# A32-1 / SMA32-1

## Cascadable Amplifier
## 100 to 2000 MHz

Rev. V3

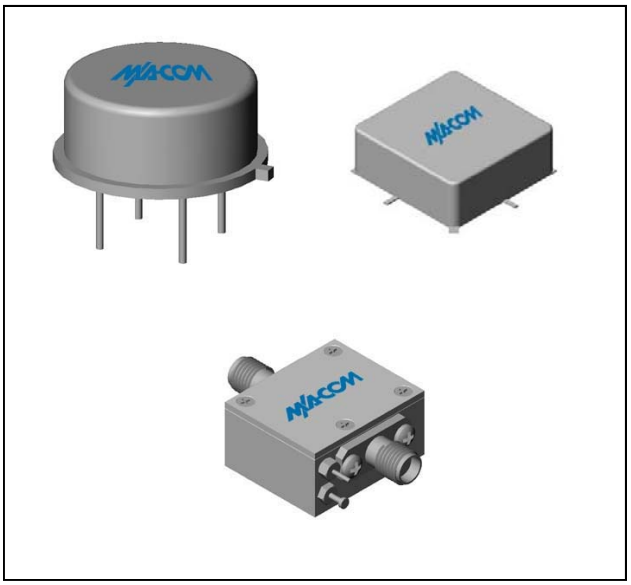
### Features

- LOW NOISE FIGURE: 2.5 dB (TYP.)
- HIGH OUTPUT LEVEL: 15.5 dBm (TYP.)
- MEDIUM THIRD ORDER IP: +25.0 dBm (TYP.)
- GaAs FET DESIGN

### Description

The A32-1 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.
This single stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range. An RF choke is used for DC power supply decoupling.
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

### Product Image



### Ordering Information

| Part Number | Package |
|---|---|
| A32-1 | TO-8 |
| SMA32-1 | Surface Mount |
| CA32-1 ** | SMA Connectorized |

** The connectorized version is not RoHs compliant.

### Electrical Specifications: $Z_0 = 50\Omega$, $V_{CC} = +5\ V_{DC}$

| Parameter | Units | Typical | Guaranteed | |
|---|---|---|---|---|
| | | 25ºC | 0º to 50ºC | -54º to +85ºC* |
| Frequency | GHz | 0.1-2.0 | 0.1-2.0 | 0.1-2.0 |
| Small Signal Gain (min) | dB | 11.5 | 9.0 | 8.5 |
| Gain Flatness (max) | dB | ±0.3 | ±0.7 | ±1.0 |
| Reverse Isolation | dB | 20 | | |
| Noise Figure (max) | dB | 2.5 | 3.0 | 3.5 |
| Power Output @ 1 dB comp. (min) | dBm | 15.5 | 13.5 | 12.5 |
| IP3 | dBm | +25 | | |
| IP2 | dBm | +30 | | |
| Second Order Harmonic IP | dBm | +37 | | |
| VSWR Input / Output (max) | | 1.8:1 / 1.8:1 | 2.1:1 / 2.1:1 | 2.3:1 / 2.3:1 |
| DC Current @ 5 Volts (max) | mA | 44 | 50 | 52 |

* Over temperature performance limits for part number CA32-1, guaranteed from 0°C to +50°C only.

### Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|---|---|
| Storage Temperature | -62ºC to +125ºC |
| Case Temperature | +125ºC |
| DC Voltage | +8 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) | +125ºC |

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

| Parameter | Rating |
|---|---|
| Thermal Resistance $\theta_{jc}$ | 165ºC/W |
| Transistor Power Dissipation $P_d$ | 0.111 W |
| Junction Temperature Rise Above Case $T_{jc}$ | +16.2ºC |

