

Cascadable Amplifier 10 to 1200 MHz

Rev. V4

Features

- LOW NOISE: 3.5 dB (TYP.)
- HIGH EFFICIENCY: 15 mA (TYP.) @ +5 Volts
- GOOD DYNAMIC RANGE: 102.5 dB (TYP.) in 1 MHz BW
- LOW VSWR: <1.5:1 (TYP.)

Description

The A16-2 RF amplifier is a discrete thin film hybrid design, which incorporates the use of 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. An active DC biasing network is used for temperature-stable performance, in addition to an RF Choke, used for power supply decoupling. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.



Ordering Information

Part Number	Package
MAAM-008198-00A162	TO-8
MAAM-008198-SMA162	Surface Mount
MAAM-008198-OCA162	SMA Connectorized **

** The connectorized version is not RoHs compliant.

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

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
Frequency	MHz	5-1300	10-1200	10-1200
Small Signal Gain (min)	dB	13.0	12.0	11.5
Gain Flatness (max)	dB	±0.2	±0.5	±0.7
Reverse Isolation	dB	16		
Noise Figure (max)	dB	3.5	4.0	4.5
Power Output @ 1 dB comp. (min)	dBm	6.0	5.0	4.5
IP3	dBm	+18		
IP2	dBm	+28		
Second Order Harmonic IP	dBm	+34		
VSWR Input / Output (max)		1.5:1 / 1.5:1	2.2:1 / 2.2:1	2.3:1 / 2.3:1
DC Current @ 15 Volts (max)	mA	15	17	18

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
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)	+125°C

Thermal Data: $V_{CC} = +5 V_{DC}$

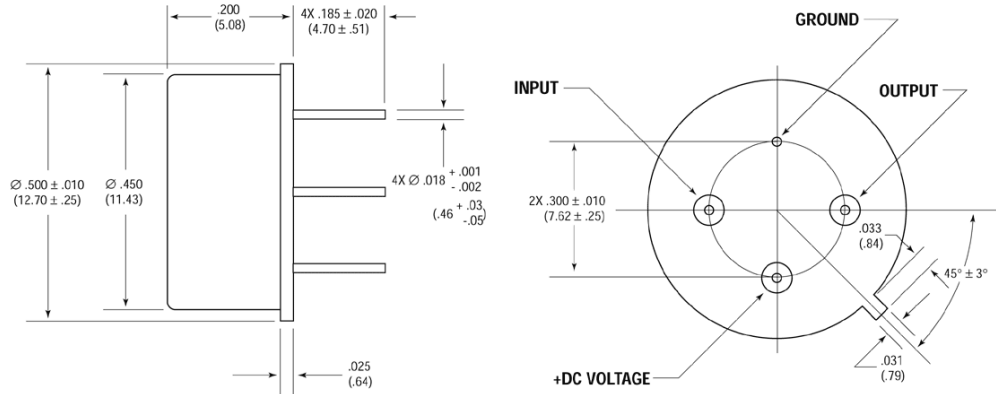
Parameter	Rating
Thermal Resistance θ_{jc}	45°C/W
Transistor Power Dissipation P_d	0.051 W
Junction Temperature Rise Above Case T_{jc}	+2°C

* Over temperature performance limits for part number CA16-2, guaranteed from 0°C to +50°C only.

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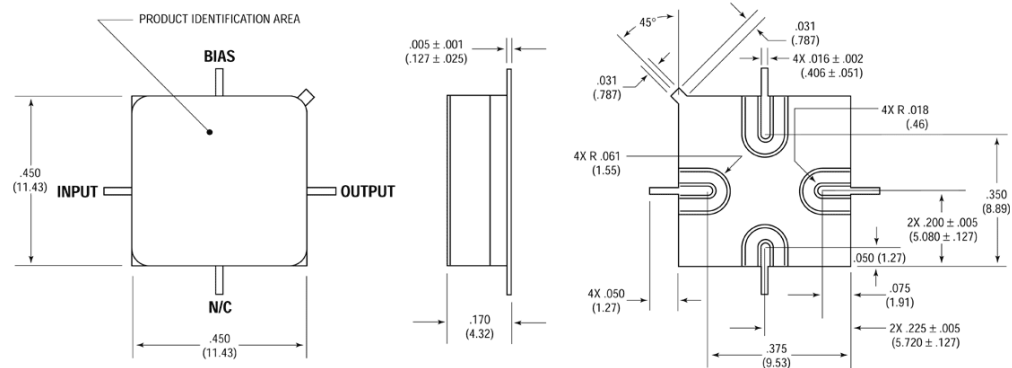
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Outline Drawing: TO-8 *



