

AR2564

20 TO 2500 MHz TO-8B CASCADABLE AMPLIFIER

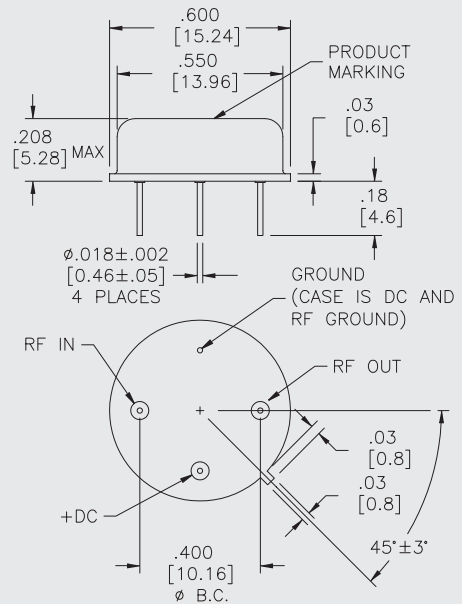
Typical Values

High Gain	19.0 dB
Low Noise Figure	3.5 dB
Medium Output Level	+16.5 dBm
High Reverse Isolation	35 dB
High Performance Thin Film	
Standard Size TO-8B Package	

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TO-8B Package for Amplifiers



SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	20-2600 MHz	20-2500 MHz	20-2500 MHz
Small Signal Gain (Min.)	19.0 dB	18.0 dB	17.5 dB
Gain Flatness (Max.)	±0.4 dB	±0.6 dB	±0.7 dB
Noise Figure (Max.) 200-2500 MHz	3.5 dB	4.0 dB	4.5 dB
SWR (Max.) Input/Output	1.4:1	1.7:1	1.8:1
Power Output (Min.) @ 1dB comp.	+16.5 dBm	+15.5 dBm	+15.0 dBm
Reverse Isolation	35.0 dB	—	—
DC Current (Max.)	50 mA	54 mA	58 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 1000 MHz

Second Order Harmonic Intercept Point	+45 dBm
Second Order Two Tone Intercept Point	+39 dBm
Third Order Two Tone Intercept Point	+27 dBm

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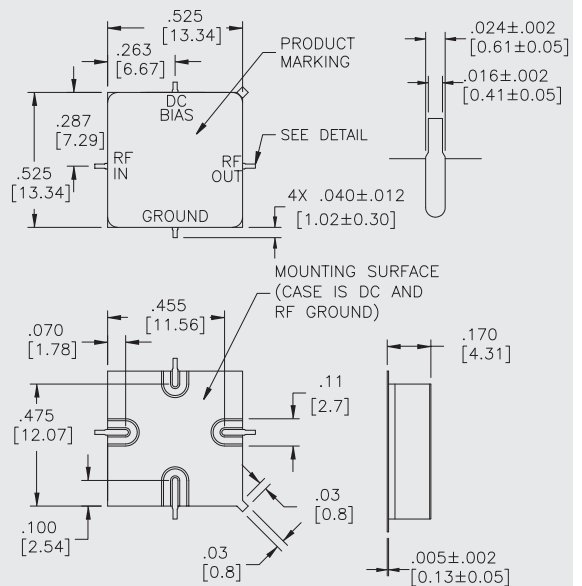
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 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.)	250 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Burn-in Temperature	+125 °C
Thermal Resistance¹ (θjc)	+20 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+24.8 °C

¹ Thermal resistance is based on total power dissipation.

