

AC580

10 TO 500 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values

Ultra Low Noise Figure	AC580 2.2 dB
High Gain	22.8 dB
High Performance Thin Film Standard Size TO-8	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	5-500 MHz	10-500 MHz	10-500 MHz
Small Signal Gain (Min.)	22.8 dB	21.8 dB	21.3 dB
Gain Flatness (Max.)	< ±0.5 dB	±0.7 dB	±0.8 dB
Noise Figure (Max.)	2.2 dB	2.7 dB	3.2 dB
SWR (Max.) Input/Output	< 1.6:1	2.0:1	2.0:1
Power Output (Min.) @ 1dB comp.	+9.7 dBm	+7.5 [^] dBm	+7.0 [^] dBm
DC Current (Max.)	17 mA	20 mA	22 mA

* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.
[^] 0.5 dBm less below 20 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C

Second Order Harmonic Intercept Point	AC580 +33 dBm
Second Order Two Tone Intercept Point	+27 dBm
Third Order Two Tone Intercept Point	+22 dBm

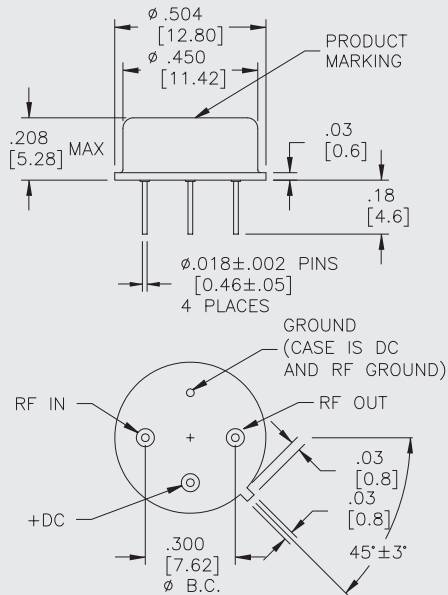
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+19 Volts
Maximum Continuous RF Input Power	+10 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)	+36 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+10.3 °C

¹Thermal resistance is based on total power dissipation.

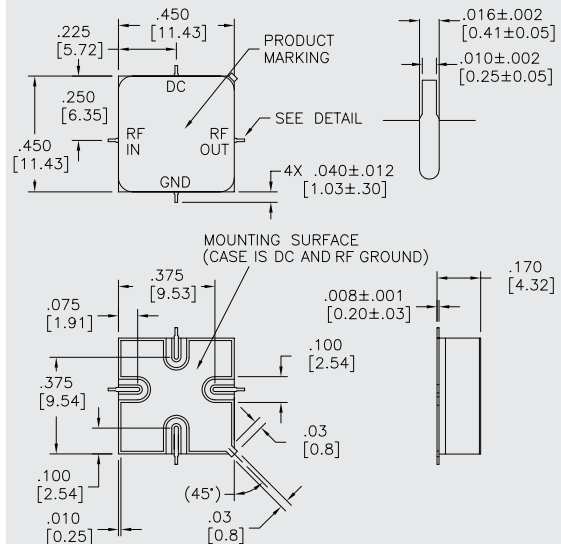
AC580

TO-8 Package for Amplifiers



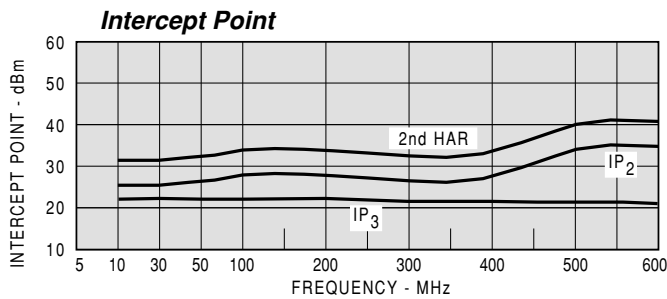
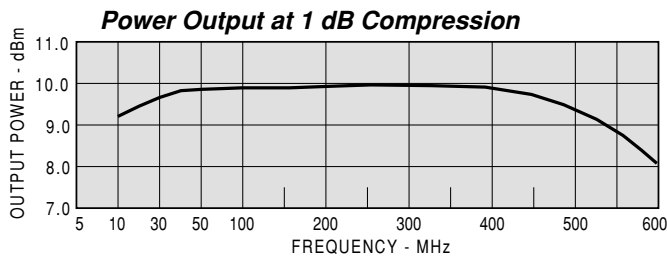
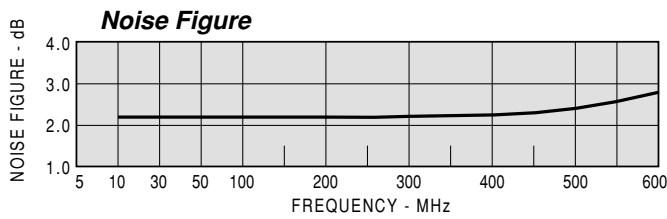
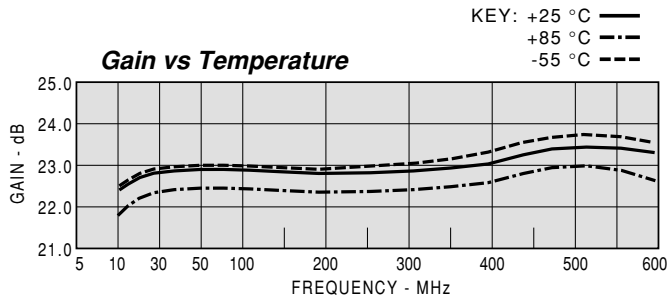
AS580

SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

Model: AC580				Vcc=+15V	Icc=17.58
FREQ	SWR	SWR	GAIN	GROUP DELAY	REV/ISO
MHZ	IN	OUT	DB	NSEC	DB
10	1.86	1.57	22.3		-29.7
20	1.71	1.34	22.7		-29.1
50	1.61	1.22	22.9	1.243	-28.8
100	1.64	1.17	22.8	0.862	-28.9
200	1.63	1.16	22.6	0.744	-29.3
300	1.65	1.20	22.7	0.729	-29.4
400	1.74	1.25	23.1	0.790	-29.6
500	1.84	1.50	23.5	0.909	-30.0
600	1.69	2.36	23.3	1.064	-31.6

Model: AC580				LINEAR S-PARAMETERS				Vcc=+15V	Icc=17.58
FREQ.	S11		S21		S12		S22		
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
10	0.30	-23.4	13.05	-168.5	0.033	11.0	0.22	99.5	
20	0.26	-15.6	13.69	-177.4	0.035	4.0	0.14	74.1	
50	0.23	-7.4	13.91	169.2	0.036	-6.0	0.10	34.3	
100	0.24	-4.9	13.80	153.6	0.036	-17.0	0.08	13.2	
200	0.24	-7.0	13.44	126.9	0.034	-34.0	0.07	13.0	
300	0.25	-8.6	13.71	100.6	0.034	-52.0	0.09	-9.2	
400	0.27	-15.5	14.33	72.3	0.033	-73.0	0.11	-61.5	
500	0.30	-35.8	15.03	39.6	0.031	-101.0	0.20	-127.7	
600	0.26	-81.6	14.66	1.2	0.026	-133.0	0.40	179.4	
700	0.23	-158.8	12.16	-40.7	0.018	-171.0	0.64	136.0	

Model: AC580				Vcc=+12V	Icc=14.11
FREQ	SWR	SWR	GAIN	GROUP DELAY	REV/ISO
MHZ	IN	OUT	DB	NSEC	DB
10	1.97	1.56	21.8		-29.4
20	1.79	1.36	22.3		-28.9
50	1.72	1.26	22.4	1.246	-28.6
100	1.74	1.21	22.3	0.872	-28.7
200	1.71	1.17	22.1	0.750	-29.1
300	1.71	1.21	22.3	0.741	-29.3
400	1.72	1.29	22.7	0.806	-29.4
500	1.78	1.61	23.1	0.938	-30.2
600	1.66	2.60	22.8	1.090	-31.9

Model: AC580				LINEAR S-PARAMETERS				Vcc=+12V	Icc=14.11
FREQ.	S11		S21		S12		S22		
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
10	0.33	-20.2	12.34	-168.9	0.034	11.0	0.22	93.2	
20	0.28	-14.2	12.97	-177.5	0.036	4.0	0.15	64.7	
50	0.27	-8.1	13.20	169.0	0.037	-6.0	0.12	23.6	
100	0.27	-7.5	13.08	153.3	0.037	-18.0	0.09	1.1	
200	0.26	-12.9	12.77	126.4	0.035	-35.0	0.08	-4.8	
300	0.26	-17.4	13.05	99.7	0.034	-54.0	0.09	-25.7	
400	0.27	-26.1	13.69	70.6	0.034	-76.0	0.12	-76.0	
500	0.28	-48.4	14.33	36.9	0.031	-104.0	0.23	-134.9	
600	0.25	-99.9	13.80	-2.3	0.025	-138.0	0.44	175.5	
700	0.27	-175.6	11.21	-44.2	0.016	-178.0	0.67	133.0	