

# Cascadable Amplifier 10 to 1500 MHz

Rev. V3

#### **Features**

HIGH OUTPUT POWER: +22 dBm (TYP.)
 HIGH THIRD ORDER I.P.: +32 dBm (TYP.)

#### Description

The A29-1 RF amplifier is a discrete thin film hybrid design, which incorporates the use of 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. An active DC biasing network is used for temperature-stable performance, in addition to an RF Choke, used for power supply decoupling.

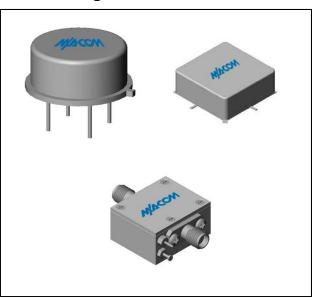
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

### **Ordering Information**

Part Number	Package		
A29-1	TO-8		
SMA29-1	Surface Mount		
CA29-1	SMA Connectorized **		

<sup>\*\*</sup> 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	0º to 50ºC	-54º to +85ºC*
Frequency	MHz	10-1600	10-1500	10-1500
Small Signal Gain (min)	dB	9.0	8.5	7.5
Gain Flatness (max)	dB	±0.2	±0.5	±1.0
Reverse Isolation	dB	14		
Noise Figure (max)	dB	5.5	6.5	7.0
Power Output @ 1 dB comp. (min)	dBm	22.0	20.0	19.0
IP3	dBm	+32		
IP2	dBm	+49		
Second Order Harmonic IP	dBm	+57		
VSWR Input / Output (max)		1.6:1 / 1.6:1	1.9:1 / 1.9:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	90	94	99

## **Absolute Maximum Ratings**

Parameter	Absolute Maximum	
Storage Temperature	-62°C to +125°C	
Case Temperature	+125°C	
DC Voltage	+17 V	
Continuous Input Power	15.5 dBm	
Short Term Input power (1 minute max.)	100 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 $\theta_{jc}$	100°C/W	
Transistor Power Dissipation Pd	0.966 W	
Junction Temperature Rise Above Case T <sub>jc</sub>	+96°C	

<sup>\*</sup> Over temperature performance limits for part number CA29-1, 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

Commitment to produce in volume is not g

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



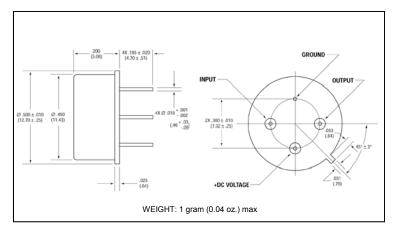
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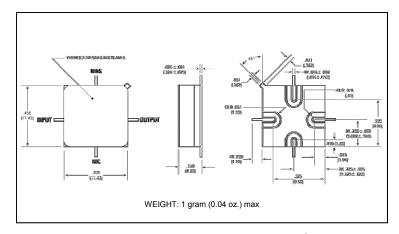
# Typical Performance Curves at +25°C

# Gain 100 500 700 1100 1300 FREQUENCY - MHz Noise Figure 15 VDC 50 500 700 900 1100 1300 1500 Power Output\* PRECIDENCY - Mile \* at 1 dB Gain Compression Intercept Point žņa Harmonic +15 vo 3rd ORDER TWO-TONE +12 VDC 1100 1300 1500 700 300 500 FREQUENCY - MHz VSWR INPUT -- ООТРИТ 300 500 700 1100 1300 1500 FREQUENCY - MHz

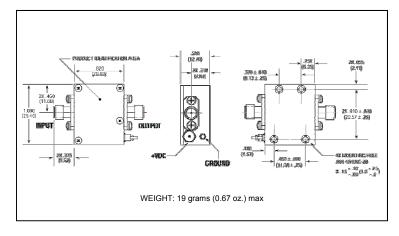
# Outline Drawing: TO-8 \*



# Outline Drawing: Surface Mount



# Outline Drawing: SMA Connectorized \*



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

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