

Cascadable Amplifier 10 to 1000 MHz

Rev. V4

Features

- HIGH OUTPUT POWER: +15.3 dB (TYP.)
- HIGH THIRD ORDER I.P. +27 dBm (TYP.)
- LOW VSWR: <1.3:1 (TYP.)
- WIDE POWER SUPPLY RANGE: +5 TO +15 VOLTS

Description

The A17 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

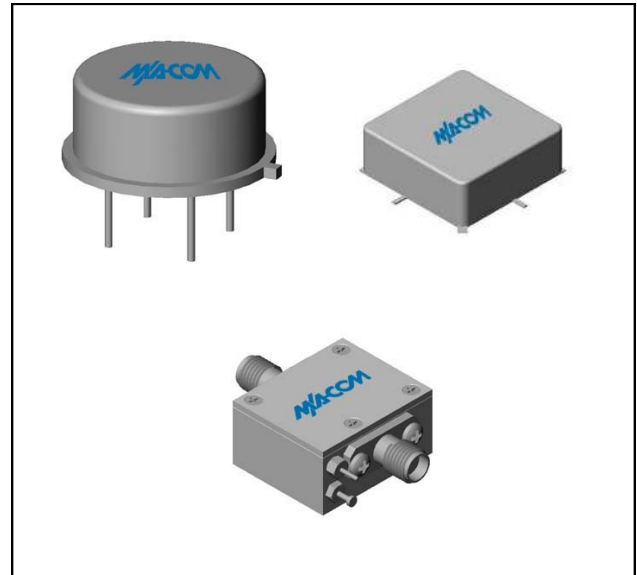
This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Both TO-8 and Surface Mount packages are Hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

| Part Number | Package |
|-------------|----------------------|
| A17 | TO-8 |
| SMA17 | Surface Mount |
| CA17 | SMA Connectorized ** |

** The connectorized version 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 | 2-1100 | 10-1000 | 10-1000 |
| Small Signal Gain (min) | dB | 12.0 | 10.5 | 10.00 |
| Gain Flatness (max) | dB | ±0.2 | ±0.7 | ±1.0 |
| Reverse Isolation | dB | 16 | | |
| Noise Figure (max) | dB | 6.0 | 6.5 | 7.0 |
| Power Output @ 1 dB comp. (min) | dBm | 15.3 | 14.0 | 13.5 |
| IP3 | dBm | +27 | | |
| IP2 | dBm | +49 | | |
| Second Order Harmonic IP | dBm | +48 | | |
| VSWR Input / Output (max) | | 1.3:1 / 1.3:1 | 1.8:1 / 1.8:1 | 2.0:1 / 2.0:1 |
| DC Current @ 15 Volts (max) | mA | 44 | 47 | 49 |

Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|--|------------------|
| Storage Temperature | -62°C to +125°C |
| Case Temperature | +125°C |
| DC Voltage | +17 V |
| Continuous Input Power | 13 dBm |
| Short Term Input power (1 minute max.) | 50 mW |
| Peak Power (3 µsec max.) | 0.5 W |
| "S" Series Burn-In Temperature (case) | +125°C |

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

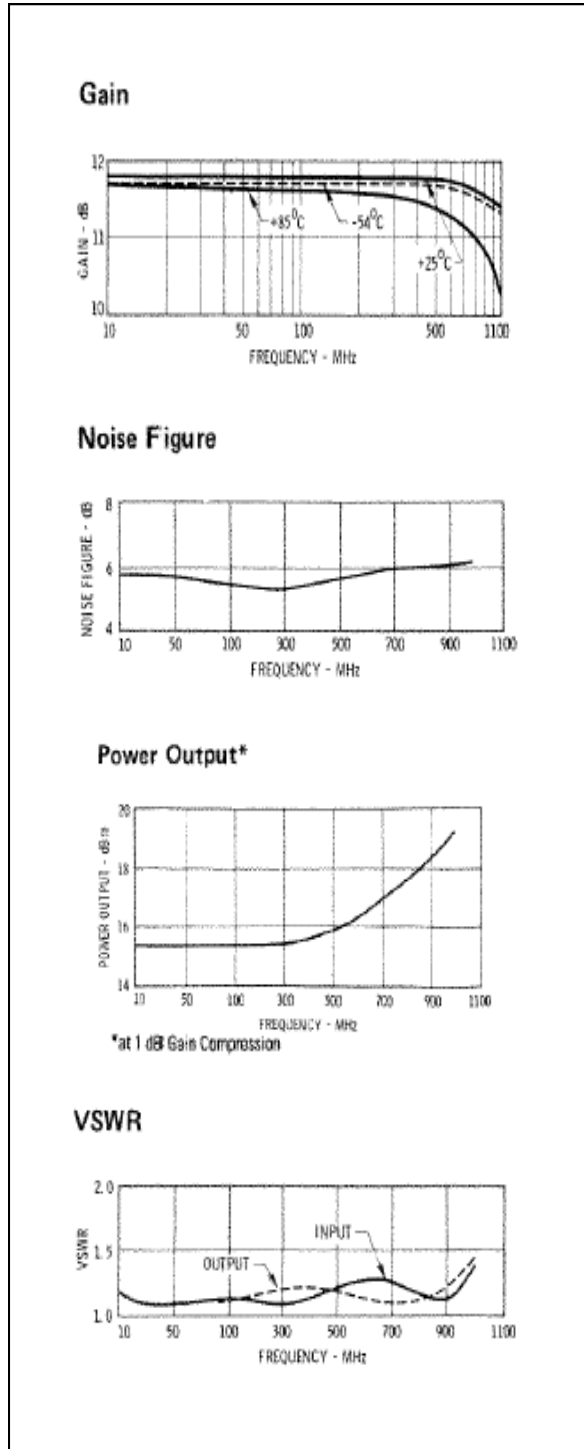
| Parameter | Rating |
|---|---------|
| Thermal Resistance θ_{jc} | 130°C/W |
| Transistor Power Dissipation P_d | 0.376 W |
| Junction Temperature Rise Above Case T_{jc} | +49°C |

