

Cascadable Amplifier 5 to 500 MHz

A5 / SMA5

V2

Features

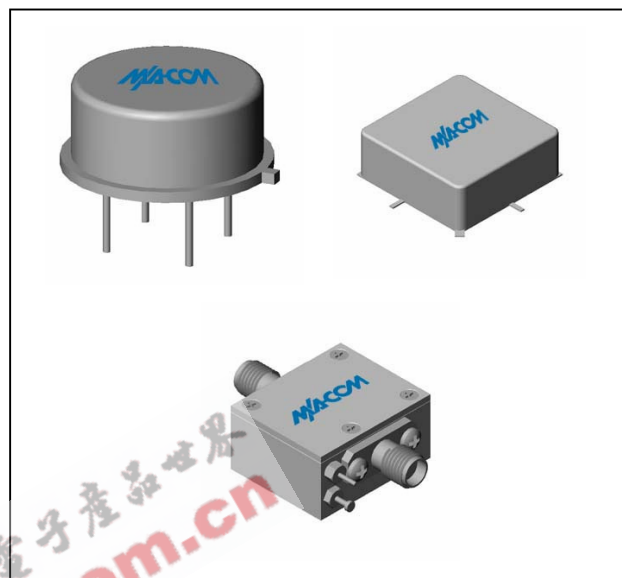
- AVAILABLE IN SURFACE MOUNT
- FLAT BANDWIDTH ± 2 dB (TYP.)
- LOW VSWR $<1.2:1$ INPUT, $<1.5:1$ OUTPUT (TYP.)
- WIDE POWER SUPPLY RANGE: +8 TO +20 VOLTS

Description

The A5 RF amplifier is a discrete hybrid design, which uses 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. Both TO-8 and Surface Mount packages are Hermetically sealed, and MIL-STD-883 environmental screening is available.

Product Image



Ordering Information

Part Number	Package
A5	TO-8
SMA5	Surface Mount
CA5	SMA Connectorized

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	3-550	5-500	5-500
Small Signal Gain (min)	dB	14.8	14.0	13.5
Gain Flatness (max)	dB	± 0.2	± 0.7	± 0.7
Reverse Isolation	dB	17		
Noise Figure (max)	dB	4.5	5.5	6.0
Power Output @ 1 dB comp. (min)	dBm	8.5	7.0	7.0
IP3	dBm	+22		
IP2	dBm	+36		
Second Order Harmonic IP	dBm	+41		
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	25	28	30

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+21 V
Continuous Input Power	+13 dBm
Short Term Input power (1 minute max.)	50 mW
Peak Power (3 μ sec 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	0.198 W
Junction Temperature Rise Above Case T_{jc}	+9°C

* Over temperature performance limits for part number CA5, guaranteed from 0°C to +50°C only.

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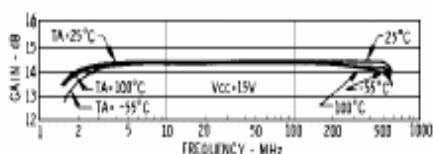
A5 / SMA5

V2

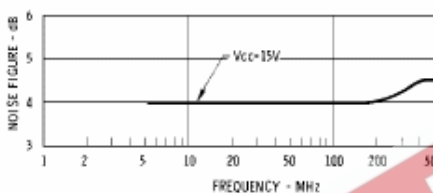
Typical Performance Curves at +25°C

Outline Drawing: TO-8 *

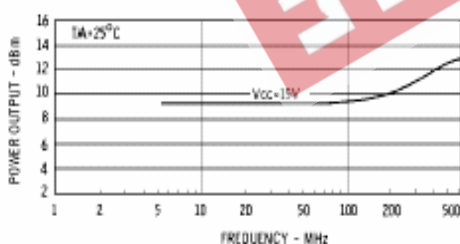
Gain



Noise Figure

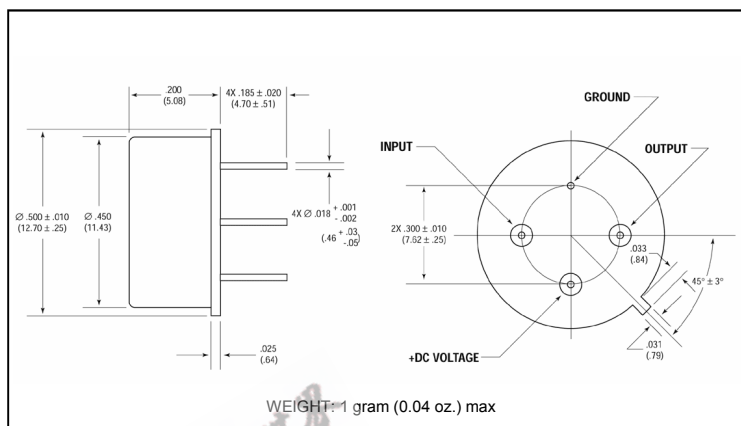
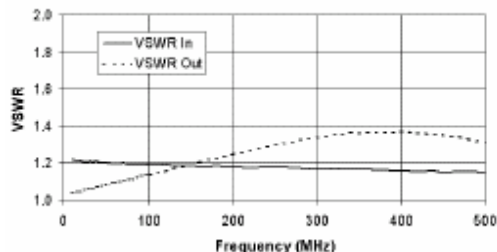


Power Output*

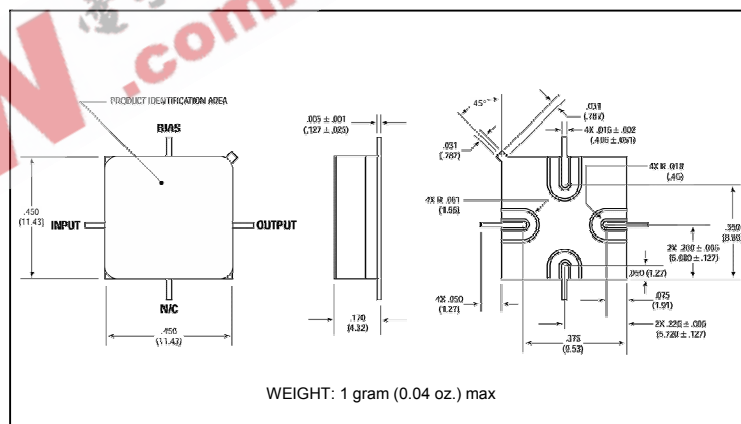


*at 1 dB Gain Compression

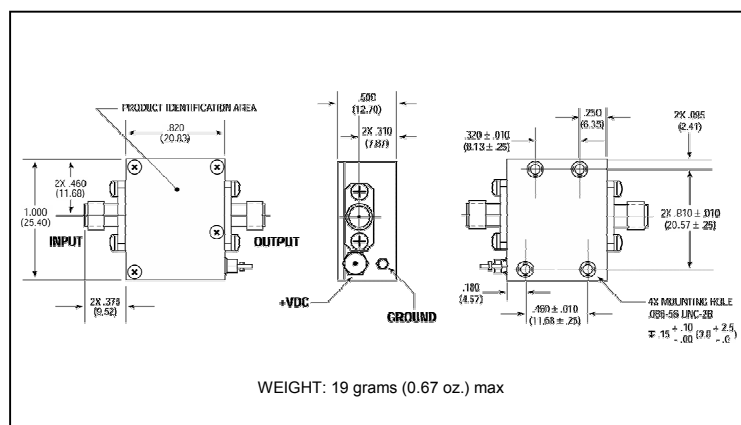
VSWR



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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