

AC2546

10 TO 2500 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC2546
Low Noise Figure	<2.7 dB
Medium Output Level	+18.5 dBm
High Performance Thin Film Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	10-2600 MHz	10-2500 MHz	10-2500 MHz
Small Signal Gain (Min.)	11.8 dB	11.0 dB	10.5 dB
Gain Flatness (Max.)	±0.3 dB	±0.5 dB	±0.8 dB
Noise Figure (Max.) 100-2500 MHz	<2.7 dB	3.5 dB	4.0 dB
SWR (Max.) Input/Output	<1.6:1	1.9:1	2.0:1
Power Output (Min.) @ 1dB comp.	+18.5 dBm	+17.5 dBm	+17.0 dBm
Reverse Isolation	18.0 dB	—	—
DC Current (Max.)	56 mA	60 mA	64 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 1200 MHz	AC2546
Second Order Harmonic Intercept Point	+48 dBm
Second Order Two Tone Intercept Point	+42 dBm
Third Order Two Tone Intercept Point	+31.5 dBm

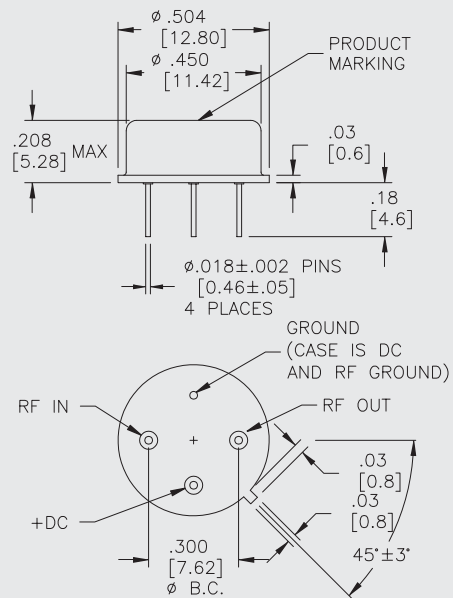
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+17 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 _j c)	+31 °C/Watt
Junction Temperature Rise Above Case (T _j c)	+28.4 °C

¹ Thermal resistance is based on total power dissipation.

