

**Cascadable Amplifier
10 to 500 MHz**

A83/ SMA83

V2

Features

- HIGH GAIN-TWO STAGES: 30 dB (TYP.)
- LOW POWER DRAIN 65 mW @ 5 VOLTS (TYP.)
- VOLTAGE CONTROLLED GAIN 27 dB TO 34 dB @ $V_{CC} = 3$ TO 12 VOLTS
- LOW VSWR 1.3:1 (TYP.)

Description

The A83 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for consistent performance and high reliability.

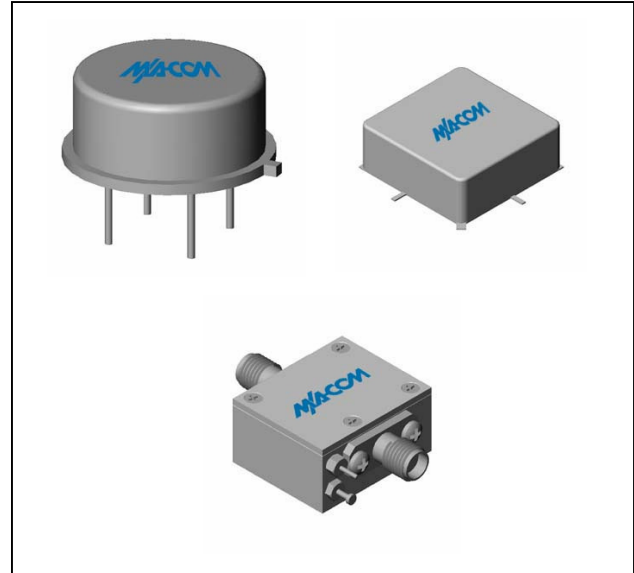
This 2 stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. An active DC biasing network insures temperature-stable performance.

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

Ordering Information

Part Number	Package
A83	TO-8
SMA83	Surface Mount
CA83	SMA Connectorized

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	10-600	10-500	10-500
Small Signal Gain (min)	dB	30.0	29.0	28.0
Gain Flatness (max)	dB	±0.3	±0.5	±0.8
Reverse Isolation	dB	40		
Noise Figure (max)	dB	3.0	3.5	4.0
Power Output @ 1 dB comp. (min)	dBm	-1.0	-2.0	-4.0
IP3	dBm	+10		
IP2	dBm	+14		
Second Order Harmonic IP	dBm	+20		
VSWR Input / Output (max)		1.3:1 / 1.3:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	13	15	16

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+13 V
Continuous Input Power	+6 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}	45°C/W
Transistor Power Dissipation P_d	0.193 W
Junction Temperature Rise Above Case T_{jc}	9°C

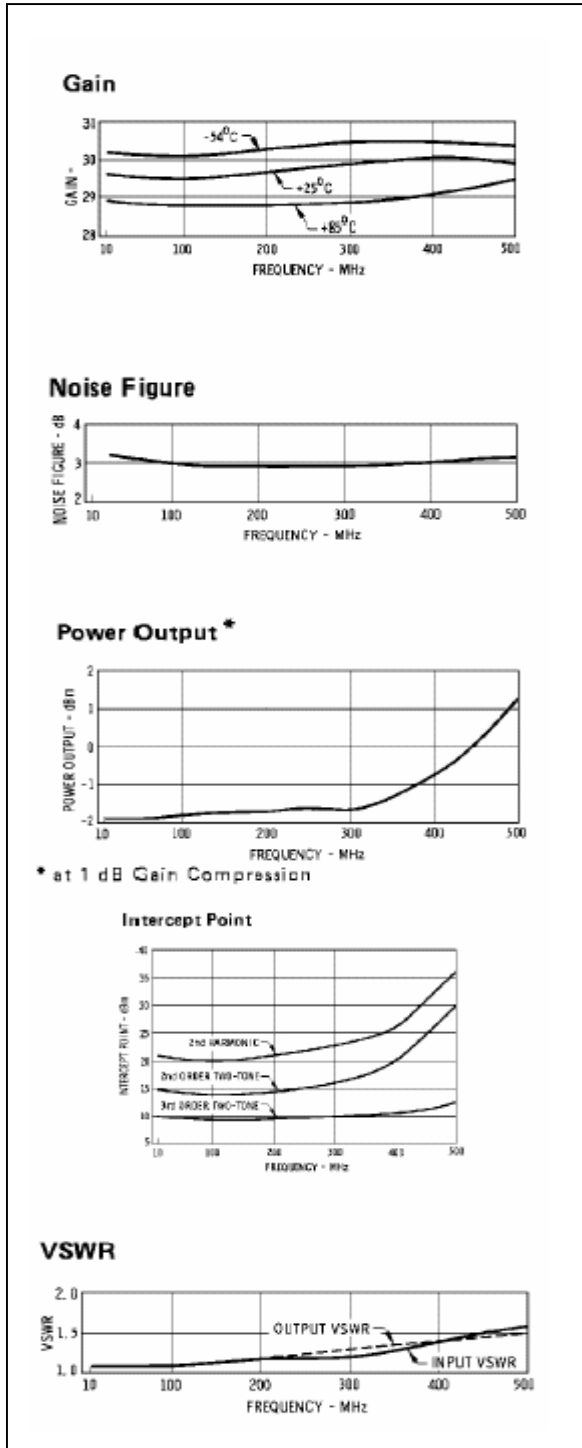
* Over temperature performance limits for part number CA83, guaranteed from 0°C to +50°C only.

