

AC2578

10 TO 2500 MHz TO-8 CASCADABLE AMPLIFIER

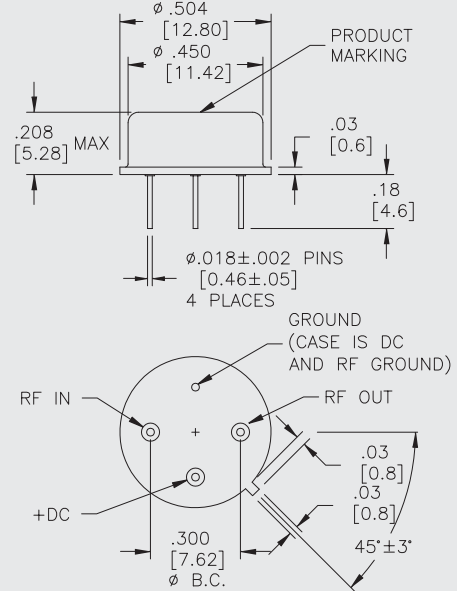
Typical Values

High Output Power	+21.0 dBm
High Third Order I.P.	+34.0 dBm
Low Noise Figure	3.8 dB
High Performance Thin Film Standard Size TO-8 Package	

AC2578

AC2578

TO-8 Package for Amplifiers



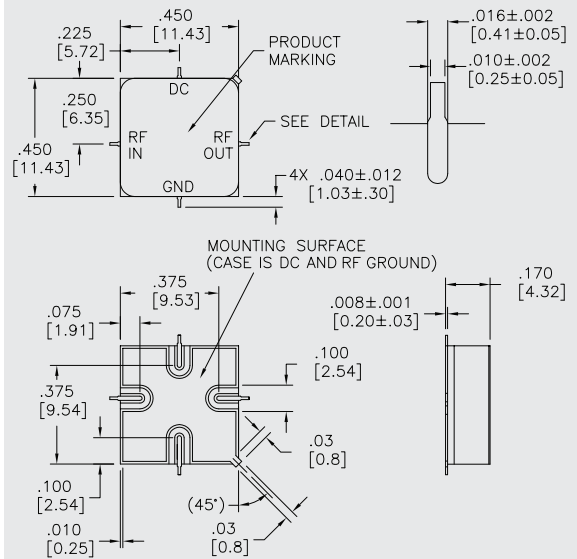
SPECIFICATIONS*

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.)	9.0 dB	8.5 dB	8.0 dB
Gain Flatness (Max.)	±0.20 dB	±0.5 dB	±0.6 dB
Noise Figure (Max.) 30-2500 MHz	3.8 dB	4.5 dB	5.0 dB
SWR (Max.)	Input < 1.7:1 Output < 1.7:1	2.0:1^ 1.7:1^	2.0:1^ 1.8:1^
Power Output (Min.) @ 1dB comp.	+21.0 dBm	+20.0† dBm	+19.5† dBm
Reverse Isolation	18.0 dB	—	—
DC Current (Max.)	100.0 mA	108.0 mA	112.0 mA

* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.
^ 0.2 higher below 20 MHz. † 0.5 dB less Above 2400 MHz.

AS2578

SMT0-8 Package for Amplifiers



INTERMODULATION PERFORMANCE

Typical @ 25 °C

AC2578

Second Order Harmonic Intercept Point	+54 dBm
Second Order Two Tone Intercept Point	+48 dBm
Third Order Two Tone Intercept Point	+34 dBm

ABSOLUTE MAXIMUM RATINGS

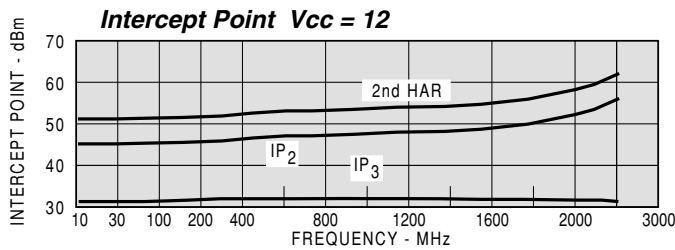
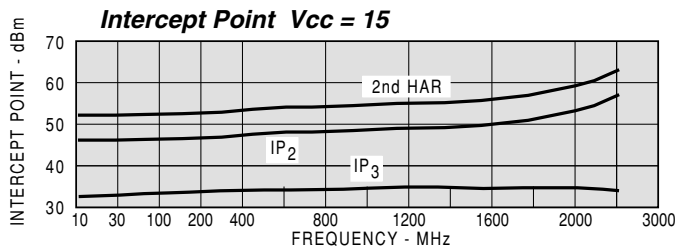
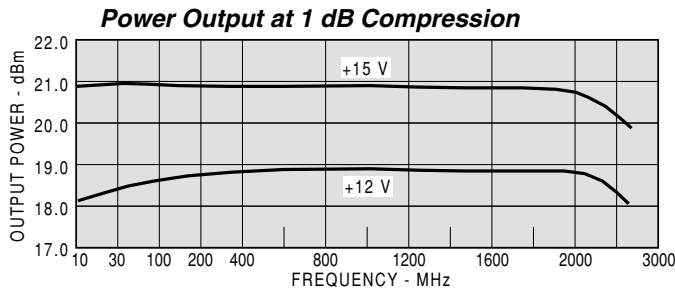
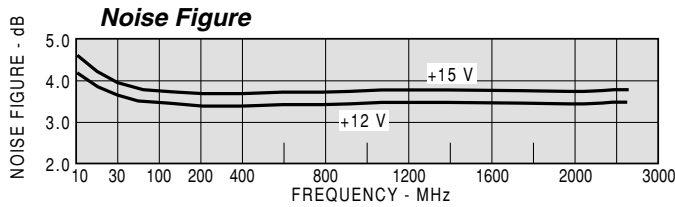
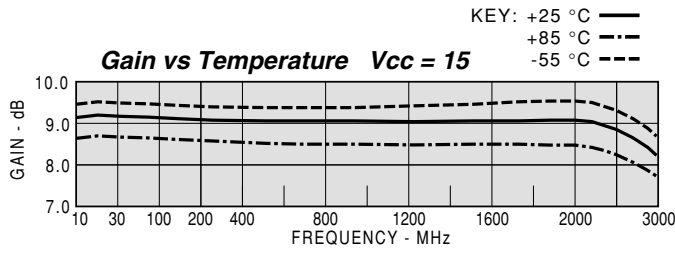
Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+17 dBm
Maximum Short Term Input Power (1 Minute Max.)	100 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Burn-in Temperature	+100 °C
Thermal Resistance ¹ (θjc)	+14 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+22.9 °C