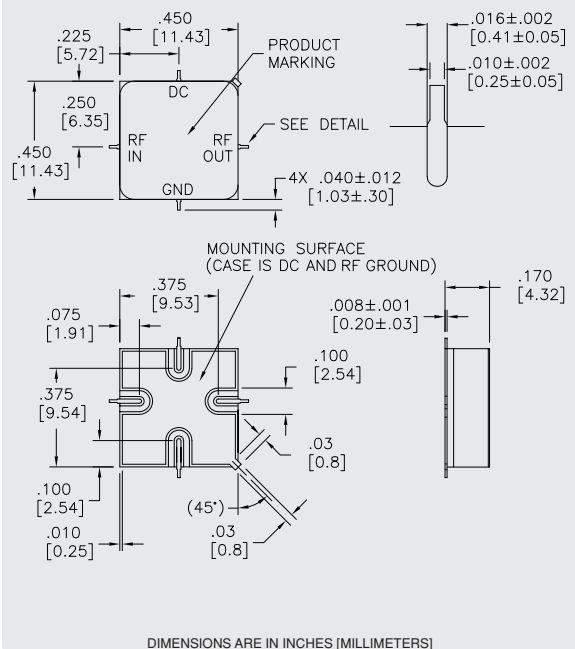
AC2546

TO-8 Package for Amplifiers



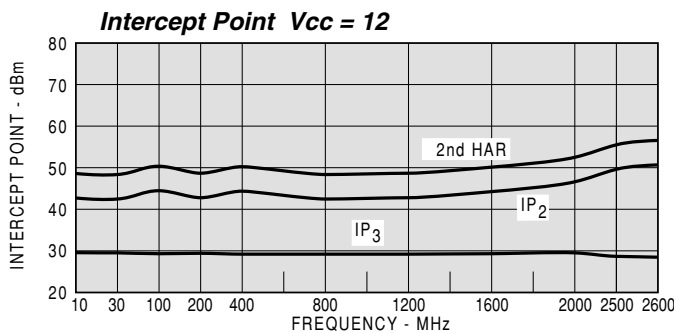
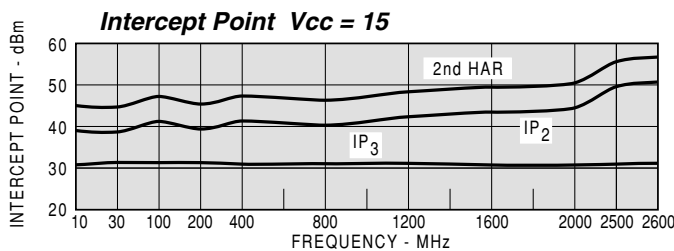
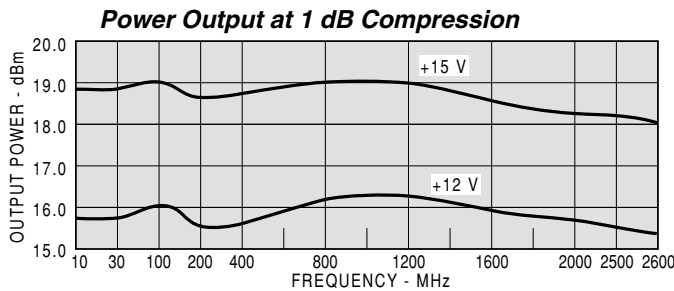
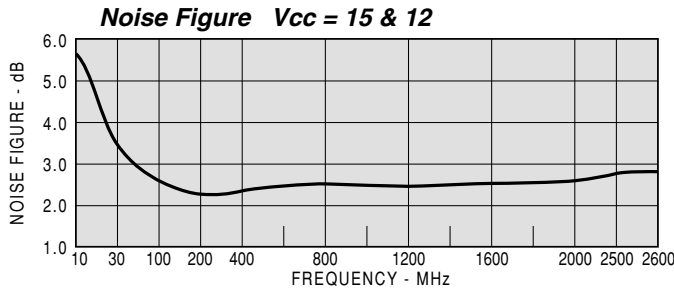
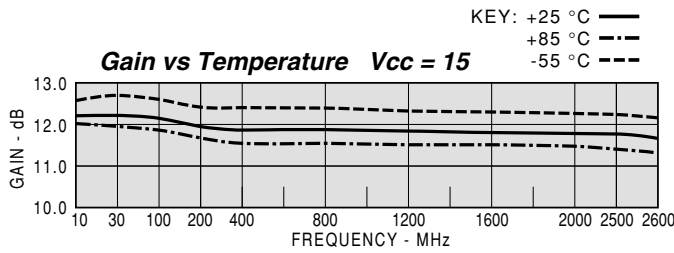
AS2546

SMTO-8 Package for Amplifiers



TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AC2546			Vcc= +15V			Icc= 58.45	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
10	1.68	1.33	12.21	-158		-19.2	
30	1.48	1.24	12.23	-176		-19.4	
50	1.46	1.24	12.21	179	0.48	-19.3	
100	1.46	1.23	12.16	172	0.40	-19.3	
200	1.50	1.18	11.95	162	0.26	-19.2	
400	1.48	1.15	11.90	144	0.25	-19.1	
600	1.50	1.13	11.91	127	0.24	-19.1	
800	1.45	1.16	11.88	109	0.25	-19.0	
1000	1.51	1.10	11.86	91	0.24	-19.0	
1200	1.47	1.07	11.85	73	0.26	-18.9	
1400	1.49	1.04	11.80	55	0.25	-18.8	
1600	1.49	1.04	11.83	37	0.25	-18.6	
1800	1.46	1.06	11.84	18	0.25	-18.6	
2000	1.38	1.07	11.88	-1	0.26	-18.4	
2200	1.30	1.08	11.91	-21	0.29	-18.2	
2400	1.25	1.11	11.83	-41	0.29	-18.1	
2500	1.22	1.19	11.84	-51	0.30	-17.9	
2600	1.21	1.21	11.75	-62	0.29	-17.9	

