

# Cascadable Amplifier 5 to 500 MHz

Rev. 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 ±.8<sup>o</sup> (TYP.)

#### **Description**

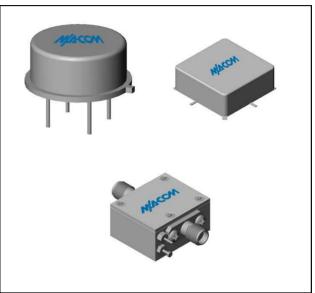
The A5-5 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

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		
MAAM-008714-0SMA55	Surface Mount		
MAAM-008714-00CA55	SMA Connectorized **		

Product Image



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

Parameter	Units	Typical	Guaranteed	
Farameter		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 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>	0.173 W
Junction Temperature Rise Above Case T <sub>jc</sub>	+8°C

<sup>1 \*</sup> Over temperature performance limits for part number CA5-5, guaranteed from 0°C to +50°C only.

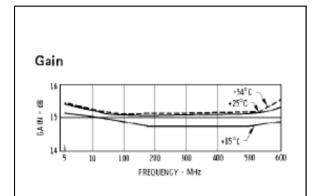
<sup>\*\*</sup> The connectorized version is not RoHs compliant.



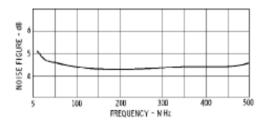
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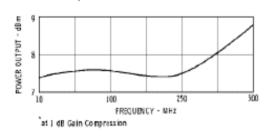
## Typical Performance Curves at +25°C



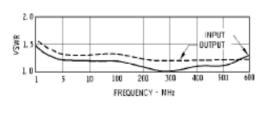
#### Noise Figure



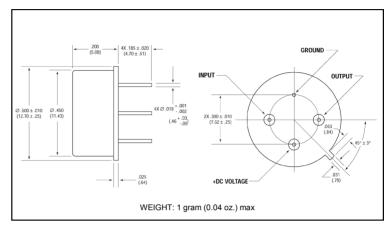
#### Power Output\*



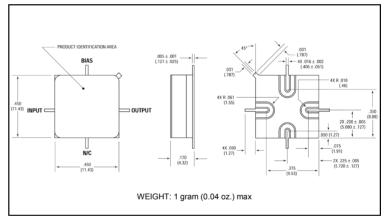
#### VSWR



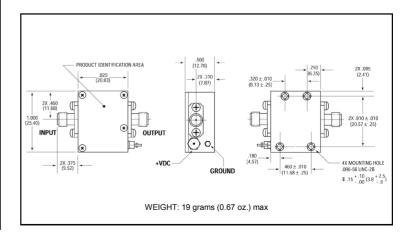
## Outline Drawing: TO-8 \*



## Outline Drawing: Surface Mount \*



## Outline Drawing: SMA Connectorized \*



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

## A5-5 / SMA5-5



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