1 * Over temperature performance limits for part number CA17, guaranteed from 0°C to +50°C only.

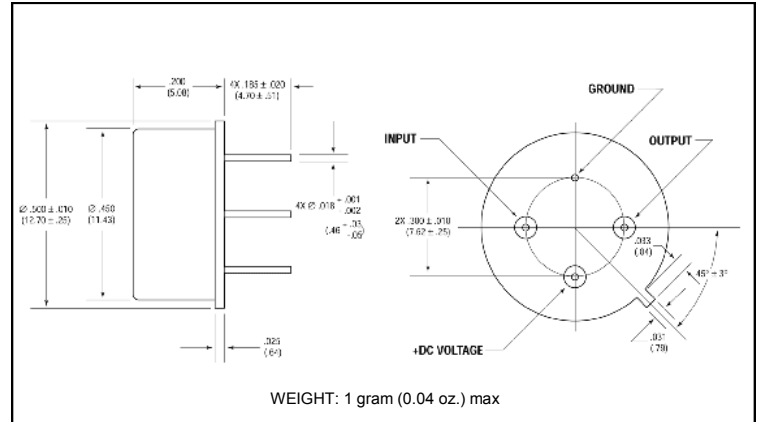
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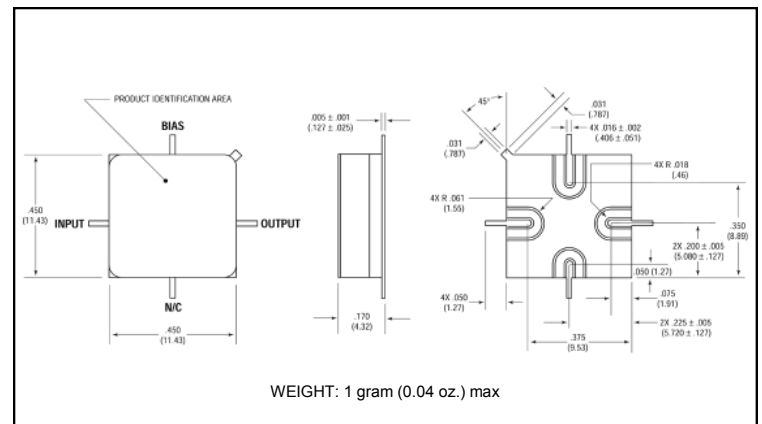
Typical Performance Curves at +25°C



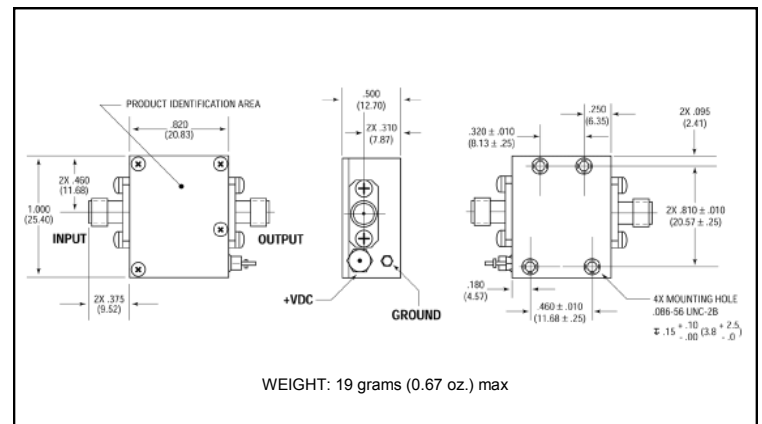
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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