Model: AC2546			LINEAR S-PARAMETERS						Icc= 58.45	
			Vcc= +15V							
FREQ	S11		S21		S12		S22		MAG	ANG
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG		
10	0.25	-38.1	4.08	-158.3	0.109	17.9	0.14	159.4		
30	0.19	-14.6	4.09	-176.2	0.107	3.9	0.11	171.2		
50	0.19	-9.30	4.08	179.2	0.108	1.1	0.11	168.9		
100	0.19	-5.40	4.05	172.0	0.108	-2.0	0.10	161.3		
200	0.20	-6.50	3.96	161.8	0.110	-7.8	0.08	155.8		
400	0.19	-13.6	3.94	144.4	0.111	-18.8	0.07	148.0		
600	0.20	-20.0	3.94	126.6	0.111	-28.8	0.06	142.6		
800	0.19	-26.7	3.92	108.7	0.112	-38.7	0.07	124.8		
1000	0.20	-35.5	3.92	91.0	0.113	-49.2	0.05	142.9		
1200	0.19	-44.0	3.91	72.9	0.113	-59.9	0.03	130.4		
1400	0.20	-54.1	3.89	54.8	0.115	-70.6	0.02	102.3		
1600	0.20	-63.8	3.90	36.7	0.117	-82.6	0.02	141.7		
1800	0.19	-68.6	3.91	18.3	0.118	-94.4	0.03	169.3		
2000	0.16	-81.6	3.93	-1.0	0.120	-108.1	0.03	-133.6		
2200	0.13	-85.7	3.94	-20.6	0.123	-120.1	0.04	-76.6		
2400	0.11	-74.3	3.91	-40.8	0.125	-133.0	0.05	-100.2		
2500	0.10	-53.7	3.91	-51.2	0.128	0.140	0.08	-85.8		
2600	0.10	-37.8	3.87	-61.8	0.128	-147.5	0.09	-76.8		
2700	0.12	-31.7	3.84	-72.6	.130	-155.3	0.11	-92.2		

Model: AC2546			Vcc= +12V			Icc= 53.10	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
10	1.69	1.41	12.05	-159		-19.7	
30	1.50	1.36	12.03	-176		-19.8	
50	1.49	1.36	12.01	179	0.52	-19.9	
100	1.49	1.35	11.96	172	0.40	-19.8	
200	1.52	1.29	11.75	162	0.25	-19.5	
400	1.50	1.25	11.70	144	0.25	-19.4	
600	1.51	1.24	11.72	126	0.25	-19.5	
800	1.46	1.27	11.71	108	0.24	-19.3	
1000	1.51	1.20	11.68	90	0.24	-19.1	
1200	1.45	1.17	11.69	72	0.26	-18.9	
1400	1.48	1.15	11.66	54	0.25	-18.6	
1600	1.47	1.13	11.66	36	0.25	-18.4	
1800	1.43	1.12	11.72	17	0.27	-18.2	
2000	1.34	1.06	11.79	-2	0.27	-17.9	
2200	1.24	1.12	11.82	-22	0.28	-17.5	
2400	1.18	1.13	11.74	-43	0.28	-17.3	
2500	1.17	1.24	11.72	-54	0.31	-17.1	
2600	1.20	1.31	11.63	-65	0.31	-17.0	

Model: AC2546			LINEAR S-PARAMETERS						Icc= 53.10	
			Vcc= +12V							
FREQ	S11		S21		S12		S22		MAG	ANG
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG		
10	0.26	-357	4.00	-159.0	0.104	17.1	0.17	172.9		
30	0.20	-137	4.00	-176.4	0.102	38	0.15	176.6		
50	0.20	-90	3.98	179.0	0.101	11	0.15	173.0		
100	0.20	-59	3.96	171.8	0.103	-18	0.15	165.3		
200	0.21	-76	3.87	161.8	0.106	-67	0.13	159.6		
400	0.20	-154	3.85	144.2	0.107	-169	0.11	150.6		
600	0.20	-225	3.85	126.2	0.106	-262	0.11	142.3		
800	0.19	-297	3.85	108.5	0.109	-355	0.12	126.6		
1000	0.20	-385	3.84	90.5	0.111	-453	0.09	131.6		
1200	0.18	-474	3.84	72.2	0.113	-555	0.08	117.1		
1400	0.19	-576	3.83	54.1	0.117	-662	0.07	97.8		
1600	0.19	-675	3.83	35.8	0.120	-777	0.06	99.0		
1800	0.18	-726	3.86	17.1	0.123	-895	0.06	101.2		
2000	0.15	-862	3.89	-2.3	0.127	-1028	0.03	71.0		
2200	0.11	-916	3.90	-22.0	0.133	-1160	0.06	5.70		
2400	0.08	-722	3.86	-43.2	0.136	-1292	0.06	-20.4		
2500	0.08	-37.3	3.85	-53.9	0.140	-137.4	0.11	-40.6		
2600	0.09	-161	3.82	-64.9	0.141	-1447	0.13	-41.5		