A63 / SMA63

Cascadable Amplifier
5 to 1000 MHz

Rev. V3

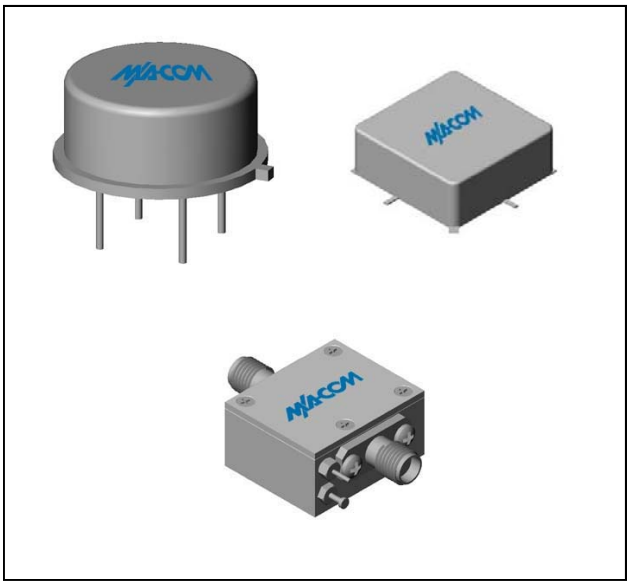
Features

- 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 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.

Product Image



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 = 50Ω, V_{CC} = +15 V_{DC}

Parameter	Units	Typical	Guaranteed	
		25ºC	0º to 50ºC	-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

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

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62ºC to +125ºC
Case Temperature	+125ºC
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)	+125ºC

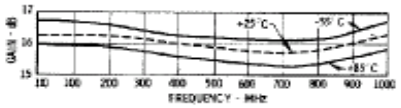
Thermal Data: V_{CC} = +15 V_{DC}

Parameter	Rating
Thermal Resistance θ_{jc}	170ºC/W
Transistor Power Dissipation P_d	0.092 W
Junction Temperature Rise Above Case T_{jc}	16ºC

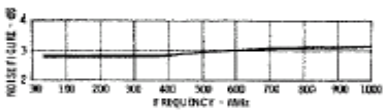
• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
• **India** Tel: +91.80.4155721 • **China** Tel: +86.21.2407.1588
Visit www.macomtech.com for additional data sheets and product information.

Typical Performance Curves at +25°C

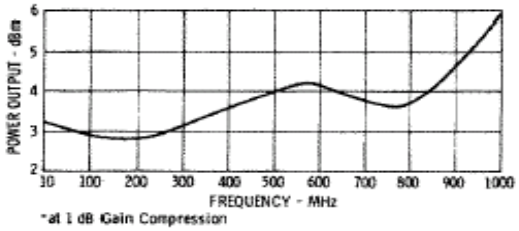
Gain



Noise Figure

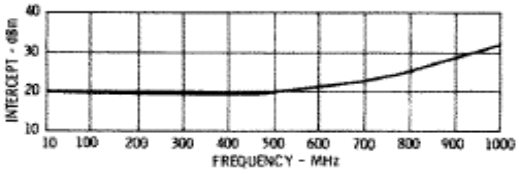


Power Output*

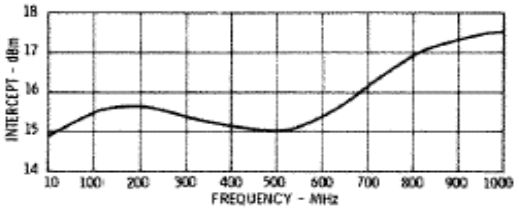


*at 1 dB Gain Compression

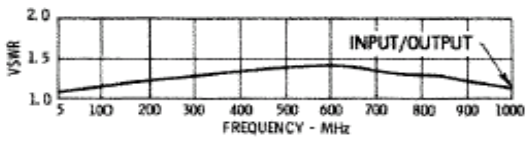
Second Order Two Tone Intercept Point



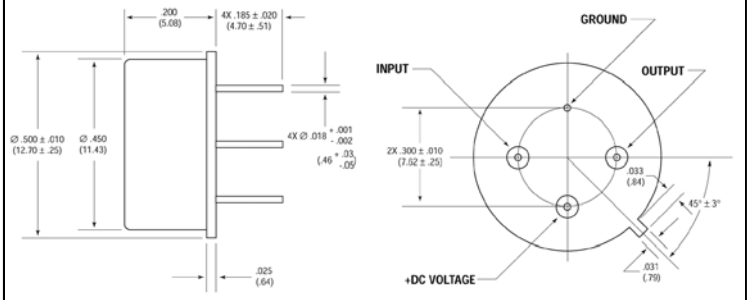
Third Order Two Tone Intercept Point



VSWR

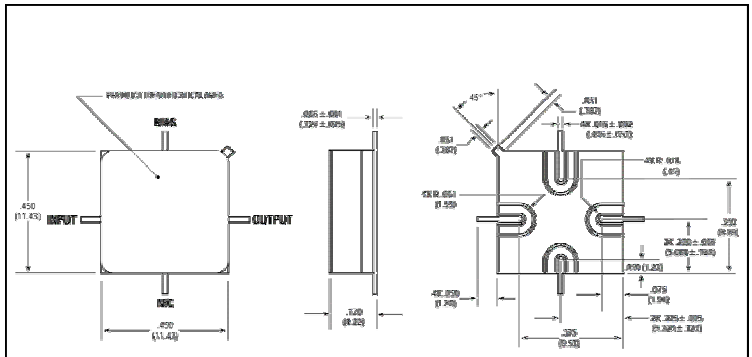


Outline Drawing: TO-8 *



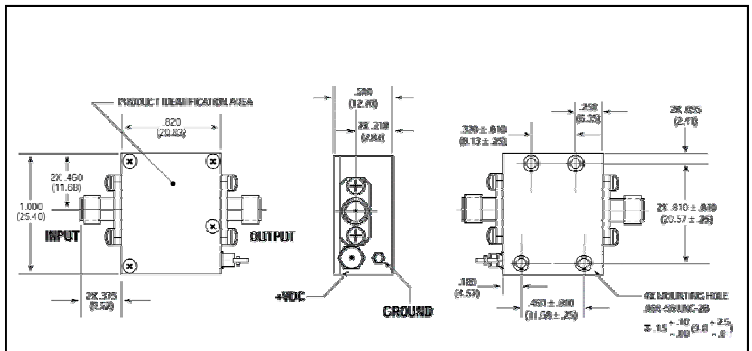
WEIGHT: 1 gram (0.04 oz.) max

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.