

Cascadable Amplifier 5 to 1000 MHz

Rev. V3

Features

LOW NOISE: 3.0 dB (TYP.)

MEDIUM THIRD ORDER I.P.: +15 dBm (TYP.)

HIGH GAIN: 16 dB (TYP.)

Description

The A63 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance

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

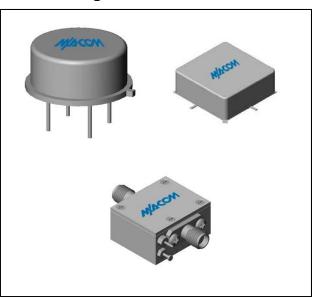
Part Number	Package
A63	TO-8
SMA63	Surface Mount
CA63 **	SMA Connectorized

** The connectorized version is not RoHs compliant.

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

Parameter	Units	Typical	Guaranteed	
		25°C	0º to 50°C	-54º to +85ºC*
Frequency	MHz	1-1100	5-1000	5-1000
Small Signal Gain (min)	dB	16.0	15.0	14.5
Gain Flatness (max)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	20		
Noise Figure (max)	dB	3.0	4.0	4.5
Power Output @ 1 dB comp. (min)	dBm	4.0	2.0	1.5
IP3	dBm	+15		
IP2	dBm	+20		
Second Order Harmonic IP	dBm	+25		
VSWR Input / Output (max)		1.4:1 / 1.4:1	1.9:1 / 1.9:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	14	16	18

Product Image



Absolute Maximum Ratings

Parameter	Absolute Maximum	
Storage Temperature	-62°C to +125°C	
Case Temperature	+125°C	
DC Voltage	+18 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}	170°C/W
Transistor Power Dissipation P _d	0.092 W
Junction Temperature Rise Above Case T _{jc}	16°C

^{*} Over temperature performance limits for part number CA63, guaranteed from 0°C to +50°C only.

Commitment to produce in volume is not guaranteed.

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.

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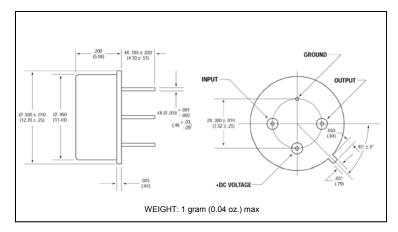
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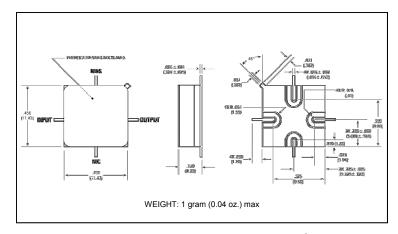
Typical Performance Curves at +25°C

Gair Noise Figure Power Output* COUTPUT FREQUENCY - MHz Second Order Two Tone Intercept Point 400 500 600 FREQUENCY - MHz 100 509 800 900 700 Third Order Two Tone Intercept Point 톺 17 INTERCEPT -100 500 430 500 200 900 1000 FREQUENCY - MHz VSWR INPUT/OUTPUT 400 500 600

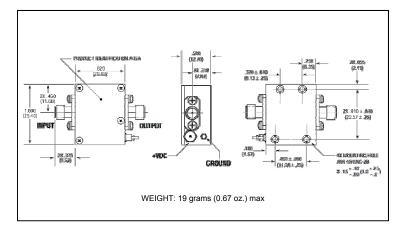
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount



Outline Drawing: SMA Connectorized



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

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