

**Cascadable Amplifier  
100 to 800 MHz**

**A89/ SMA89**

V3

**Features**

- HIGH REVERSE ISOLATION: >29 dB (TYP.)
- LOW INPUT VSWR: 1.4:1 (TYP.)
- HIGH LEVEL OUTPUT: +17.5 dBm (TYP.)

**Description**

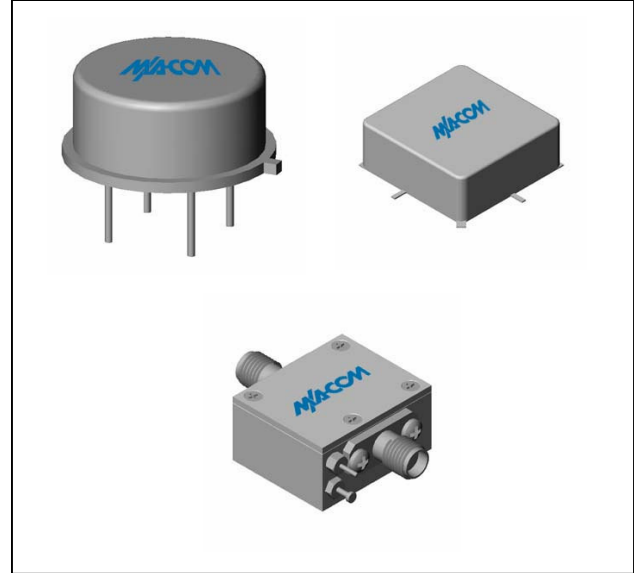
The A89 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability. The 2 stage silicon bipolar feedback amplifier design displays impressive performance over a broadband frequency range. An isolation transformer is used in the 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
A89	TO-8
SMA89	Surface Mount
CA89 **	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	50-800	100-800	100-800
Small Signal Gain (min)	dB	22.0	21.0	20.5
Gain Flatness (max)	dB	±0.5	±0.8	±1.0
Reverse Isolation	dB	29		
Noise Figure (max)	dB	4.5	5.5	6.0
Power Output @ 1 dB comp. (min)	dBm	17.5	16.5	16.0
IP3	dBm	+30		
IP2	dBm	+35		
Second Order Harmonic IP	dBm	+42		
VSWR Input / Output (max)		1.4:1 / 1.4:1	2.0:1 / 2.0:1	2.2:1 / 2.2:1
DC Current @ 15 Volts (max)	mA	42	48	50

**Absolute Maximum Ratings**

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+17 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 $\theta_{jc}$	144°C/W
Transistor Power Dissipation $P_d$	0.396 W
Junction Temperature Rise Above Case $T_{jc}$	57°C

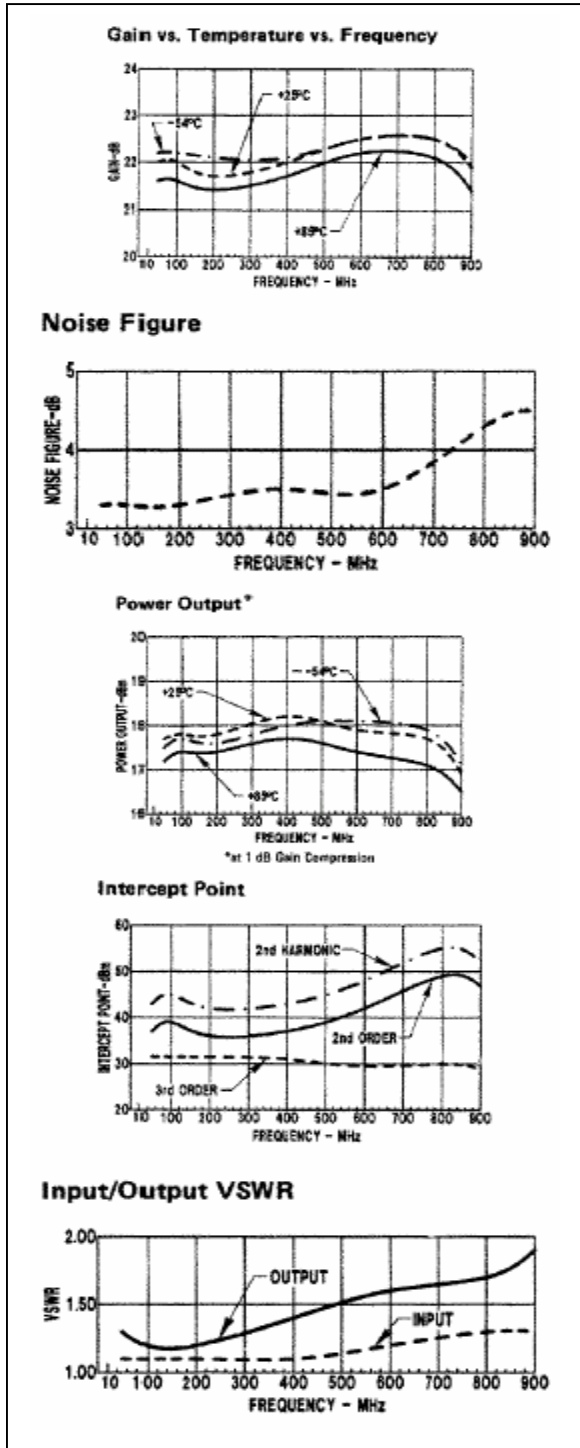
\* Over temperature performance limits for part number CA89, guaranteed from 0°C to +50°C only.