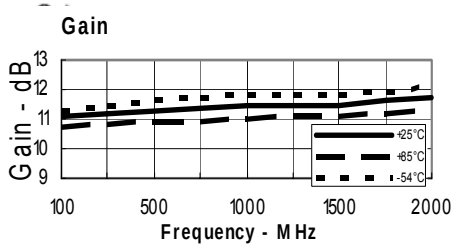


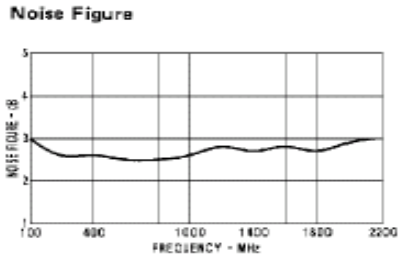
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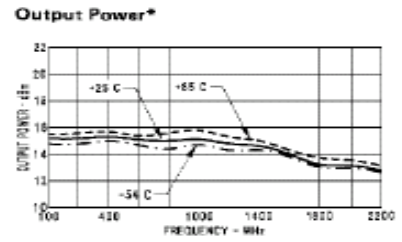
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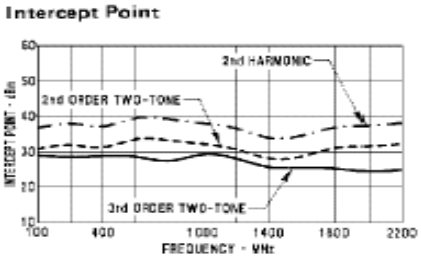
## Typical Performance Curves at +25°C

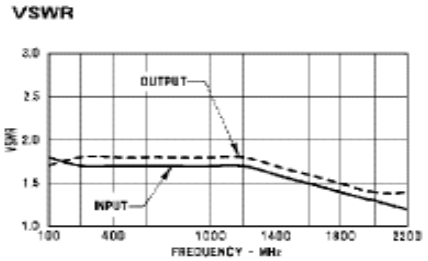


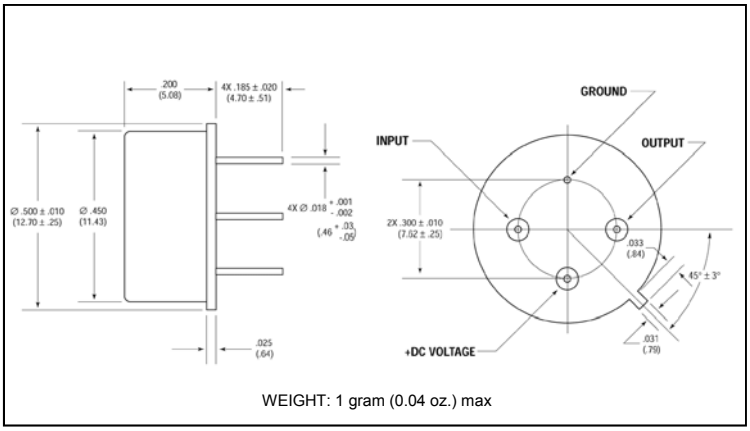




* at 1 dB Gain Compression



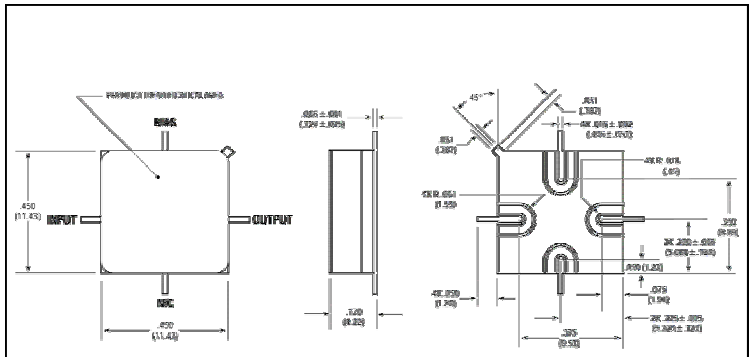




## Outline Drawing: TO-8 *



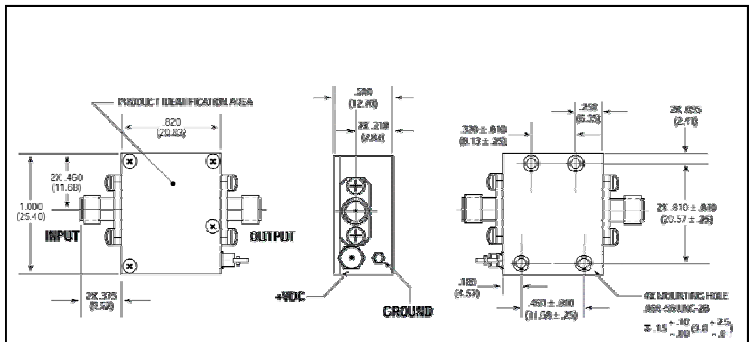

WEIGHT: 1 gram (0.04 oz.) max

## Outline Drawing: Surface Mount *




WEIGHT: 1 gram (0.04 oz.) max

## Outline Drawing: SMA Connectorized *




WEIGHT: 19 grams (0.67 oz.) max

* Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified.




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