TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/10

AC557 0.3 TO 500 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC557
Low Noise Figure	4.0 dB
High Third Order I.P.	+28.5 dBm
Wide Power Supply Range	+8 to +15 Volts
High Performance Thin Film	
Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed 0 to 50 °C	Guaranteed -55 to +85 °C
Frequency (Min.)	0.3-600 MHz	0.3-500 MHz	0.3-500 MHz
Small Signal Gain (Min.)	15.0 dB	14.0 dB	13.5 dB
Gain Flatness (Max.)	< ±0.3 dB	±0.5 dB	±0.8 dB
Noise Figure (Max.)	4.0 dB	5.0 dB	5.5 dB
SWR (Max.) Input/Output	< 1.3:1	1.8:1	2.0:1
Power Output (Min.) @ 1dB comp.	+14.7 dBm	+13.5 dBm	+13.0 dBm
Reverse Isolation	20.0 dB	—	—
DC Current (Max.)	44 mA	47 mA	50.0 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C	AC557
Second Order Harmonic Intercept Point	+42 dBm
Second Order Two Tone Intercept Point	+36 dBm
Third Order Two Tone Intercept Point	+28.5 dBm

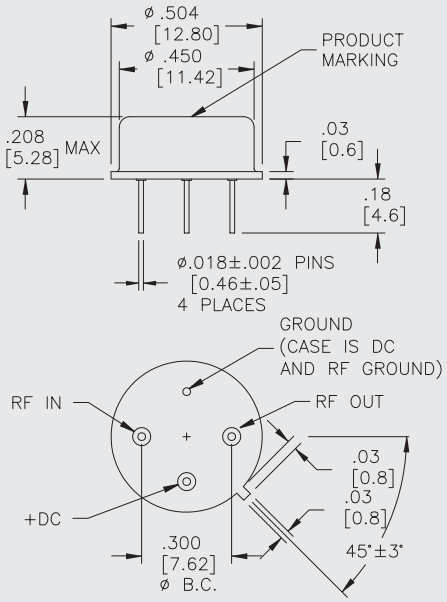
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+13 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] (θjc)	+46 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+32.2 °C

[1] Thermal resistance is based on total power dissipation.

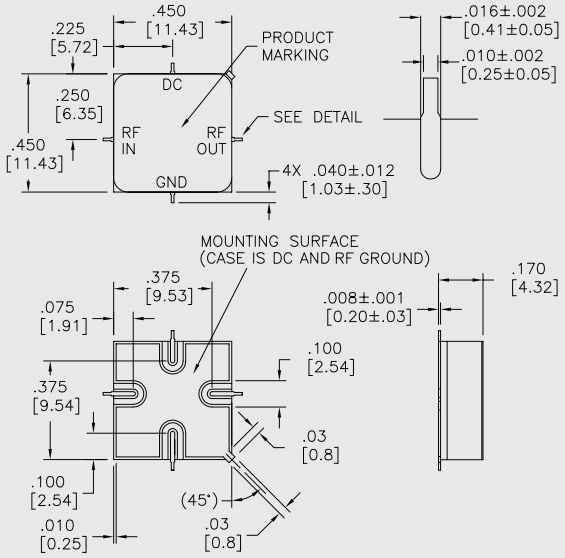
AC557

TO-8 Package for Amplifiers



AS557

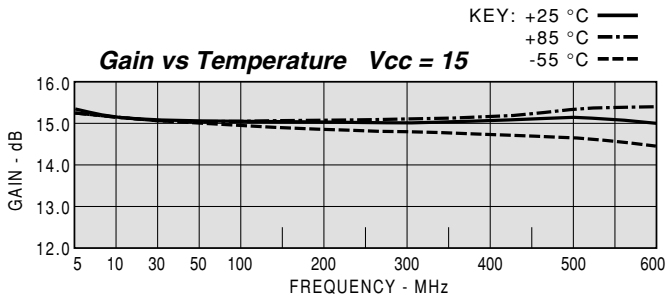
SMTO-8 Package for Amplifiers

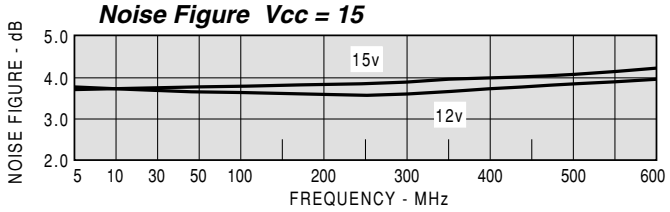


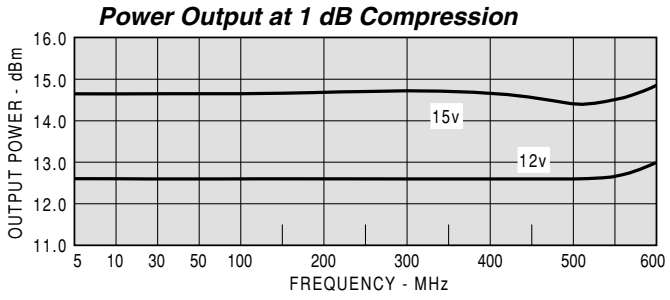
If DC is present on RF input/output, this model requires additional external blocking capacitors.

