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TECHNOLOGY GROUP

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A515 / SMA515

Cascadable Amplifier
10 to 500 MHz

Rev. V1

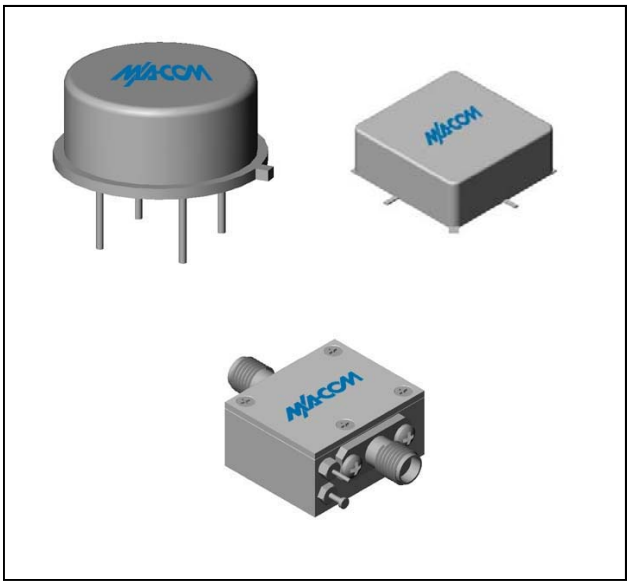
Features

- 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.

Product Image



Ordering Information

Part Number	Package
A515	TO-8
SMA515	Surface Mount
CA515	SMA Connectorized

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

Parameter	Units	Typical	Guaranteed	
		25ºC	0º to 50ºC	-54º to +85ºC*
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	-62ºC to +125ºC
Case Temperature	+110ºC
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)	+125ºC

Thermal Data: $V_{CC} = +15\ V_{DC}$

Parameter	Rating
Thermal Resistance θ_{jc}	150ºC/W
Transistor Power Dissipation P_d	0.36W
Junction Temperature Rise Above Case T_{jc}	+55ºC

* Over temperature performance limits for part number CA515, guaranteed from 0°C to +50°C only.

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- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
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Visit www.macomtech.com for additional data sheets and product information.

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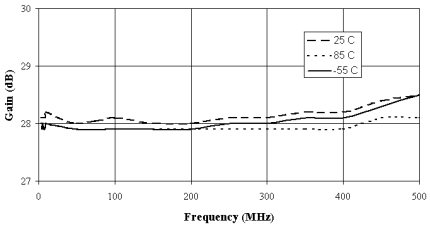
A515 / SMA515

Cascadable Amplifier
10 to 500 MHz

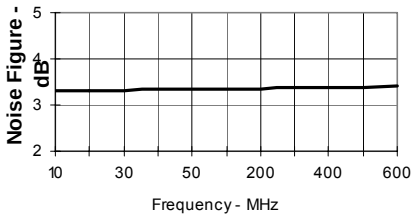
Rev. V1

Typical Performance Curves @ +25°C

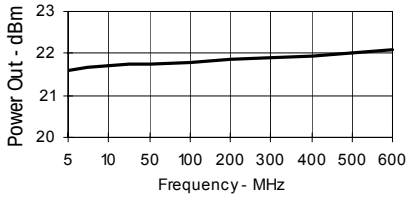
Gain



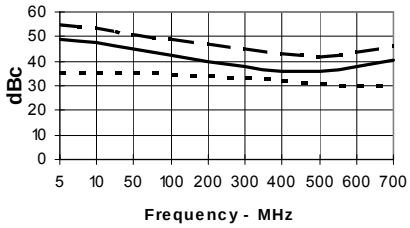
Noise Figure



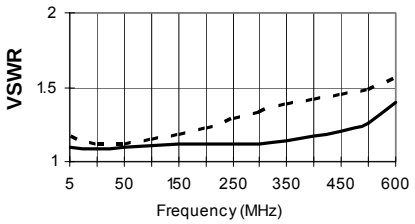
Power Output @ 1dB Compression



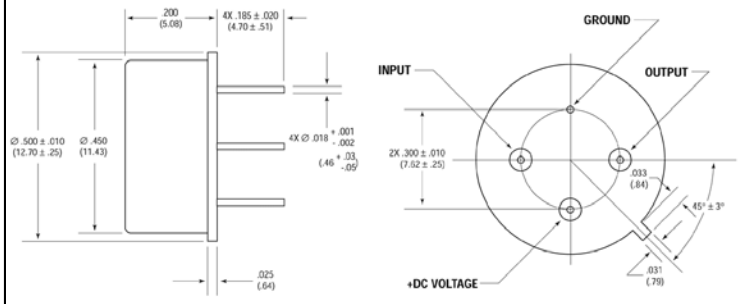
Intercept Point - dBm



VSWR

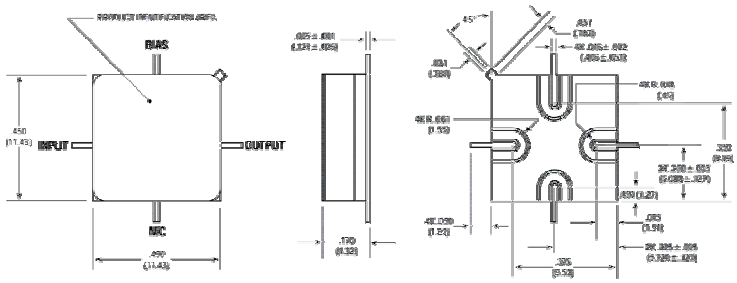


Outline Drawing: TO-8 *



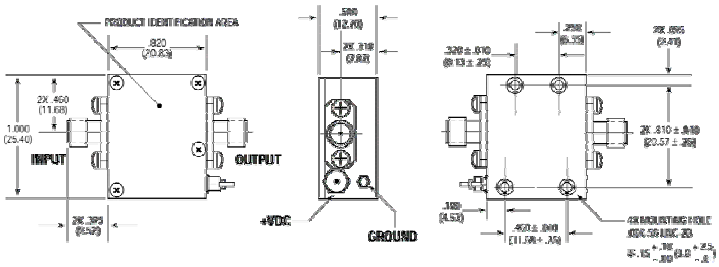
WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: Surface Mount *



WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: SMA Connectorized *



WEIGHT: 19 grams (0.67 oz.) max

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

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