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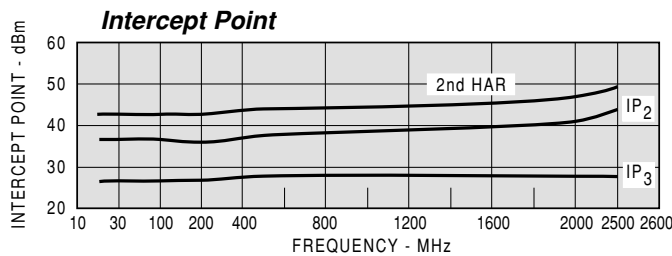
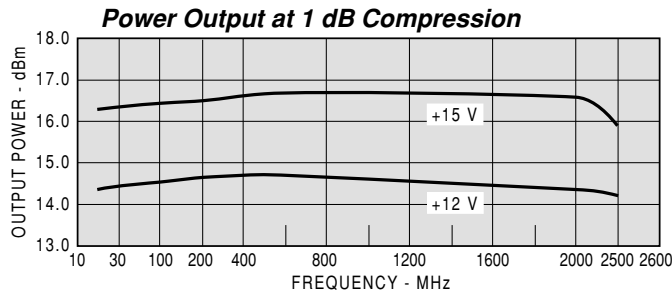
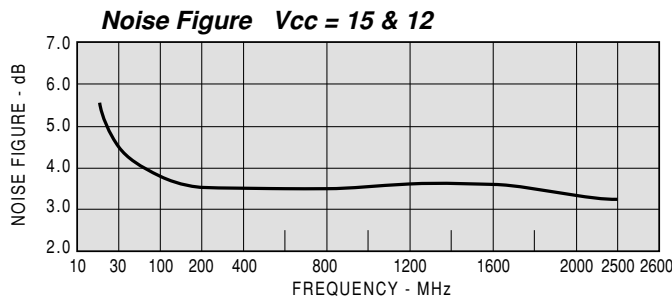
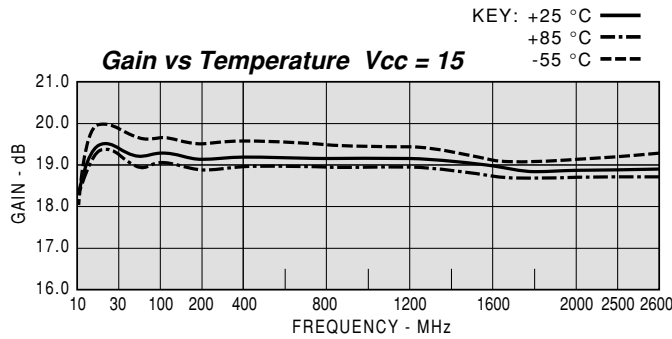
SMT0-8B Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AR2564			Vcc=+15V			Icc=49.16	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	REV/ISO
MHZ	IN	OUT	DB	DEG	NSEC	DB	DB
20	1.26	1.59	19.30	31.00		-40.50	
30	1.19	1.25	19.27	16.00		-38.40	
40	1.19	1.14	19.10	9.00	2.00	-37.30	
50	1.20	1.10	18.97	5.00	1.20	-36.80	
100	1.19	1.09	19.09	-7.00	0.69	-36.20	
150	1.19	1.06	19.10	-17.00	0.54	-36.00	
200	1.19	1.05	18.96	-25.00	0.47	-36.60	
300	1.19	1.03	19.04	-39.00	0.38	-35.90	
400	1.19	1.04	19.06	-54.00	0.41	-36.40	
500	1.20	1.04	19.04	-68.00	0.40	-36.60	
600	1.21	1.06	19.05	-82.00	0.39	-36.50	
700	1.22	1.08	19.05	-96.00	0.39	-36.10	
800	1.23	1.10	19.04	-111.00	0.39	-36.20	
900	1.26	1.11	19.05	-125.00	0.39	-36.60	
1000	1.27	1.13	19.04	-139.00	0.39	-36.40	
1100	1.28	1.15	19.03	-153.00	0.40	-36.60	
1200	1.31	1.16	19.00	-167.00	0.40	-36.80	
1300	1.34	1.17	18.92	-178.00	0.39	-36.40	
1400	1.34	1.17	18.87	-164.00	0.39	-36.60	
1500	1.36	1.17	18.83	-150.00	0.39	-35.90	
1600	1.38	1.15	18.77	-136.00	0.40	-36.10	
1700	1.37	1.17	18.63	-122.00	0.39	-36.10	
1800	1.39	1.18	18.59	-108.00	0.37	-36.60	
1900	1.43	1.20	18.58	-95.00	0.38	-36.40	
2000	1.44	1.23	18.59	-80.00	0.40	-35.60	
2100	1.43	1.24	18.58	-66.00	0.39	-35.30	
2200	1.44	1.26	18.58	-52.00	0.39	-35.40	
2300	1.44	1.28	18.58	-38.00	0.40	-34.60	
2400	1.42	1.29	18.58	-24.00	0.38	-34.70	
2500	1.43	1.30	18.67	-10.00	0.40	-34.30	
2600	1.41	1.32	18.74	-6.00	0.42	-33.40	

