHz	20-2500 MHz	20-2500 MHz
Small Signal Gain (Min.)	18.5 dB	18.0 dB	17.0 dB
Gain Flatness (Max.)	±0.5 dB	±0.7 dB	±0.8 dB
Noise Figure (Max.) 200-2500 MHz	3.0 dB	3.5 dB	4.0 dB
SWR (Max.) Input/Output	1.4:1	1.7:1	1.8:1
Power Output (Min.) @ 1dB comp.	+15.0 dBm	+14.5 dBm	+14.0 dBm
Reverse Isolation	36.0 dB	—	—
DC Current (Max.)	41.0 mA	44.0 mA	47.0 mA

* Measured in a 50-ohm system at +8 Vdc unless otherwise specified.

INTERMODULATION PERFORMANCE

Typical @ 25 °C	AR2584
Second Order Harmonic Intercept Point	+47 dBm
Second Order Two Tone Intercept Point	+41 dBm
Third Order Two Tone Intercept Point	+26 dBm

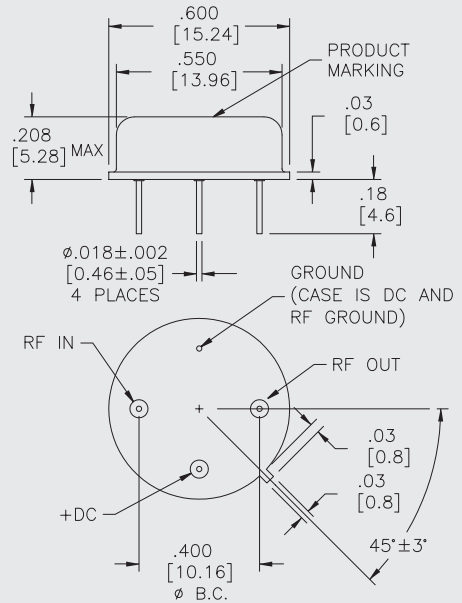
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+12 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	+125 °C
Thermal Resistance ¹ (θjc)	+44 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+15.4 °C

¹ Thermal resistance is based on total power dissipation.

