

Cascadable Amplifier 10 to 500MHz

Rev. V6

Features

- HIGH POWER OUTPUT: +21 dBm (TYP.)
- HIGH THIRD ORDER IP3: +33 dBm (TYP.)
- HIGH EFFICIENCY: 52 mA (TYP.) @ +15 Vdc

Description

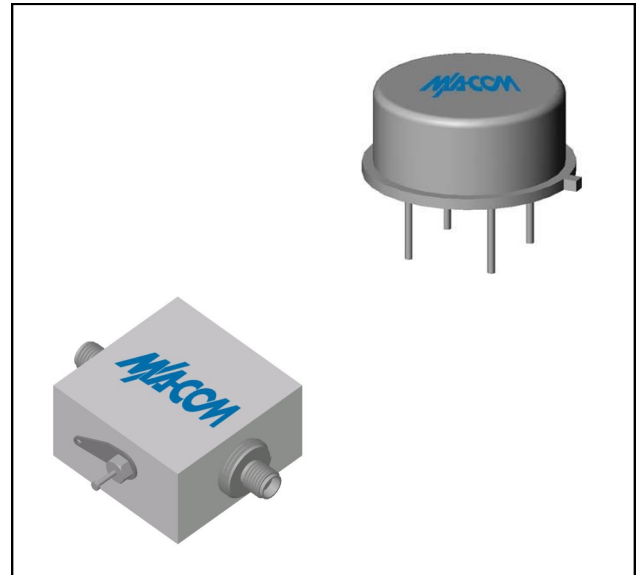
M/A-COM's AM-147 is a coupler feedback amplifier with high intercept and compression points. The use of coupler feedback minimizes noise figure and current in a high intercept amplifier. This amplifier is packaged in a TO-8 package. Due to the internal power dissipation the thermal rise minimized. The ground plane on the PC board should be configured to remove heat from under the package. AM-147 is ideally suited for use where a high intercept, high reliability amplifier is required.

Ordering Information

| Part Number | Package |
|----------------|---------------|
| AM-147-PIN | TO-8 |
| AMC-147- SMA * | Connectorized |

* SMA Connectorized part is not RoHs compliant.

Product Image



Electrical Specifications: $Z_0 = 50\Omega$, $V_{CC} = +15 V_{DC}$

| Parameter | Units | Typical | Guaranteed | |
|---------------------------------|-------|---------------|---------------|----------------|
| | | 25°C | 0° to 50°C | -54° to +85°C* |
| Frequency | MHz | 3-500 | 5-500 | 5-500 |
| Small Signal Gain (min) | dB | 17.0 | 16.0 | 15.5 |
| Gain Flatness (max) | dB | ±0.4 | ±0.8 | ±1.0 |
| Reverse Isolation | dB | 20.0 | 16.0 | |
| Noise Figure (max) | dB | 3.4 | 4.2 | 4.7 |
| Power Output @ 1 dB comp. (min) | dBm | 20.0 | 19.0 | 18.5 |
| IP3 | dBm | +31 | | |
| IP2 | dBm | +40 | | |
| Second Order Harmonic IP | dBm | +46 | | |
| VSWR Input / Output (max) | | 1.7:1 / 1.7:1 | 1.9:1 / 1.9:1 | 2.0:1 / 2.0:1 |
| DC Current @ 15 Volts (max) | mA | 52 | 56 | 58 |

Absolute Maximum Ratings

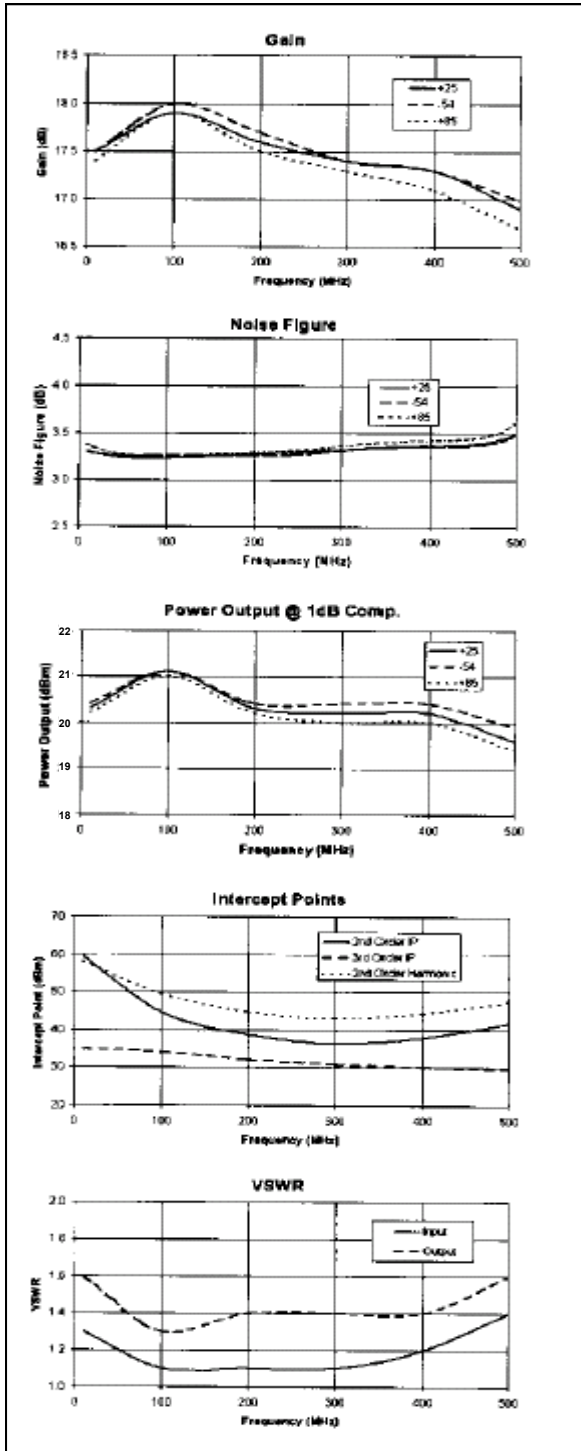
| Parameter | Absolute Maximum |
|--|------------------|
| Storage Temperature | -62°C to +150°C |
| Case Temperature | 125°C |
| DC Voltage | +17 V |
| Continuous Input Power | +13 dBm |
| Short Term Input power (1 minute max.) | 100 mW |
| Peak Power (3 µsec max.) | 0.5 W |
| "S" Series Burn-In Temperature (case) | 125°C |

