

Cascadable Amplifier 20 to 250 MHz

Rev. V3

Features

- HIGH REVERSE ISOLATION: >28.5 dB (TYP.)
- HIGH LEVEL OUTPUT: +20 dBm (TYP.)
- LOW NOISE: 2.8 dB (TYP.)
- HIGH GAIN: 24.5 dB (TYP.)

Description

The A82 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

The 2 stage silicon bipolar feedback amplifier design displays impressive performance over a broadband frequency range. An isolation transformer is used in the feedback loop, with the benefit of high reverse isolation.

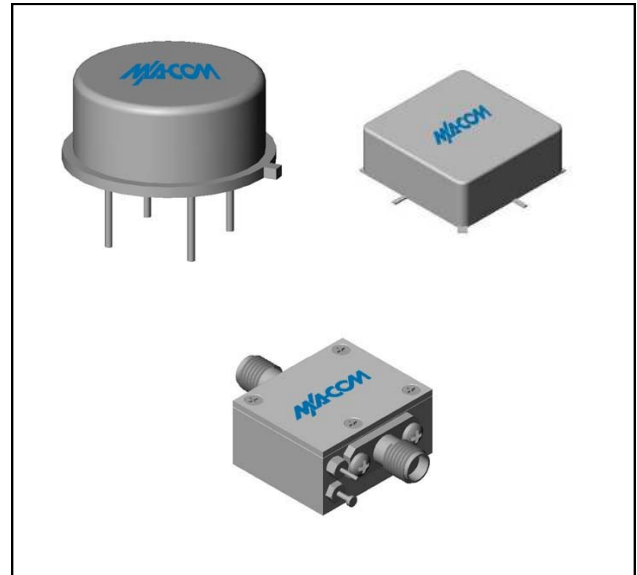
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

| Part Number | Package |
|-------------|-------------------|
| A82 | TO-8 |
| SMA82 | Surface Mount |
| CA82** | 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 | 10-300 | 20-250 | 20-250 |
| Small Signal Gain (min) | dB | 25.0 | 24.0 | 23.5 |
| Gain Flatness (max) | dB | ±0.3 | ±0.7 | ±1.0 |
| Reverse Isolation | dB | 29 | | |
| Noise Figure (max) | dB | 2.8 | 3.5 | 4.0 |
| Power Output @ 1 dB comp. (min) | dBm | 20.0 | 19.0 | 18.0 |
| IP3 | dBm | +31 | | |
| IP2 | dBm | +36 | | |
| Second Order Harmonic IP | dBm | +42 | | |
| VSWR Input / Output (max) | | 1.3:1 / 1.3:1 | 1.7:1 / 1.7:1 | 1.9:1 / 1.9:1 |
| DC Current @ 15 Volts (max) | mA | 50 | 52 | 54 |

Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|--|------------------|
| Storage Temperature | -62°C to +125°C |
| Case Temperature | +125°C |
| DC Voltage | +17 V |
| Continuous Input Power | 10 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} | 144°C/W |
| Transistor Power Dissipation P_d | 0.273 W |
| Junction Temperature Rise Above Case T_{jc} | 39°C |

1 * Over temperature performance limits for part number CA82, guaranteed from 0°C to +50°C only.

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