tyco Electronics

M/ACOM

# Cascadable Amplifier
# 5 to 1000 MHz

# A11-2 / SMA11-2
V2

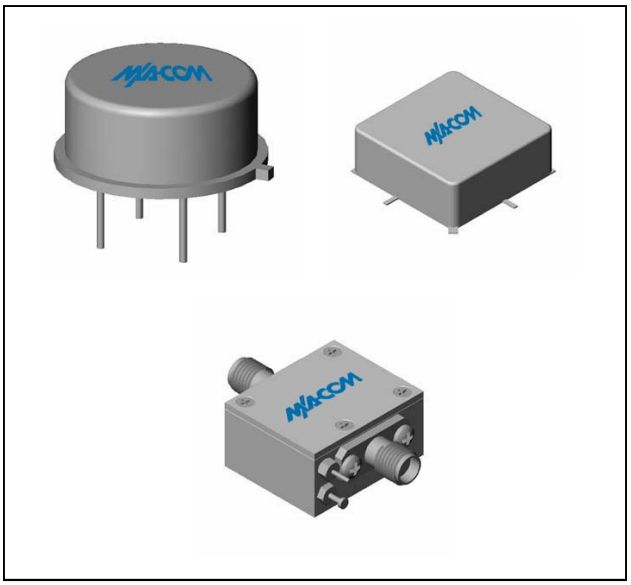
## Features

- LOW NOISE: 2.5 dB (TYP.)
- HIGH GAIN: 16 dB (TYP.)

## Description

The A11-2 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.

## Product Image



## Ordering Information

| Part Number | Package |
|---|---|
| A11-2 | TO-8 |
| SMA11-2 | Surface Mount |
| CA11-2 | SMA Connectorized |

## Electrical Specifications: $Z_0$ = 50Ω, $V_{CC}$ = +15 $V_{DC}$

| Parameter | Units | Typical | Guaranteed | |
|---|---|---|---|---|
| | | 25ºC | 0º to 50ºC | -54º to +85ºC* |
| Frequency | MHz | 1-1100 | 5-1000 | 5-1000 |
| Small Signal Gain (min) | dB | 16.0 | 15.0 | 14.0 |
| Gain Flatness (max) | dB | ±0.3 | ±0.9 | ±1.0 |
| Reverse Isolation | dB | 21 | | |
| Noise Figure (max) | dB | 2.5 | 3.0 | 3.5 |
| Power Output @ 1 dB comp. (min) | dBm | -1.0 | -3.0 | -3.5 |
| IP3 | dBm | +10 | | |
| IP2 | dBm | +10 | | |
| Second Order Harmonic IP | dBm | +15 | | |
| VSWR Input / Output (max) | | 1.4:1 / 1.4:1 | 1.9:1 / 1.9:1 | 2.0:1 / 2.0:1 |
| DC Current @ 15 Volts (max) | mA | 9 | 11 | 12 |

## Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|---|---|
| Storage Temperature | -62ºC to +125ºC |
| Case Temperature | +125ºC |
| DC Voltage | +20 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 $\theta_{jc}$ | 45ºC/W |
| Transistor Power Dissipation $P_d$ | 0.057 W |
| Junction Temperature Rise Above Case $T_{jc}$ | +3ºC |

* Over temperature performance limits for part number CA11-2, guaranteed from 0°C to +50°C only.



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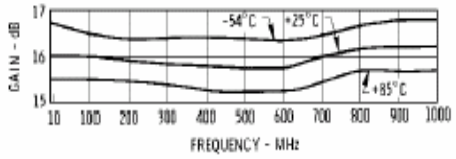
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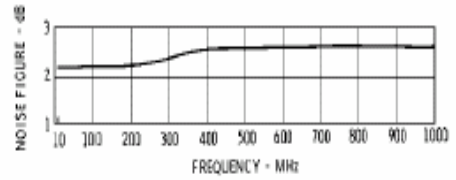
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## Typical Performance Curves at +25°C

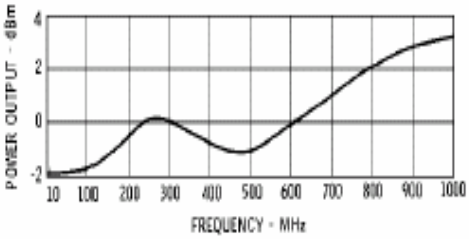
### Gain




### Noise Figure

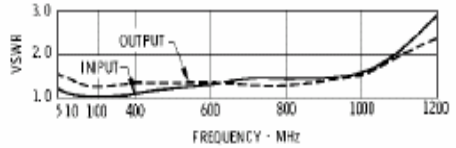



### Power Output*

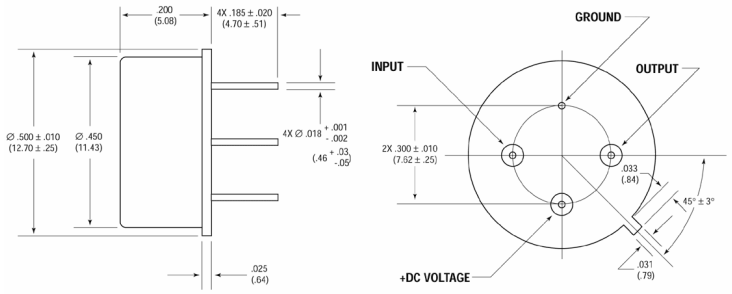



*at 1 dB Gain Compression

### VSWR

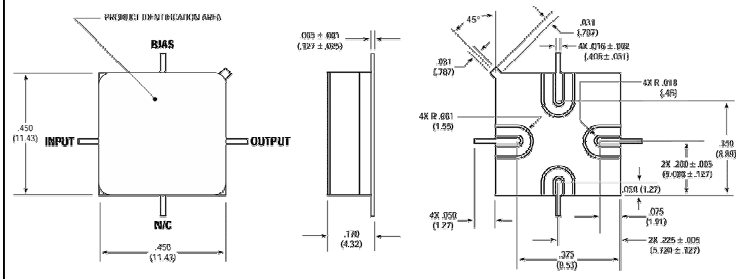



## Outline Drawing: TO-8 *



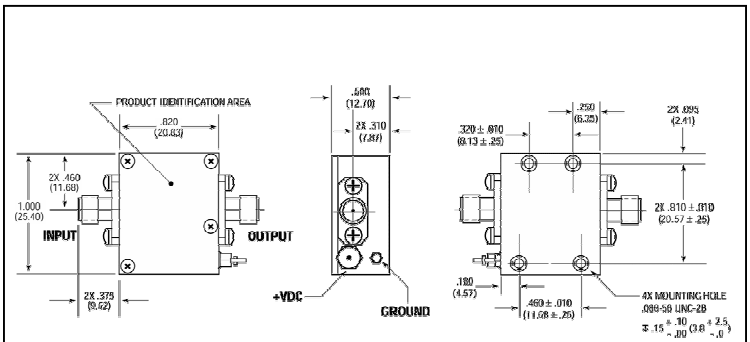

WEIGHT: 1 gram (0.04 oz.) max

## 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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