



# Cascadable Amplifier 10 to 1200 MHz

A16-2/ SMA16-2

V2

#### **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.)</li>

### **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.

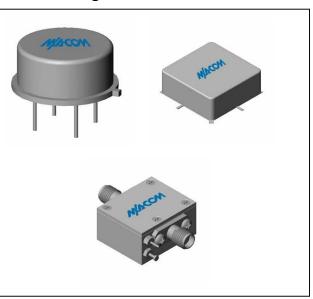
This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. An active DC biasing network is used for temperature-stable performance, in addition to an RF Choke, used for power supply decoupling.

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

## **Ordering Information**

Part Number	Package	
A16-2	TO-8	
SMA16-2	Surface Mount	
CA16-2	SMA Connectorized	

### **Product Image**



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

Parameter	Units	Typical	Guaranteed	
Parameter	Units	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	1.9:1 / 1.9:1	2.0:1 / 2.0:1
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: $V_{CC} = +15 V_{DC}$

Parameter	Rating	
Thermal Resistance $\theta_{jc}$	45°C/W	
Transistor Power Dissipation P <sub>d</sub>	0.051 W	
Junction Temperature Rise Above Case T <sub>jc</sub>	+2°C	

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

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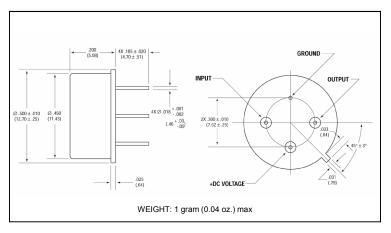
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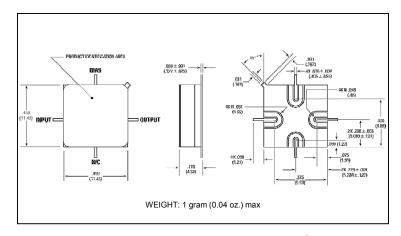
### Typical Performance Curves at +25°C

#### Gain 15.0 8 GAIN - ( 13.0 500 700 900 300 FREQUENCY - MHz Noise Figure 80.4.0 3.0 10.0 € 2.0 NOISE 10 50 100 500 700 900 FREQUENCY - MHz Power Output\* DUTPUT 6.0 +25°C 500 700 900 1100 13001400 FREQUENCY - MHz \* at 1 dB Gain Compression Intercept Point 2ND HARMONIC E 40 FH 50 2NO ORDER -3RD ORDER 10 300 700 FREQUENCY - MHz 10 100 1100 13001400 **VSWR** 2.0:1 OUTPUT 1.5:1 1.0:1 100 300 500 700 900 FREQUENCY - MHz

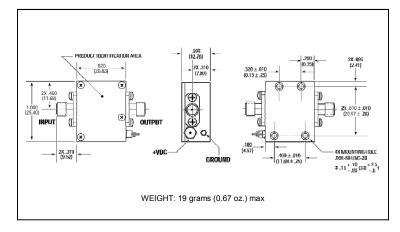
## Outline Drawing: TO-8 \*



## Outline Drawing: Surface Mount



## Outline Drawing: SMA Connectorized \*



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