

AC1582

5 TO 1500 MHz TO-8 CASCADABLE AMPLIFIER

| Typical Values | AC1582 |
|--|-----------|
| Medium Gain | 12.5 dB |
| Medium Output Power | +11.0 dBm |
| High Performance Thin Film Standard Size TO-8 Package | |

SPECIFICATIONS*

| Parameter | Typical | Guaranteed | | |
|------------------------------------|---------------|------------|---------------|-----------|
| | | 0 to 50 °C | -55 to +85 °C | |
| Frequency (Min.) | 5-1600 MHz | 5-1500 MHz | 5-1500 MHz | |
| Small Signal Gain (Min.) | 12.5 dB | 11.8 dB | 11.0 dB | |
| Gain Flatness (Max.) | ±0.2 dB | ±0.5 dB | ±0.7 dB | |
| Noise Figure (Max.) | 4.0 dB | 5.0 dB | 5.5 dB | |
| SWR (Max.) | Input/Output | 1.7:1 | 2.0:1 | |
| Power Output (Min.) @ 1dB comp. | 10-1000 MHz | +11.0 dBm | +10.5 dBm | +10.0 dBm |
| | 1000-1300 MHz | +10.5 dBm | +10.0 dBm | +9.0 dBm |
| | 1300-1500 MHz | +9.5 dBm | +9.0 dBm | +7.5 dBm |
| Reverse Isolation | 17.0 dB | — | — | |
| DC Current (Max.) | 31 mA | 32 mA | 35 mA | |

* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.

INTERMODULATION PERFORMANCE

| Typical @ 25 °C; 300 MHz | AC1582 |
|---|---------|
| Second Order Harmonic Intercept Point | +40 dBm |
| Second Order Two Tone Intercept Point | +34 dBm |
| Third Order Two Tone Intercept Point | +24 dBm |

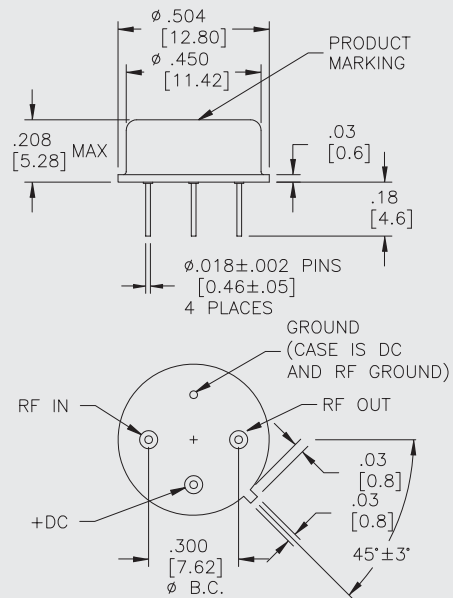
ABSOLUTE MAXIMUM RATINGS

| | |
|---|-----------------|
| Storage Temperature | -62° to +125 °C |
| Maximum Case Temperature | +125 °C |
| Maximum DC Voltage | +10 Volts |
| Maximum Continuous RF Input Power | +13 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 (θ _{jc}) | 96.0 °C/Watt |
| Junction Temperature Rise Above Case (T _{jc}) | 15.3 °C |

¹ Thermal resistance is based on total power dissipation.