Thermal Data: $V_{CC} = +15 V_{DC}$

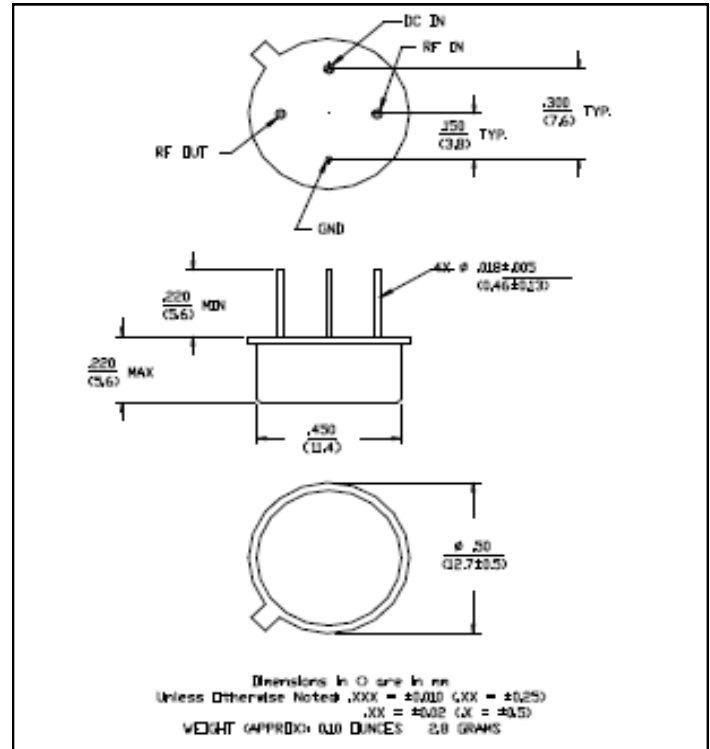
| Parameter | Rating |
|---|---------|
| Thermal Resistance θ_{jc} | 143°C/W |
| Transistor Power Dissipation P_d | 0.47 W |
| Junction Temperature Rise Above Case T_{jc} | 68°C |

1 * Over temperature performance limits for part number AMC-147, guaranteed from 0°C to +50°C only.

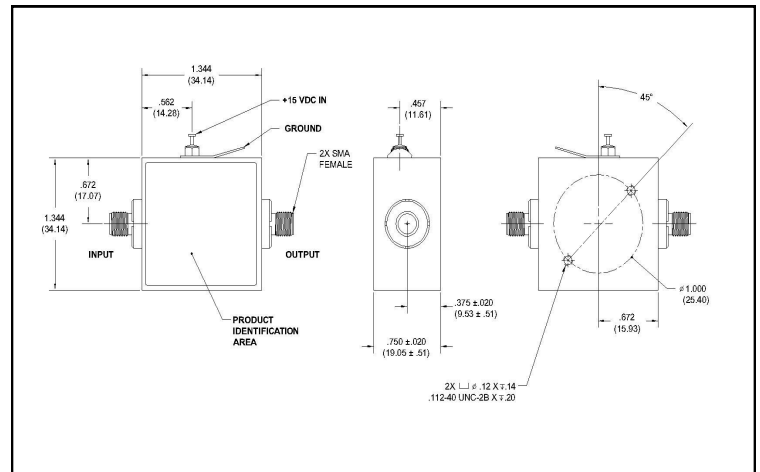
Typical Performance Curves at +25°C



Outline Drawing: TO-8-1



Outline Drawing: SMA Connectorized *



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