

Cascadable Amplifier 5 to 500 MHz

A5-5 / SMA5-5
V2

Features

- AVAILABLE IN SURFACE MOUNT
- FLAT BANDWIDTH ± 1 Db (TYP.)
- LOW VSWR 1.2:1
- WIDE POWER SUPPLY RANGE: +8 to +15 VOLTS
- EXCELLENT PHASE LINEARITY $\pm 8^\circ$ (TYP.)

Description

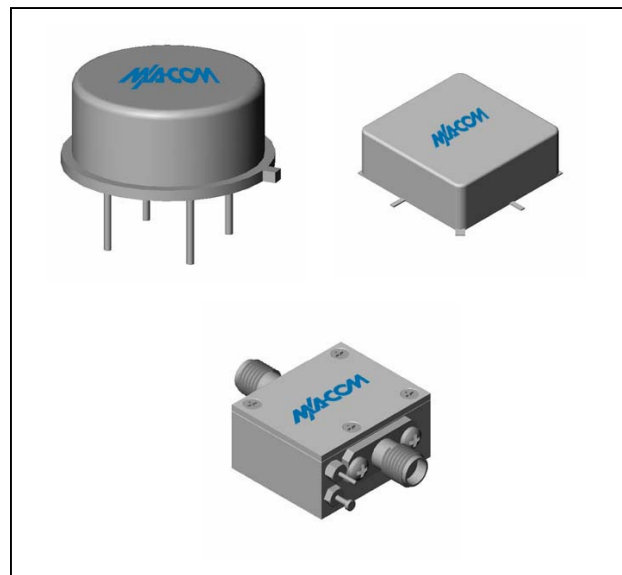
The A5-5 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

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.

Ordering Information

Part Number	Package
A5-5	TO-8
SMA5-5	Surface Mount
CA5-5	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	1-650	5-500	5-500
Small Signal Gain (min)	dB	15.5	14.0	13.5
Gain Flatness (max)	dB	± 0.1	± 0.5	± 0.7
Reverse Isolation	dB	21		
Noise Figure (max)	dB	4.0	5.0	5.5
Power Output @ 1 dB comp. (min)	dBm	9.0	7.0	6.5
IP3	dBm	+21		
IP2	dBm	+38		
Second Order Harmonic IP	dBm	+42		
VSWR Input / Output (max)		1.2:1 / 1.2:1	1.5:1 / 1.5:1	1.6:1 / 1.6:1
DC Current @ 15 Volts (max)	mA	24	27	29

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 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	0.173 W
Junction Temperature Rise Above Case T_{jc}	+8°C

* Over temperature performance limits for part number CA5-5, guaranteed from 0°C to +50°C only.

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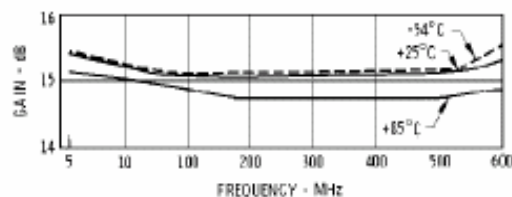
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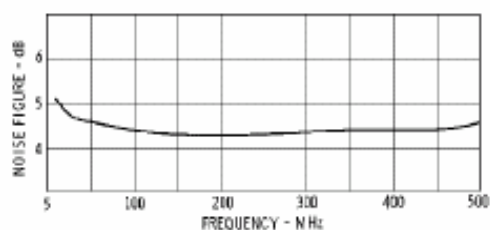
V2

Typical Performance Curves at +25°C

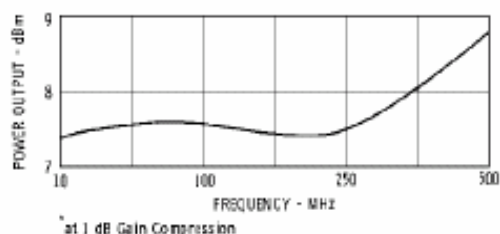
Gain



Noise Figure

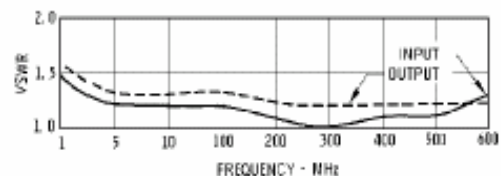


Power Output*

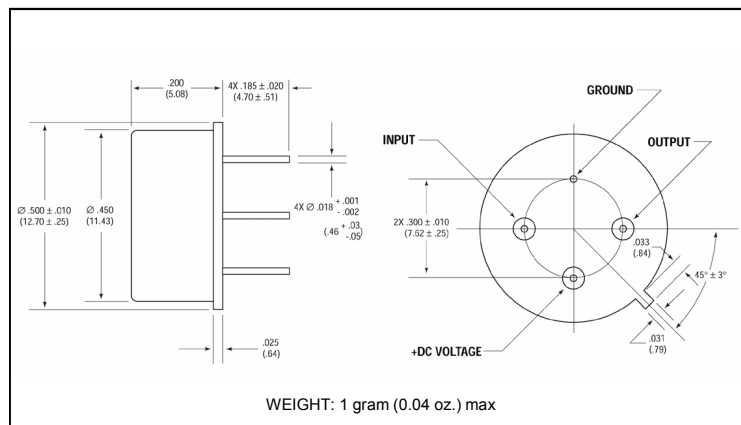


* at 1 dB Gain Compression

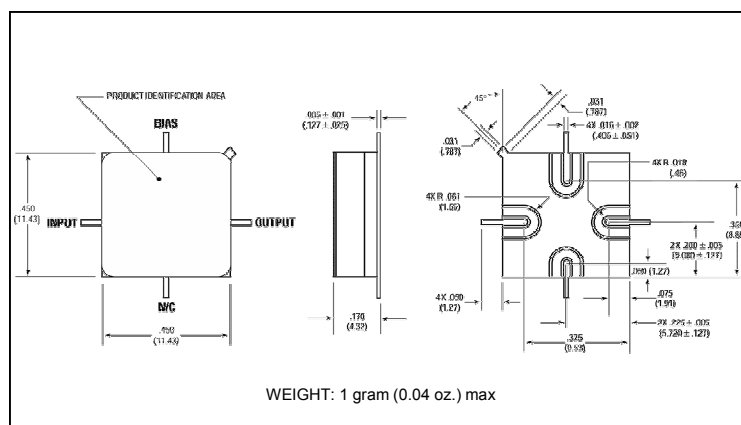
VSWR



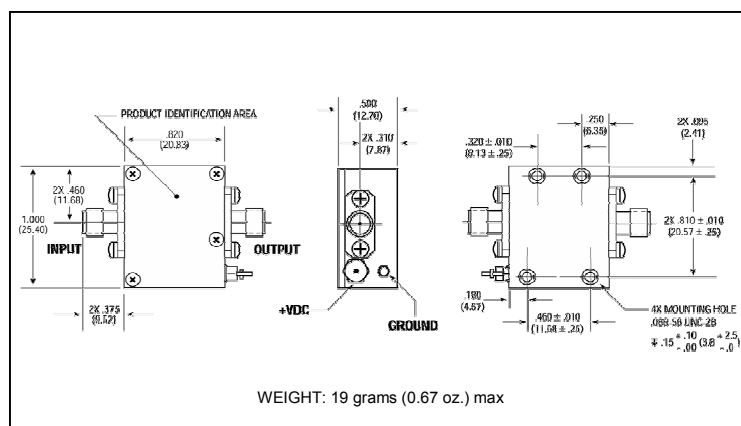
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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