

Cascadable Amplifier 10 to 1500 MHz

Rev. V3

Features

• LOW NOISE: 3.5 dB (TYP.)

HIGH EFFICIENCY: 27 mA (TYP.) @ +5 Vdc
 GOOD DYNAMIC RANGE: 105 dB (TYP.)

LOW VSWR: <1.4:1 (TYP.)

Description

The A28-2 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.

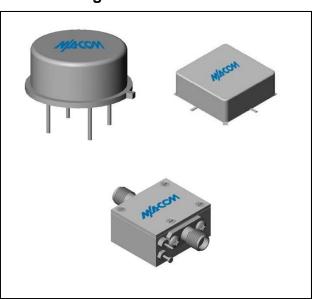
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package	
A28-2	TO-8	
SMA28-2	Surface Mount	
CA28-2	SMA Connectorized **	

^{**} The connectorized version is not RoHs compliant.

Product Image



Electrical Specifications: $Z_0 = 50\Omega$, $V_{CC} = +5 V_{DC}$

Parameter	Units	Typical	Guaranteed	
Parameter	Units	25°C	0º to 50°C	-54º to +85ºC*
Frequency	MHz	5-1600	10-1500	10-1500
Small Signal Gain (min)	dB	14.0	13.0	12.5
Gain Flatness (max)	dB	±0.3	±0.5	±1.0
Reverse Isolation	dB	16		
Noise Figure (max)	dB	3.5	4.5	5.0
Power Output @ 1 dB comp. (min)	dBm	10.5	9.5	8.5
IP3	dBm	+24		
IP2	dBm	+34		
Second Order Harmonic IP	dBm	+40		
VSWR Input / Output (max)		1.3:1 / 1.5:1	1.8:1 / 1.9:1	1.9:1 / 2.0:1
DC Current @ 5 Volts (max)	mA	27	30	32

Absolute Maximum Ratings

Parameter	Absolute Maximum	
Storage Temperature	-62°C to +125°C	
Case Temperature	+125°C	
DC Voltage	+8 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: $V_{CC} = +5 V_{DC}$

Parameter	Rating
Thermal Resistance θ_{jc}	160°C/W
Transistor Power Dissipation P _d	0.098 W
Junction Temperature Rise Above Case T _{jc}	+16°C

^{*} Over temperature performance limits for part number CA28-2, 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 gu

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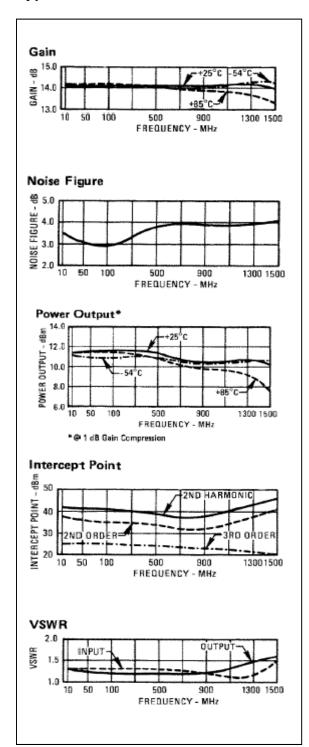
India Tel: +91.80.4155721
 China Tel: +86.21.2407.1588
 Visit www.macomtech.com for additional data sheets and product information.



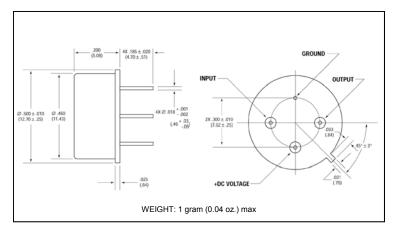
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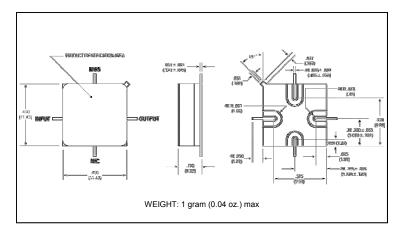
Typical Performance Curves at +25°C



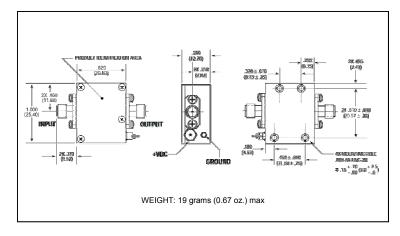
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount



Outline Drawing: SMA Connectorized *



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