¹Thermal resistance is based on total power dissipation.

DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



MODEL: AC2578 Vcc = +15V Icc = 103.31 mA

FREQ. MHz	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
10	1.74	1.19	9.5		-17.8
50	1.59	1.14	9.7		-17.7
100	1.62	1.14	9.6	0.404	-17.7
300	1.66	1.13	9.2	0.289	-17.9
500	1.64	1.12	9.2	0.276	-17.7
700	1.61	1.12	9.3	0.291	-17.8
900	1.63	1.10	9.2	0.284	-18.3
1100	1.68	1.11	9.2	0.296	-18.5
1300	1.75	1.14	9.1	0.292	-17.9
1500	1.70	1.15	9.2	0.290	-18.7
1700	1.62	1.21	9.2	0.302	-18.3
1900	1.51	1.25	9.2	0.317	-18.2
2100	1.41	1.28	9.4	0.325	-18.6
2300	1.24	1.27	9.4	0.353	-18.5
2500	1.26	1.22	9.2	0.380	-18.2
2700	1.86	1.12	8.9	0.432	-18.6

MODEL: AC2578 Vcc = +15V Icc = 103.31 mA

LINEAR S-PARAMETERS

FREQ. MHz	S11			S21			S12			S22		
	MAG	ANG	ANG	MAG	ANG	ANG	MAG	ANG	ANG	MAG	ANG	
10	0.27	-23.4	2.99	-166.7	0.129	6	0.09	146.9				
50	0.23	-11.2	3.04	176.9	0.131	-3	0.07	151.3				
100	0.24	-14.9	3.03	169.6	0.130	-5	0.07	148.7				
300	0.25	-41.9	2.89	148.8	0.128	-17	0.06	95.3				
500	0.24	-67.0	2.89	128.9	0.130	-30	0.06	63.4				
700	0.23	-93.2	2.91	108.0	0.128	-43	0.06	33.3				
900	0.24	-121.9	2.89	87.5	0.122	-54	0.05	-1.9				
1100	0.25	-141.5	2.88	66.3	0.119	-68	0.05	-40.1				
1300	0.27	-161.0	2.86	45.3	0.114	-82	0.07	-80.4				
1500	0.26	180.0	2.87	24.2	0.116	-92	0.07	-111.3				
1700	0.24	160.6	2.87	2.7	0.122	-109	0.10	-151.0				
1900	0.20	134.3	2.89	-20.2	0.122	-119	0.11	-173.4				
2100	0.17	106.1	2.94	-43.4	0.118	-131	0.12	161.0				
2300	0.11	67.6	2.94	-69.0	0.119	-154	0.12	141.5				
2500	0.11	-44.7	2.89	-96.5	0.123	-170	0.10	125.9				
2700	0.30	-101.7	2.79	-127.5	0.117	174	0.05	119.9				

MODEL: AC2578 Vcc = +12V Icc = 89.34 mA

FREQ. MHz	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
10	1.72	1.22	9.6		-18.1
50	1.58	1.18	9.7		-18.0
100	1.62	1.19	9.7	0.404	-17.7
300	1.64	1.15	9.2	0.286	-17.8
500	1.63	1.13	9.3	0.273	-17.8
700	1.60	1.13	9.3	0.291	-18.1
900	1.61	1.09	9.3	0.284	-18.0
1100	1.68	1.08	9.3	0.293	-18.3
1300	1.75	1.09	9.2	0.292	-18.5
1500	1.70	1.09	9.2	0.289	-18.9
1700	1.64	1.13	9.2	0.297	-18.3
1900	1.52	1.18	9.3	0.317	-18.2
2100	1.48	1.22	9.5	0.323	-18.3
2300	1.30	1.20	9.5	0.354	-17.7
2500	1.22	1.14	9.3	0.383	-17.6
2700	1.79	1.03	9.1	0.435	-17.8