

# Cascadable Amplifier 10 to 200 MHz

Rev. V4

#### **Features**

• HIGH REVERSE ISOLATION: >32 dB (TYP.)

• VERY LOW NOISE: 2.0 dB (TYP.)

• HIGH GAIN: 27.3 dB (TYP.)

• HIGH EFFICIENCY: 29 mA AT 15 VOLTS (TYP.)

#### Description

The A80-1 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.

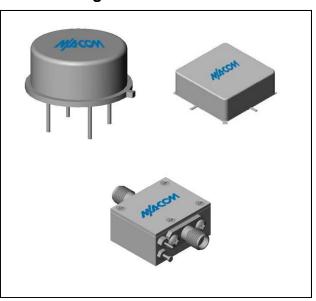
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

#### **Ordering Information**

Part Number	Package	
A80-1	TO-8	
SMA80-1	Surface Mount	
MAAM-007844-0CA801	SMA Connectorized **	

<sup>\*\*</sup> The connectorized version is not RoHs compliant.

#### **Product Image**



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

#### Guaranteed **Typical Parameter Units** 25°C 0° to 50°C -54º to +85ºC\* Frequency MHz 5-200 10-200 10-200 Small Signal Gain (min) dB 27.3 26.0 25.0 ±0.7 Gain Flatness (max) dB +0.3+1.0Reverse Isolation dB 33 dB 3.0 Noise Figure (max) 2.0 2.5 **Power Output** 14.5 14.0 dBm 16.0 @ 1 dB comp. (min) dBm +28 IP2 dBm +33 Second Order Harmonic IP dBm +39 VSWR Input / Output (max) 1.5:1 / 1.8:1 1.8:1 / 2.1:1 2.0:1 / 2.3:1 DC Current @ 15 Volts (max) mΑ 30 32 34

### **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 $\theta_{jc}$	184°C/W
Transistor Power Dissipation P <sub>d</sub>	0.155 W
Junction Temperature Rise Above Case T <sub>jc</sub>	28°C

<sup>\*</sup> Over temperature performance limits for part number MAAM-007844-0CA801, guaranteed from 0°C to +50°C

Commitment to produce in volume is not guaranteed.

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available.

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 Visit www.macomtech.com for additional data sheets and product information.



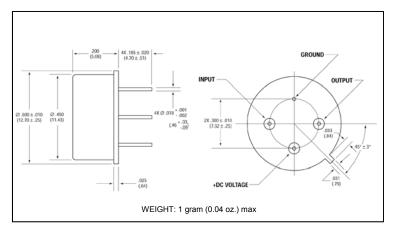
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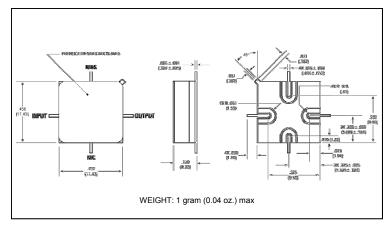
## Typical Performance Curves at +25°C

# Gain 100 150 200 250 300 350 Frequency (MHz) Noise Figure 24 15 V 100 150 200 250 300 350 400 450 ncy (MHz) Power Output (1 dB Gain Compression) Power Output (eBm) 160 200 Frequency (MHz) Intercept Point 50 150 200 VSWR 50 100 150 200 250 300 350 400 450 Frequency (MHz)

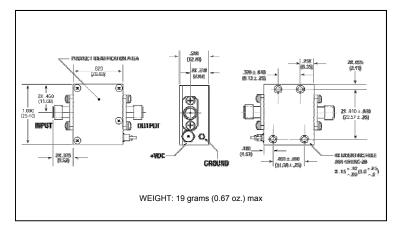
# Outline Drawing: TO-8 \*



### **Outline Drawing: Surface Mount**



# Outline Drawing: SMA Connectorized \*



- \* Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified.
  - India Tel: +91.80.4155721 Visit www.macomtech.com for additional data sheets and product information.

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