

Cascadable Amplifier 5 to 1500 MHz

Rev. V3

Features

- HIGH GAIN - TWO STAGES: 20.0 dB (TYP.)
- ULTRA LOW PHASE DEVIATION FROM LINEARITY: $<\pm 2.5^\circ$, 100-1500 MHz
- LOW VSWR: $<1.4:1$ (TYP.)

Description

The A24 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for consistent performance and high reliability.

This 2 stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. An active DC biasing network insures temperature-stable performance.

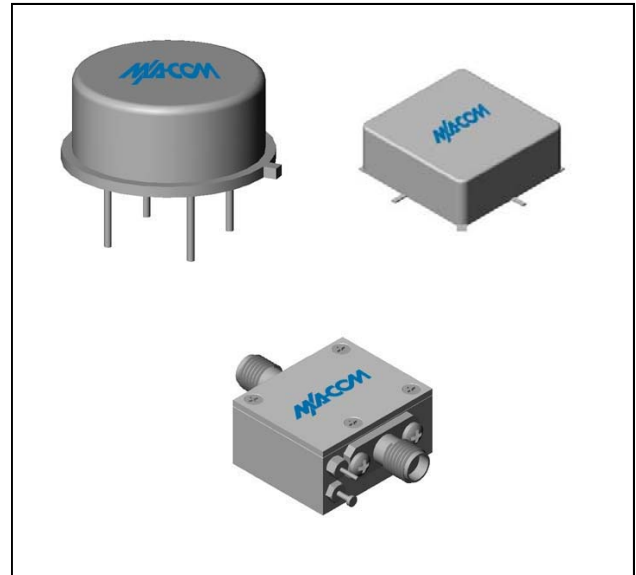
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package
A24	TO-8
SMA24	Surface Mount
CA24	SMA Connectorized **

** 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	0° to 50°C	-54° to +85°C*
Frequency	MHz	2-1700	5-1500	5-1500
Small Signal Gain (min)	dB	20.0	19.0	18.0
Gain Flatness (max)	dB	± 0.4	± 0.8	± 1.0
Reverse Isolation	dB	30		
Noise Figure (max)	dB	4.2	5.3	5.8
Power Output @ 1 dB comp. (min)	dBm	8.0	7.0	6.5
IP3	dBm	+20.5		
IP2	dBm	+42		
Second Order Harmonic IP	dBm	+47		
VSWR Input / Output (max)		1.4:1 / 1.4:1	2.0:1 / 2.0:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	34	38	40

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+20 V
Continuous Input Power	7 dBm
Short Term Input power (1 minute max.)	32 mW
Peak Power (3 μ sec 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}	141°C/W
Transistor Power Dissipation P_d	0.185 W
Junction Temperature Rise Above Case T_{jc}	+26°C

* Over temperature performance limits for part number CA24, guaranteed from 0°C to +50°C only.