Model: AR2564		LINEAR S-PARAMETERS						Icc=49.16	
FREQ.		S11		S21		S12		S22	
MHZ		MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
20		0.11	-61.80	9.20	31.10	0.01	15.00	0.23	71.20
30		0.09	-38.90	9.20	16.50	0.01	9.60	0.11	73.90
40		0.09	-25.10	9.02	9.20	0.01	10.20	0.07	80.20
50		0.09	-19.80	8.88	5.10	0.01	9.20	0.05	100.20
100		0.09	-18.10	9.01	-7.40	0.02	-0.60	0.04	107.90
150		0.09	-16.80	9.02	-17.00	0.02	-5.00	0.03	103.40
200		0.09	-16.30	8.88	-25.40	0.02	-6.20	0.02	91.80
300		0.09	-21.90	8.96	-39.10	0.02	-17.40	0.02	109.10
400		0.09	-25.80	8.97	-53.90	0.02	-19.50	0.02	126.10
500		0.09	-31.30	8.96	-68.20	0.02	-23.70	0.02	139.50
600		0.10	-34.10	8.97	-82.30	0.02	-34.10	0.03	134.50
700		0.10	-38.50	8.96	-96.40	0.02	-36.00	0.04	128.90
800		0.10	-45.70	8.96	-110.50	0.02	-45.40	0.05	125.40
900		0.11	-51.80	8.96	-124.60	0.02	-49.30	0.05	114.10
1000		0.12	-55.30	8.96	-138.70	0.02	-53.00	0.06	99.70
1100		0.12	-63.10	8.94	-153.10	0.02	-55.50	0.07	90.60
1200		0.14	-70.60	8.92	-167.40	0.01	-64.10	0.07	79.60
1300		0.14	-76.40	8.84	-178.40	0.02	-74.20	0.08	61.10
1400		0.15	-82.50	8.78	-164.30	0.02	-79.40	0.08	49.10
1500		0.15	-88.90	8.74	-150.20	0.02	-89.90	0.08	37.50
1600		0.16	-93.20	8.68	-136.00	0.02	-93.00	0.07	18.30
1700		0.16	-95.50	8.55	-121.80	0.02	-102.10	0.08	4.30
1800		0.16	-97.40	8.50	-108.40	0.02	-109.50	0.08	-9.30
1900		0.18	-101.20	8.49	-94.80	0.02	-115.90	0.09	-32.40
2000		0.18	-104.00	8.50	-80.40	0.02	-122.90	0.10	-50.70
2100		0.18	-107.50	8.45	-66.50	0.02	-130.50	0.11	-65.20
2200		0.18	-111.10	8.50	-52.40	0.02	-139.30	0.12	-82.40
2300		0.18	-111.30	8.44	-37.90	0.02	-151.10	0.12	-98.30
2400		0.17	-109.80	8.46	-24.10	0.02	-153.10	0.13	-110.70
2500		0.18	-111.90	8.58	-9.50	0.02	-165.10	0.13	-119.10
2600		0.17	-113.40	8.65	-5.60	0.02	-172.40	0.14	-134.70