

Cascadable Amplifier 10 to 500 MHz

Rev. V1

Features

- HIGH GAIN: 27.5 dB (TYP.)
- LOW NOISE: 3.5 dB (TYP.)
- HIGH OUTPUT POWER: +22 dBm (TYP.)

Description

The A515 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

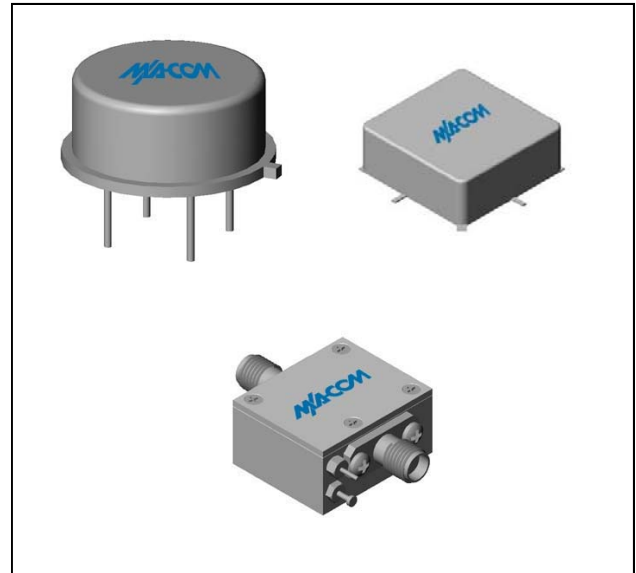
This 2 stage bipolar transistor feedback amplifier design displays impressive performance characteristics over a broadband frequency range. An active DC biasing network insures temperature-stable performance.

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

Ordering Information

Part Number	Package
A515	TO-8
SMA515	Surface Mount
CA515	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	3-600	5-500	5-500
Small Signal Gain (min)	dB	27.5	26.5	26.0
Gain Flatness (max)	dB	±0.3	±0.5	±0.8
Reverse Isolation	dB	36		
Noise Figure (max)	dB	3.5	4.5	5.0
Power Output @ 1 dB comp. (min)	dBm	22.0	20.5	20.0
IP3	dBm	+33		
IP2	dBm	+44		
Second Order Harmonic IP	dBm	+50		
VSWR Input / Output (max)		1.4:1 / 1.4:1	1.7:1 / 1.7:1	1.8:1 / 1.8:1
DC Current @ 15 Volts (max)	mA	127	135	140

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+110°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 θ_{jc}	150°C/W
Transistor Power Dissipation P_d	0.36W
Junction Temperature Rise Above Case T_{jc}	+55°C

* Over temperature performance limits for part number CA515, 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.

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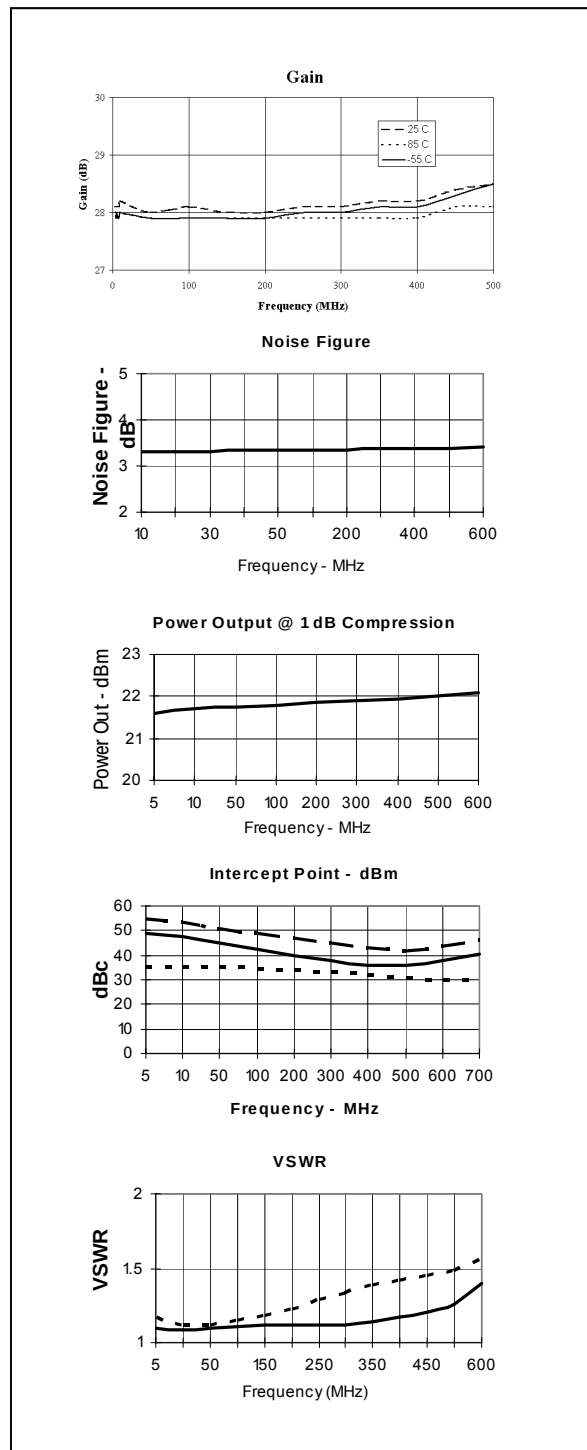
Visit www.macomtech.com for additional data sheets and product information.