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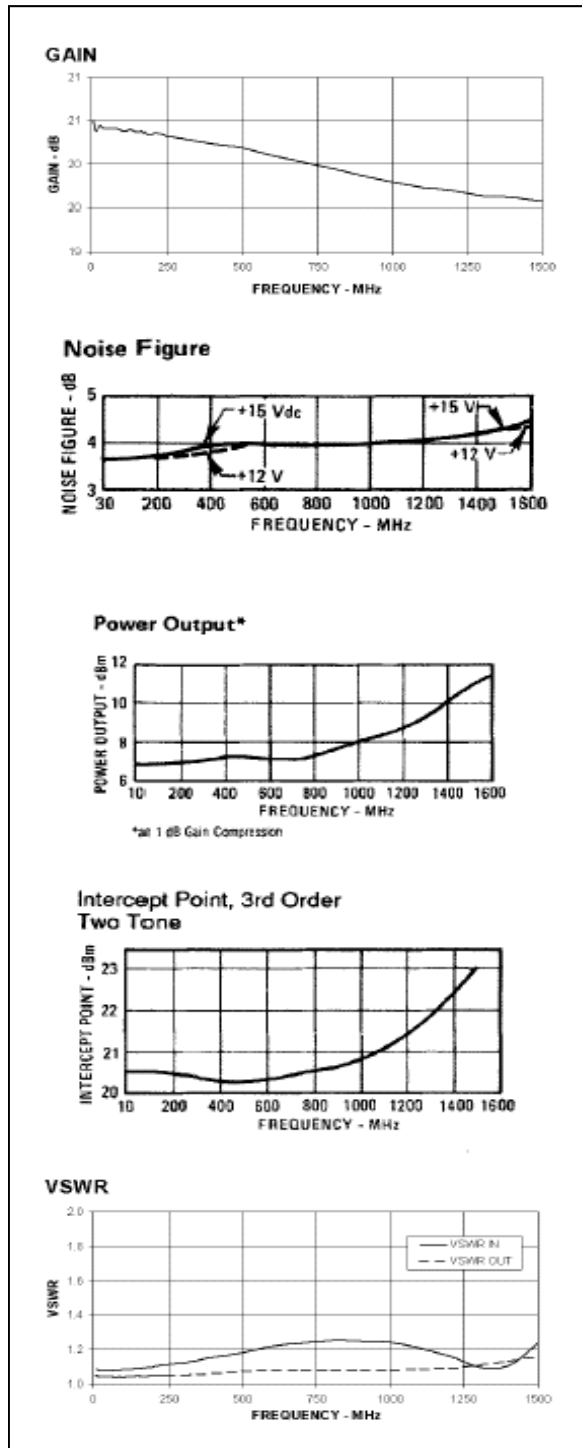
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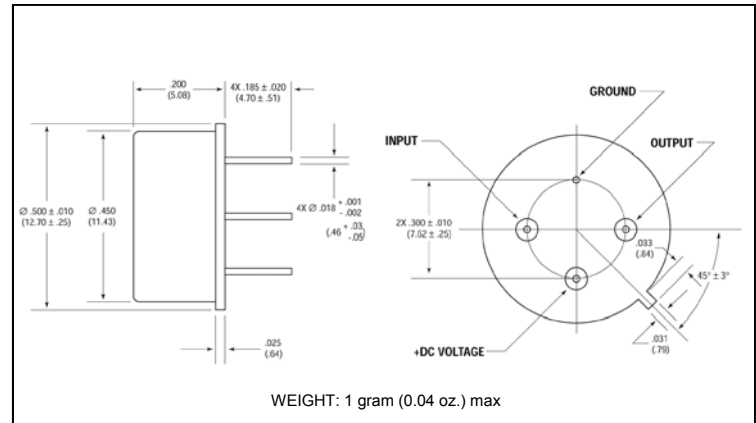
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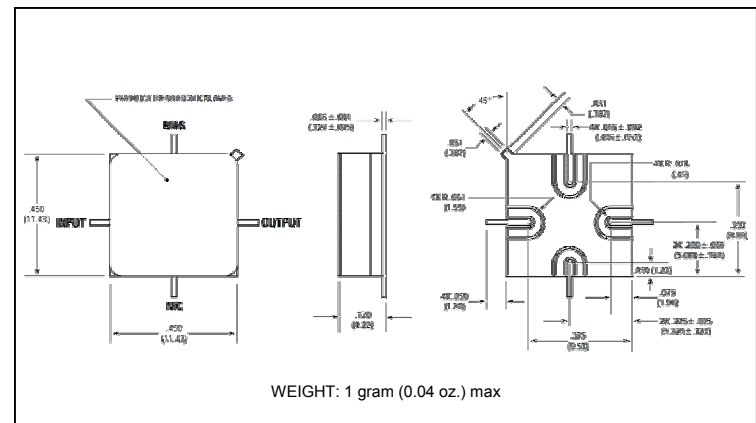
Typical Performance Curves at +25°C



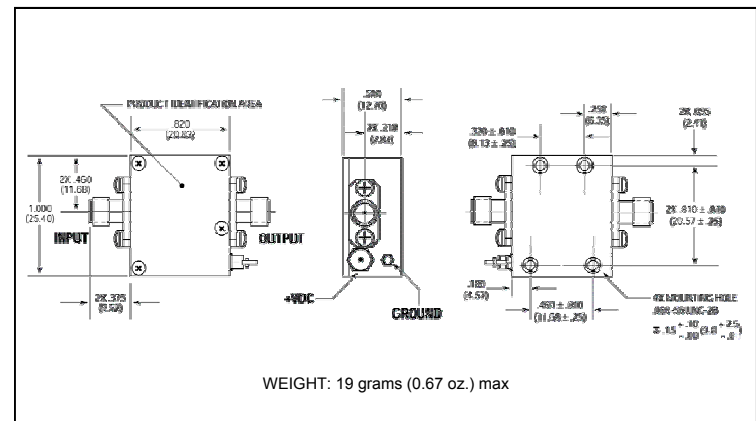
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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

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