**Cascadable Amplifier  
100 to 800 MHz**

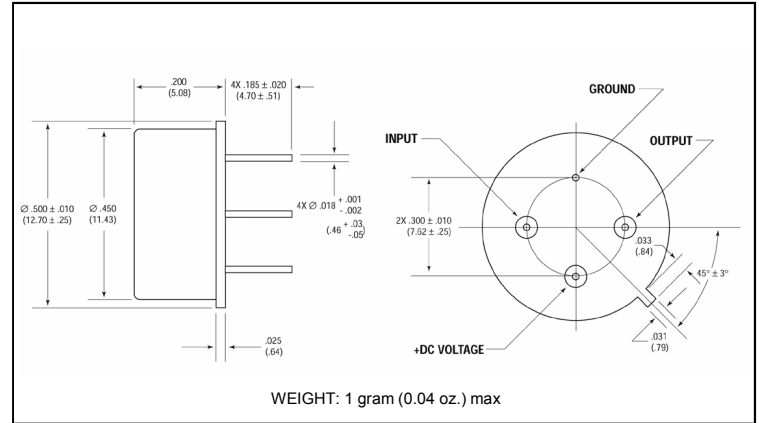
**A89/ SMA89**

V3

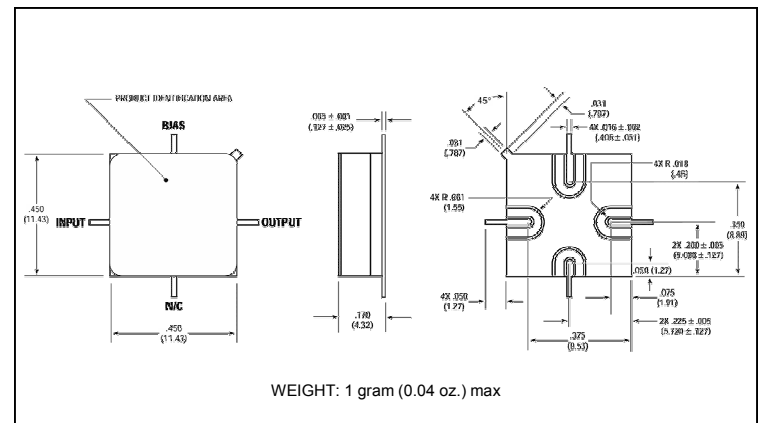
**Typical Performance Curves at +25°C**



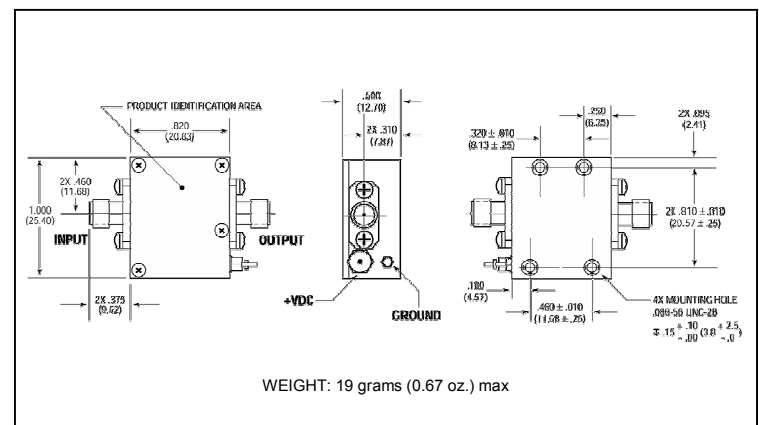
**Outline Drawing: TO-8 \***



**Outline Drawing: Surface Mount \***



**Outline Drawing: SMA Connectorized \***



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