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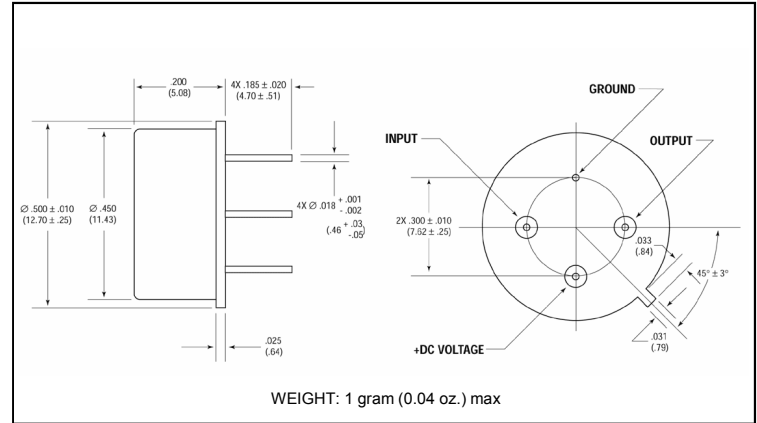
A83/ SMA83

V2

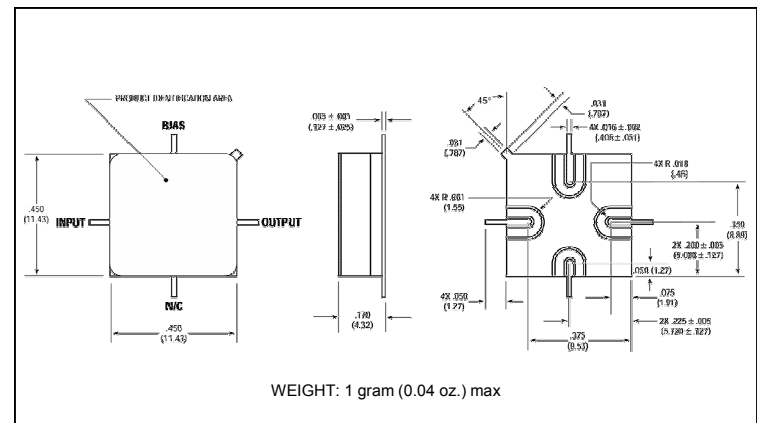
Typical Performance Curves at +25°C



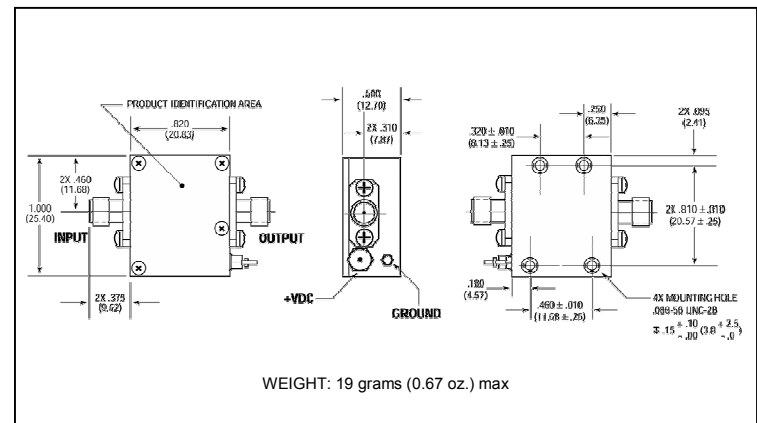
Outline Drawing: TO-8*



Outline Drawing: Surface Mount*



Outline Drawing: SMA Connectorized*



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