

Cascadable Amplifier 5 to 600 MHz

Rev. V3

Features

- FLAT BANDWIDTH: ± 2 dB (TYP.)
- LOW VSWR: 1.3:1 (TYP.)
- WIDE POWER SUPPLY RANGE: +8 to +15 VOLTS

Description

The A5-6 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

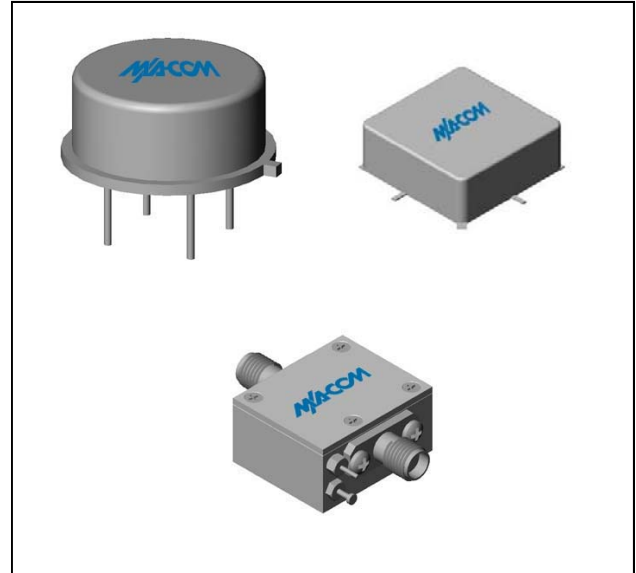
This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Both TO-8 and Surface Mount packages are Hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package
A5-6	TO-8
SMA5-6	Surface Mount
CA5-6	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	1-700	6-600	6-600
Small Signal Gain (min)	dB	16.0	15.0	14.5
Gain Flatness (max)	dB	± 0.2	± 0.7	± 0.7
Reverse Isolation	dB	20		
Noise Figure (max)	dB	4.5	5.5	6.0
Power Output @ 1 dB comp. (min)	dBm	8.5	7.0	6.5
IP3	dBm	+21		
IP2	dBm	+38		
Second Order Harmonic IP	dBm	+42		
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	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}	170°C/W
Transistor Power Dissipation P_d	0.184 W
Junction Temperature Rise Above Case T_{jc}	+31°C

* Over temperature performance limits for part number CA5-6, guaranteed from 0°C to +50°C only.

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

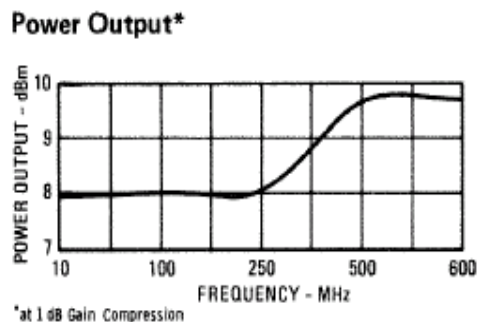
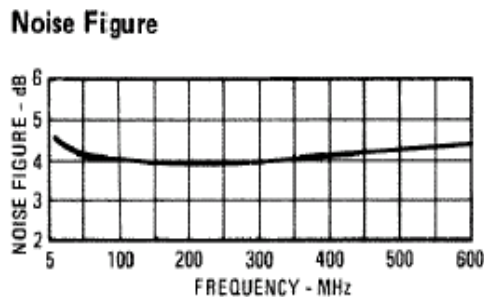
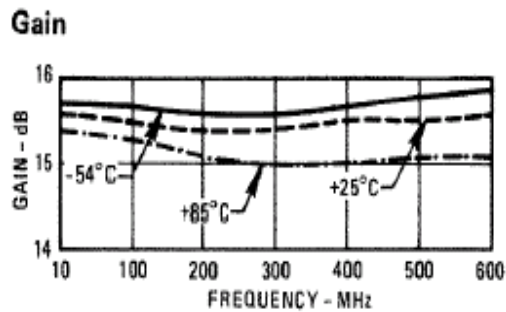
• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
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 Visit www.macomtech.com for additional data sheets and product information.

