

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.

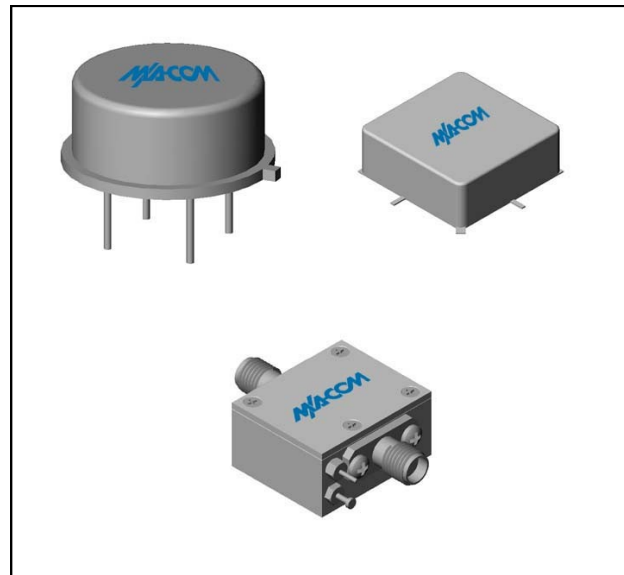
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

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

** 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	5-200	10-200	10-200
Small Signal Gain (min)	dB	27.3	26.0	25.0
Gain Flatness (max)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	33		
Noise Figure (max)	dB	2.0	2.5	3.0
Power Output @ 1 dB comp. (min)	dBm	16.0	14.5	14.0
IP3	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)	mA	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

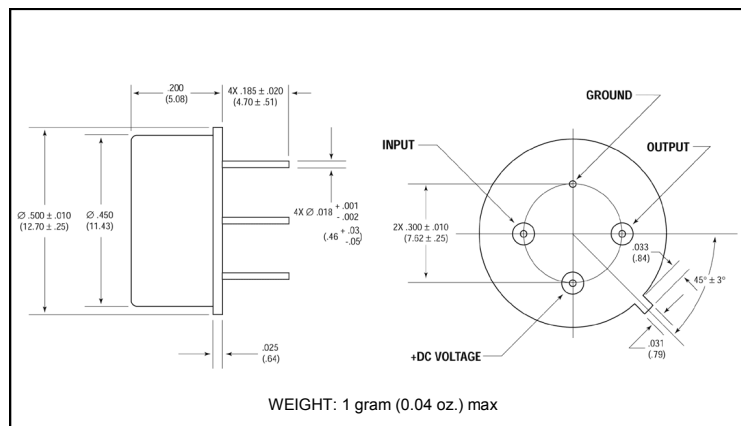
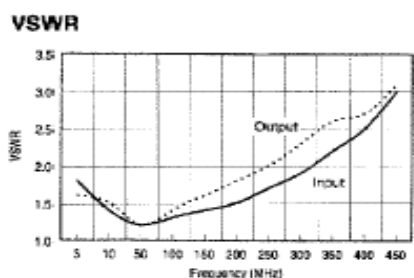
Thermal Data: $V_{CC} = +15 V_{DC}$

Parameter	Rating
Thermal Resistance θ_{jc}	184°C/W
Transistor Power Dissipation P_d	0.155 W
Junction Temperature Rise Above Case T_{jc}	28°C

1 * Over temperature performance limits for part number MAAM-007844-0CA801, guaranteed from 0°C to +50°C

Rev. V4

Outline Drawing: TO-8 *



The drawing consists of three views of the component:

- Top View:** A square component with rounded corners. Dimensions include a width of .450 (11.43) and a height of .450 (11.43). It features a central "BIAS" pin, an "INPUT" pin on the left, an "OUTPUT" pin on the right, and an "N/C" (Not Connected) pin at the bottom. A "PRODUCT IDENTIFICATION AREA" is indicated by a dot in the upper left quadrant.
- Side View:** Shows the component's profile with a total height of .005 ± .001 (.127 ± .025) and a base width of .170 (4.32).
- Cross-sectional View:** A detailed view of the internal structure showing a 45° angle, various pin diameters (.031, .031, .050, .050), and lengths (4X .015 ± .002, 4X R. .018 (.46), 2X .200 ± .005 (5.080 ± .127), 2X .225 ± .005 (5.720 ± .127), .375 (9.53), .050 (1.27), .075 (1.91), .350 (8.89)).

WEIGHT: 1 gram (0.04 oz.) max

The drawing consists of three views of the 28-pin DIP package:

- Top View:** Shows the package footprint. Dimensions include a total width of 0.820 (20.83), a pin pitch of 0.050 (1.27), and a distance from the input/output pins to the center of the package of 0.250 (6.35). The input and output pins are labeled "INPUT" and "OUTPUT" respectively. The package is marked with "X" symbols in the corners.
- Side View:** Shows the package height. The total height is 0.500 (12.70). The distance from the top of the package to the center of the pins is 0.250 (6.35). The package is marked with "X" symbols on the sides.
- End View:** Shows the package profile. Dimensions include a total width of 0.320 ± 0.010 (8.13 ± 25), a pin pitch of 0.050 (1.27), and a distance from the input/output pins to the center of the package of 0.250 (6.35). The package is marked with "X" symbols on the ends.

Additional labels include "PRODUCT IDENTIFICATION AREA", "INPUT", "OUTPUT", "+VDC", "GROUND", "2X .460 (11.68)", "2X .375 (9.52)", "2X .610 ± 0.010 (20.57 ± 25)", "4X MOUNTING HOLE .086-56 UNC-2B", and "2X .095 (2.41)".

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