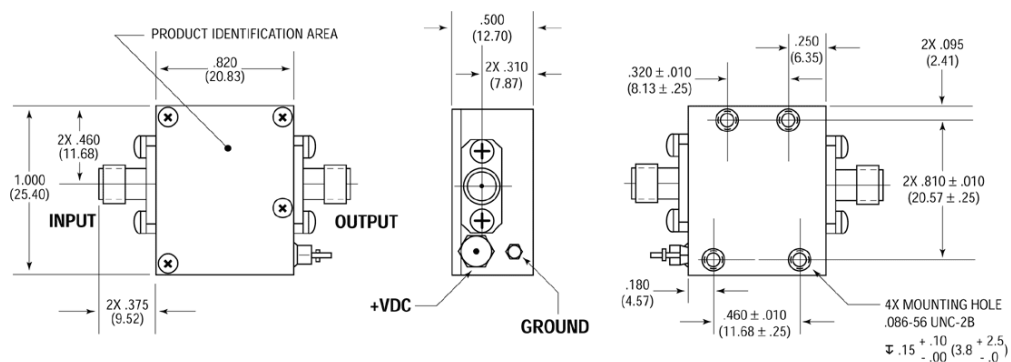
WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: Surface Mount *



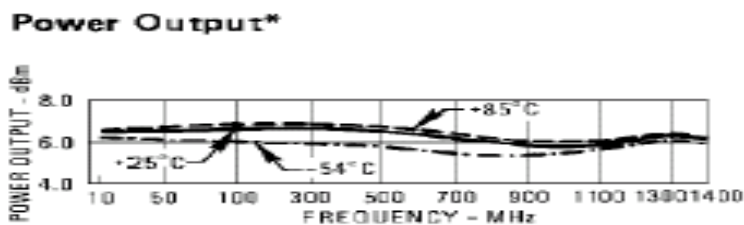
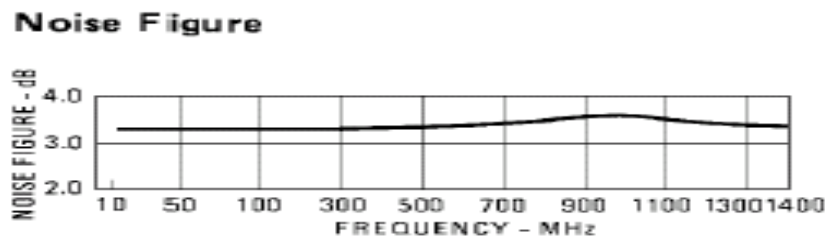
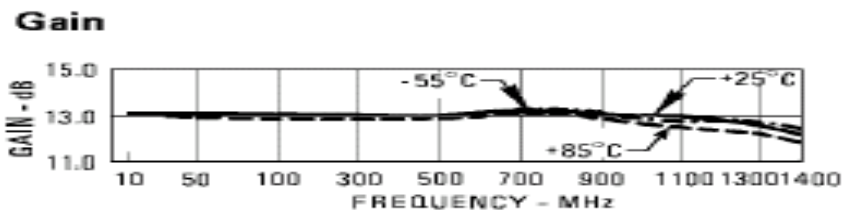
WEIGHT: 1 gram

Outline Drawing: SMA Connectorized *

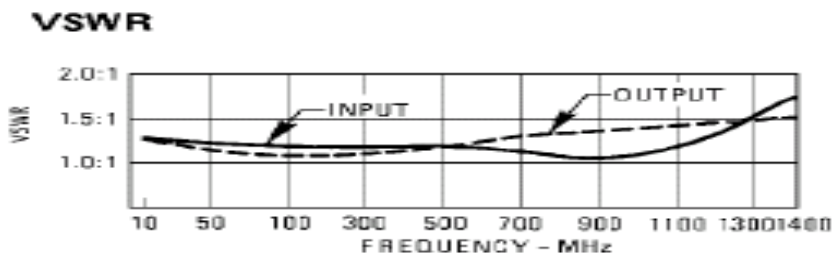
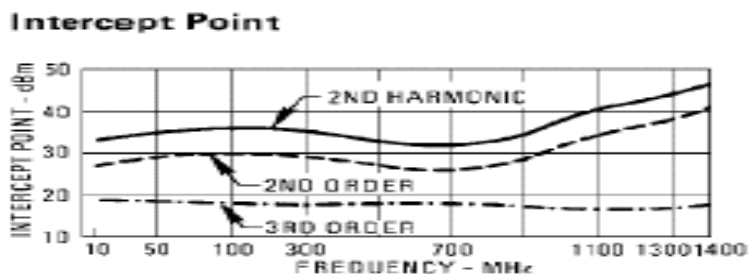


WEIGHT: 19 grams (0.67 oz.) max

Typical Performance Curves at +25°C



* at 1 dB Gain Compression



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