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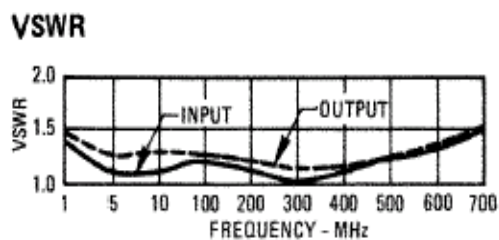
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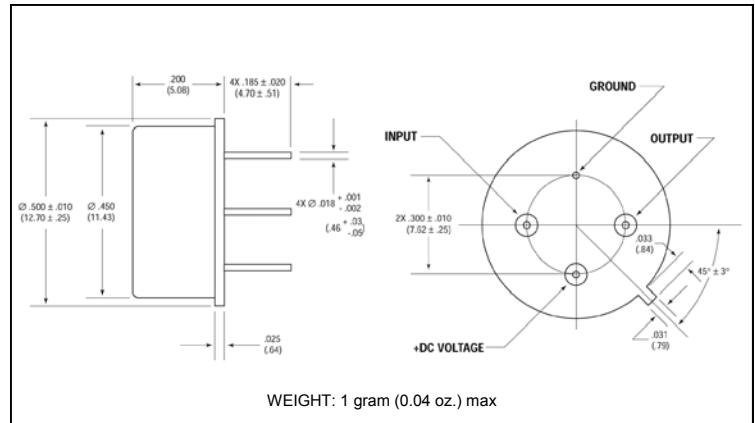
Typical Performance Curves at +25°C



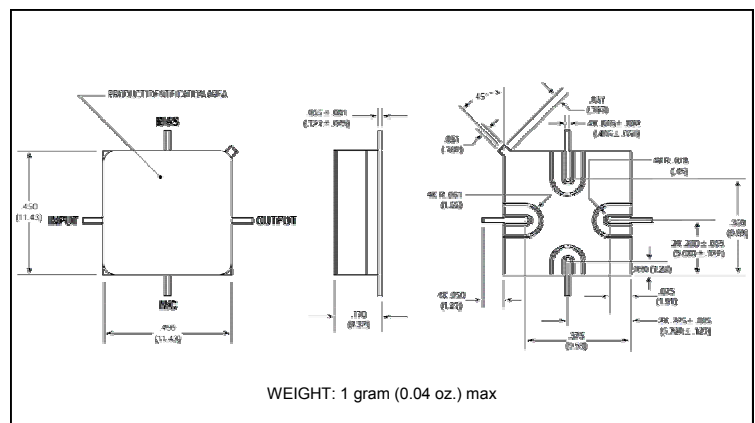
*at 1 dB Gain Compression



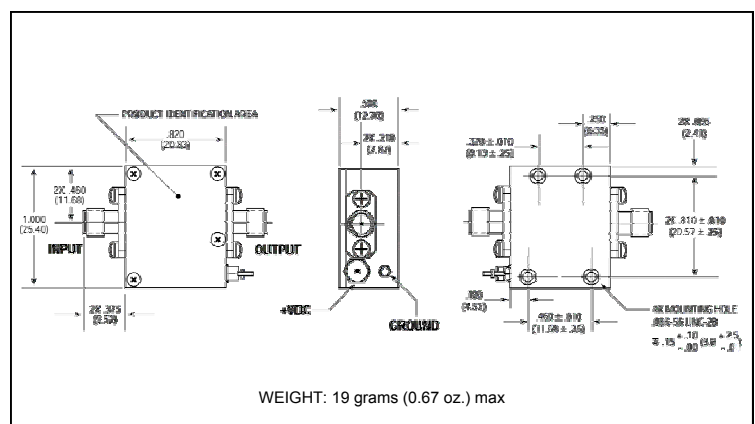
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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