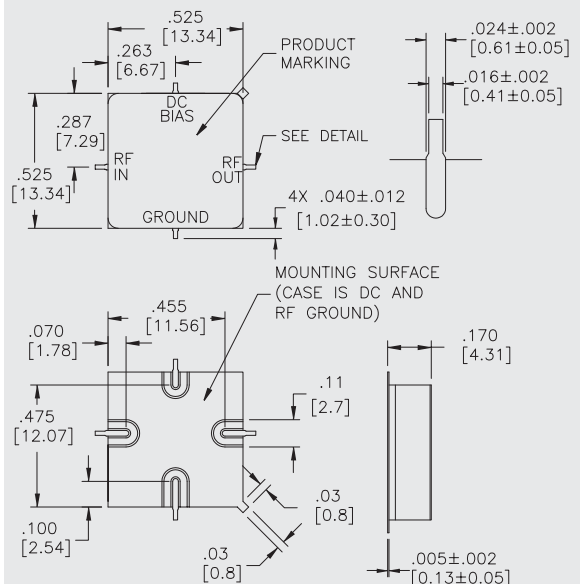
AR2584

TO-8B Package for Amplifiers



ARS2584

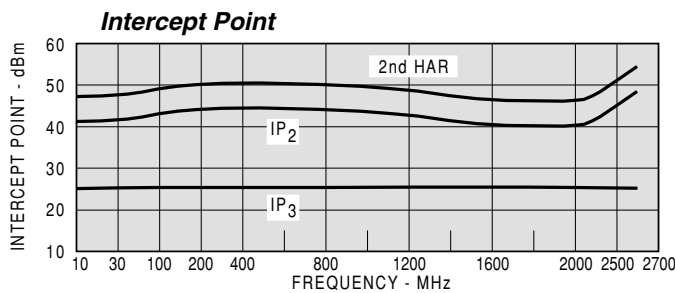
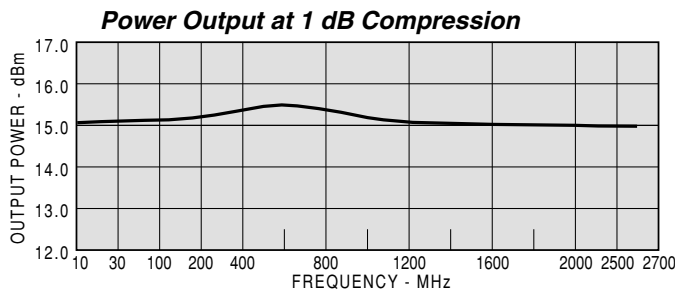
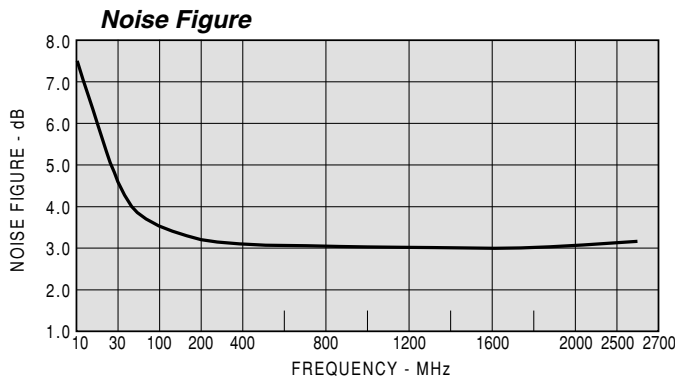
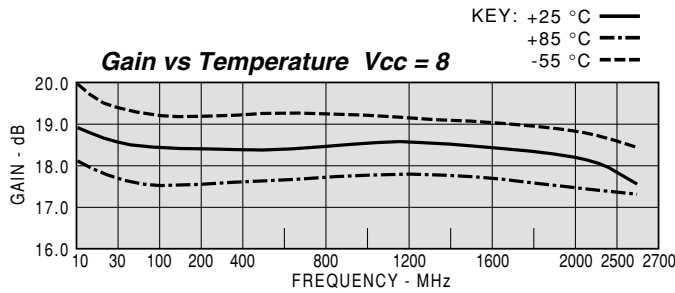
SMT0-8B Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



MODEL: AR2584 Vcc = +8V Icc = 41.19 mA

FREQ. MHz	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
10	2.18	2.33	18.7		-43.2
20	1.40	1.34	19.5		-38.3
50	1.30	1.11	19.1		-37.9
100	1.29	1.07	19.1	0.683	-37.9
300	1.28	1.04	18.9	0.450	-37.2
500	1.29	1.03	19.0	0.392	-37.1
700	1.30	1.03	19.1	0.401	-37.0
900	1.32	1.05	19.2	0.413	-36.5
1100	1.36	1.05	19.2	0.411	-36.9
1300	1.39	1.05	19.2	0.413	-36.9
1500	1.39	1.04	19.2	0.409	-36.5
1700	1.37	1.02	19.1	0.414	-35.9
1900	1.38	1.04	19.0	0.407	-35.5
2100	1.35	1.09	19.1	0.413	-35.0
2300	1.28	1.16	19.1	0.425	-34.3
2500	1.26	1.23	19.2	0.436	-33.4
2700	1.35	1.30	19.2	0.458	-32.6

MODEL: AR2584 Vcc = +8V Icc = 41.19 mA

LINEAR S-PARAMETERS

FREQ. MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10	0.37	-61.2	8.64	63.6	0.007	68	0.40	95.6
20	0.17	-50.8	9.45	25.0	0.012	27	0.14	80.5
50	0.13	-21.1	8.99	3.0	0.013	8	0.05	89.9
100	0.13	-12.8	8.99	-9.3	0.013	3	0.03	82.2
300	0.12	-6.5	8.82	-41.6	0.014	-10	0.02	15.2
500	0.12	-8.2	8.90	-69.9	0.014	-22	0.02	-55.1
700	0.13	-10.1	9.02	-98.7	0.014	-34	0.02	-128.0
900	0.14	-14.8	9.12	-128.3	0.014	-46	0.02	-171.0
1100	0.15	-23.2	9.15	-157.9	0.014	-58	0.03	162.5
1300	0.16	-34.0	9.10	172.3	0.014	-71	0.02	157.2
1500	0.16	-44.0	9.07	142.8	0.015	-86	0.02	133.9
1700	0.16	-54.4	8.98	113.1	0.016	-101	0.01	77.0
1900	0.16	-63.5	8.95	83.8	0.017	-119	0.02	-63.5
2100	0.15	-70.5	8.97	54.0	0.018	-137	0.04	-105.6
2300	0.12	-73.1	9.07	23.5	0.019	-155	0.07	-128.1
2500	0.12	-58.4	9.12	-7.9	0.021	-173	0.10	-143.9
2700	0.15	-41.0	9.16	-40.8	0.023	170	0.13	-159.1
2900	0.25	-35.7	9.04	-74.5	0.025	151	0.16	-176.3