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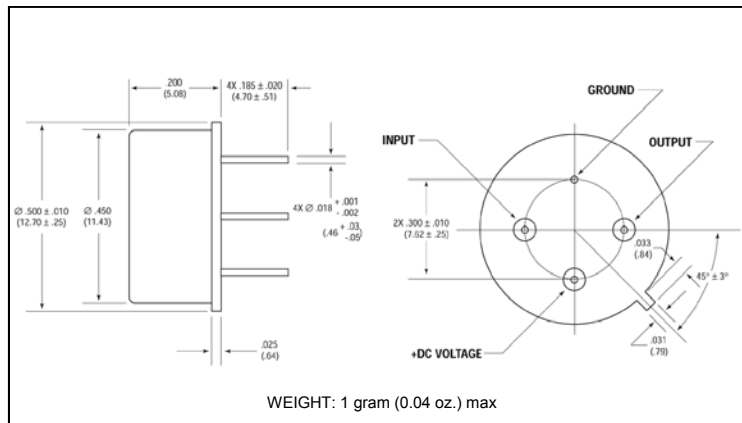
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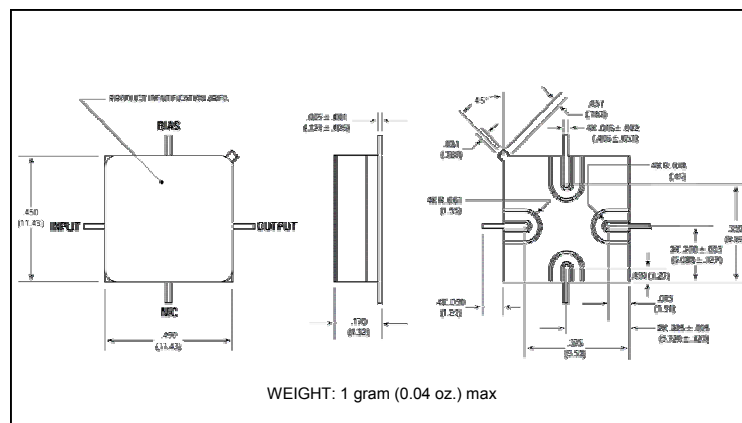
Typical Performance Curves @ +25°C



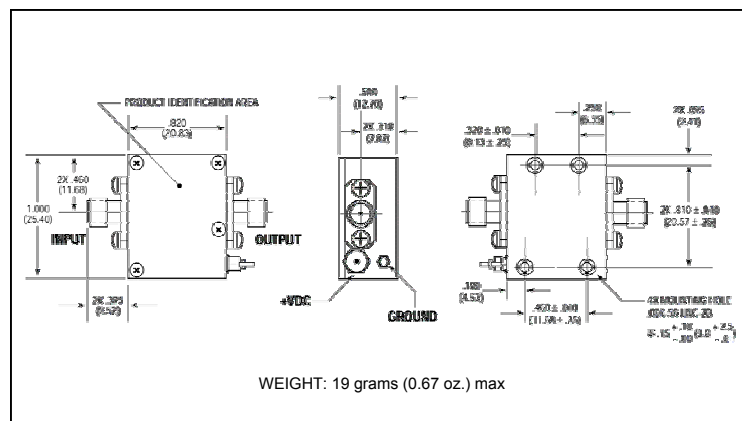
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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