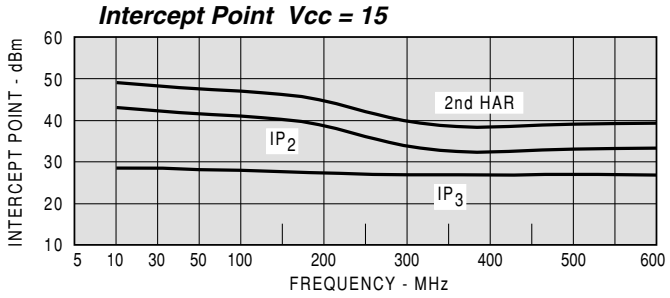
DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE









TYPICAL AUTOMATIC TEST DATA

Model: AC557 Vcc=+15V Icc=43.56

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
0.3	1.35	1.39	15.1		-20.5
1	1.19	1.20	15.0		-20.8
10	1.18	1.17	15.0		-20.9
50	1.19	1.17	14.9	0.686	-21.0
100	1.22	1.17	14.9	0.652	-20.9
200	1.29	1.20	14.9	0.655	-20.9
300	1.34	1.28	14.9	0.665	-20.7
400	1.36	1.41	15.0	0.678	-20.4
500	1.30	1.64	15.0	0.717	-20.1
600	1.26	1.98	15.1	0.768	-19.6

LINEAR S-PARAMETERS

Model: AC557 Vcc=+15V Icc=43.56

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0	0.15	-55.1	5.68	-168.0	0.094	-10.0	0.16	-110.2
1	0.09	-22.6	5.65	-176.9	0.091	-4.0	0.09	-145.1
10	0.08	-7.4	5.61	177.9	0.090	-2.0	0.08	-175.5
50	0.09	-28.4	5.59	168.1	0.089	-5.0	0.08	-175.8
100	0.10	-54.9	5.58	156.3	0.090	-10.0	0.08	-171.5
200	0.12	-95.2	5.56	132.8	0.090	-20.0	0.09	-162.5
300	0.15	-128.7	5.58	108.9	0.093	-30.0	0.12	-157.7
400	0.15	-160.1	5.60	84.5	0.096	-41.0	0.17	-160.0
500	0.13	160.2	5.65	58.7	0.099	-53.0	0.24	-169.2
600	0.11	95.3	5.68	31.0	0.105	-67.0	0.33	174.9
700	0.18	19.6	5.52	0.5	0.108	-84.0	0.42	153.7

Model: AC557 Vcc= +12V Icc=34.78

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
0.3	1.37	1.38	15.0		-20.4
1	1.21	1.18	14.9		-20.7
10	1.20	1.16	14.9		-20.9
50	1.21	1.16	14.8	0.689	-20.9
100	1.24	1.17	14.8	0.657	-20.8
200	1.32	1.22	14.8	0.662	-20.7
300	1.38	1.33	14.8	0.672	-20.5
400	1.41	1.50	14.8	0.688	-20.1
500	1.36	1.76	14.9	0.726	-19.6
600	1.33	2.16	14.8	0.783	-19.1

LINEAR S-PARAMETERS

Model: AC557 Vcc=+12V Icc=34.78

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0	0.15	-52.0	5.59	-167.9	0.095	-9.0	0.16	-106.7
1	0.10	-20.9	5.57	-176.8	0.092	-4.0	0.08	-141.2
10	0.09	-7.8	5.53	178.0	0.090	-1.0	0.07	-174.2
50	0.10	-28.3	5.52	168.1	0.090	-5.0	0.07	-171.8
100	0.11	-55.1	5.50	156.0	0.091	-10.0	0.08	-164.5
200	0.14	-95.8	5.47	132.4	0.092	-19.0	0.10	-155.2
300	0.16	-130.5	5.50	108.1	0.095	-29.0	0.14	-153.7
400	0.17	-163.6	5.49	83.4	0.099	-40.0	0.20	-159.9
500	0.15	155.6	5.53	57.3	0.104	-52.0	0.28	-171.1
600	0.14	94.3	5.53	29.2	0.111	-67.0	0.37	171.8
700	0.21	22.3	5.33	-1.9	0.115	-84.0	0.46	150.1