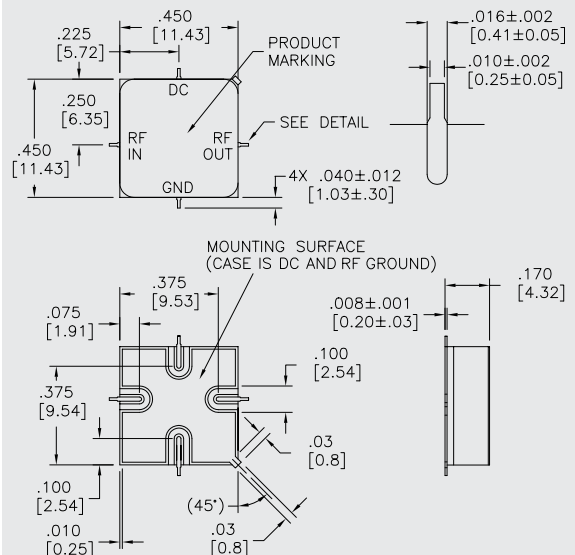
AC1582

TO-8 Package for Amplifiers



AS1582

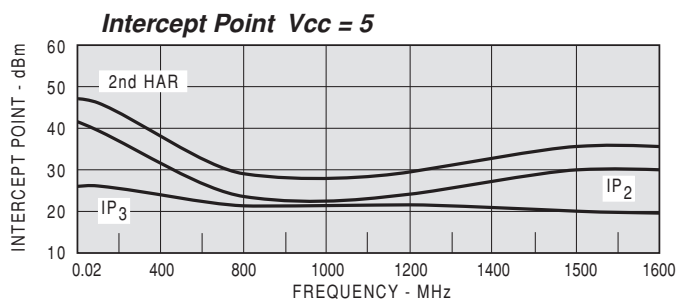
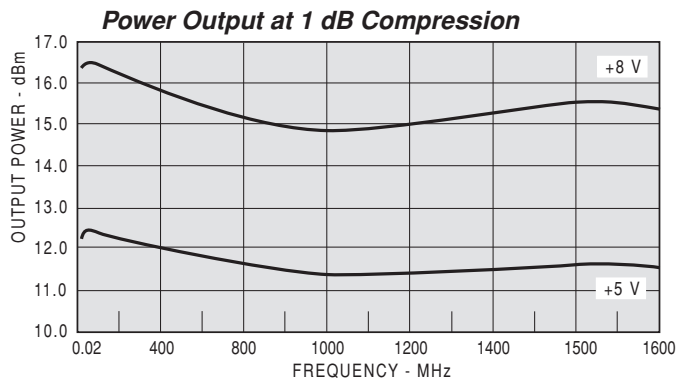
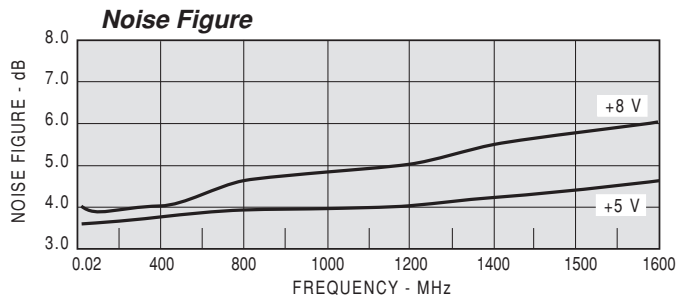
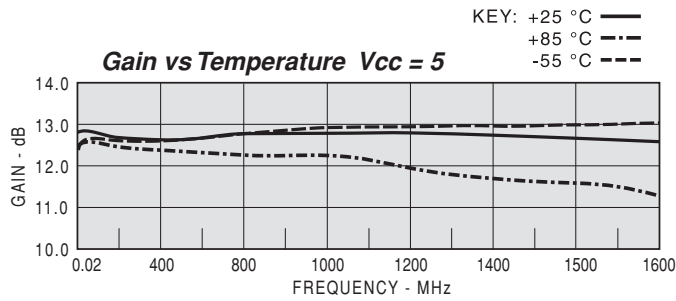
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AC1582 Vcc=+5V Icc=31.18

| FREQ | SWR IN | SWR OUT | GAIN DB | PHASE DEG | DELAY NSEC | REV/ISO DB |
|------|--------|---------|---------|-----------|------------|------------|
| 2 | 1.67 | 1.61 | 12.62 | -157 | 14.00 | -18.0 |
| 5 | 1.40 | 1.39 | 12.63 | -172 | 14.00 | -17.9 |
| 10 | 1.37 | 1.36 | 12.64 | -177 | 2.70 | -17.8 |
| 50 | 1.38 | 1.32 | 12.73 | 174 | 0.52 | -17.7 |
| 100 | 1.37 | 1.31 | 12.69 | 166 | 0.43 | -17.7 |
| 200 | 1.36 | 1.31 | 12.60 | 151 | 0.40 | -17.8 |
| 400 | 1.34 | 1.29 | 12.55 | 124 | 0.38 | -17.9 |
| 600 | 1.29 | 1.24 | 12.60 | 95 | 0.40 | -17.7 |
| 800 | 1.28 | 1.18 | 12.66 | 66 | 0.41 | -17.7 |
| 1000 | 1.36 | 1.19 | 12.67 | 36 | 0.42 | -17.6 |
| 1200 | 1.47 | 1.33 | 12.65 | 4 | 0.44 | -17.6 |
| 1400 | 1.47 | 1.50 | 12.58 | -28 | 0.46 | -17.5 |
| 1500 | 1.38 | 1.55 | 12.53 | -46 | 0.48 | -17.3 |
| 1600 | 1.27 | 1.56 | 12.50 | -64 | 0.51 | -17.1 |

Model: AC1582 Vcc=+5V Icc=31.18

LINEAR S-PARAMETERS

| FREQ. MHz | S11 | | S21 | | S12 | | S22 | |
|-----------|------|--------|------|--------|------|--------|------|--------|
| | MAG | ANG | MAG | ANG | MAG | ANG | MAG | ANG |
| 2 | 0.25 | -118.1 | 4.27 | -157.0 | 0.13 | 25.0 | 0.23 | 160.2 |
| 5 | 0.17 | -149.7 | 4.28 | -172.0 | 0.13 | 9.3 | 0.16 | 168.6 |
| 10 | 0.16 | -162.8 | 4.29 | -176.9 | 0.13 | 4.2 | 0.15 | 170.2 |
| 50 | 0.16 | -176.5 | 4.33 | 173.6 | 0.13 | -2.9 | 0.14 | 166.6 |
| 100 | 0.16 | -179.1 | 4.31 | 165.8 | 0.13 | -7.9 | 0.14 | 158.1 |
| 200 | 0.15 | -179.2 | 4.26 | 151.4 | 0.13 | -15.9 | 0.14 | 138.6 |
| 400 | 0.14 | -179.5 | 4.24 | 123.6 | 0.13 | -31.6 | 0.13 | 98.0 |
| 600 | 0.13 | -174.0 | 4.26 | 95.2 | 0.13 | -48.0 | 0.11 | 53.8 |
| 800 | 0.12 | -157.3 | 4.30 | 65.9 | 0.13 | -66.0 | 0.08 | -6.1 |
| 1000 | 0.15 | -144.3 | 4.30 | 35.8 | 0.13 | -84.6 | 0.09 | -85.3 |
| 1200 | 0.19 | -145.1 | 4.29 | 4.4 | 0.13 | -103.9 | 0.14 | -148.5 |
| 1400 | 0.19 | -152.3 | 4.25 | -28.4 | 0.13 | -123.4 | 0.20 | 164.3 |
| 1500 | 0.16 | -151.7 | 4.23 | -45.6 | 0.14 | -134.6 | 0.22 | 141.0 |
| 1600 | 0.12 | -136.6 | 4.22 | -64.0 | 0.14 | -146.2 | 0.22 | 116.2 |