tyco Electronics

M/A-COM

Cascadable Amplifier
5 to 1500 MHz

A24/ SMA24
V3

Features

- HIGH GAIN - TWO STAGES: 20.0 dB (TYP.)
- ULTRA LOW PHASE DEVIATION FROM LINEARITY: <± 2.5^{O}, 100-1500 MHz
- LOW VSWR:<1.4:1 (TYP.)

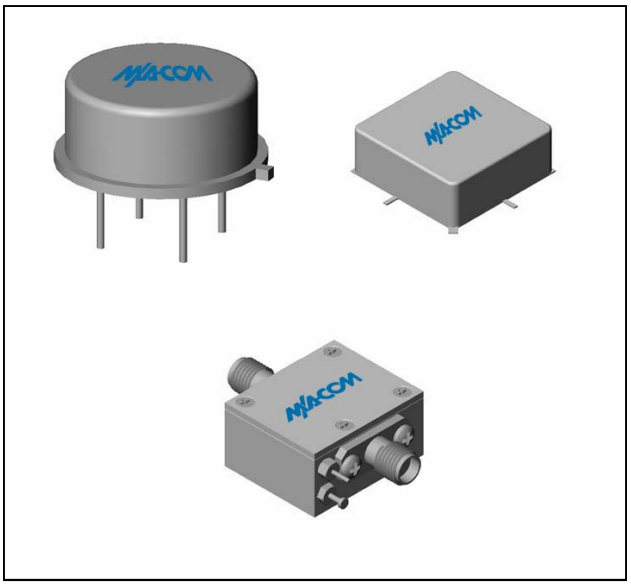
Description

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

Product Image



Ordering Information

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

Electrical Specifications: Z_0 = 50Ω, V_{CC} = +15 V_{DC}

Parameter	Units	Typical	Guaranteed	
		25ºC	0º to 50ºC	-54º to +85ºC*
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	-62ºC to +125ºC
Case Temperature	+125ºC
DC Voltage	+20 V
Continuous Input Power	7 dBm
Short Term Input power (1 minute max.)	32 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}	141ºC/W
Transistor Power Dissipation P_d	0.185 W
Junction Temperature Rise Above Case T_{jc}	+26ºC

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

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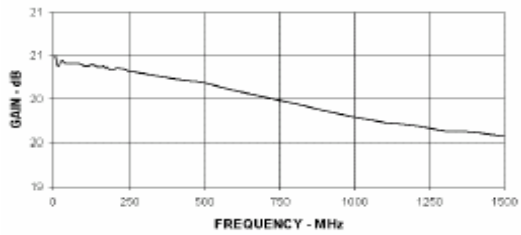
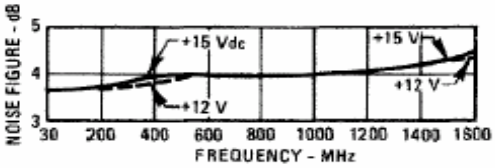
Typical Performance Curves at +25°C

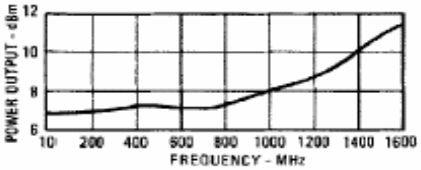
GAIN



Noise Figure

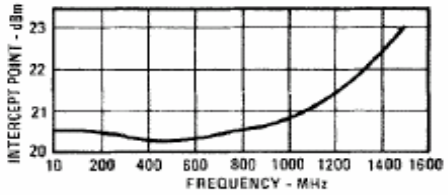


Power Output*

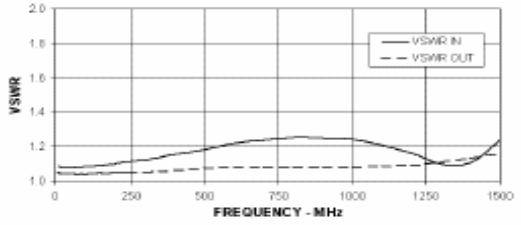


*at 1 dB Gain Compression

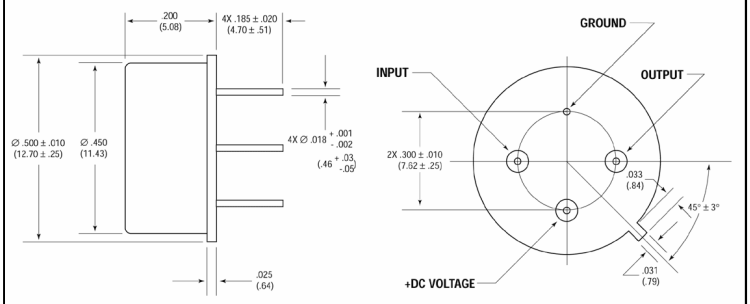
Intercept Point, 3rd Order
Two Tone



VSWR

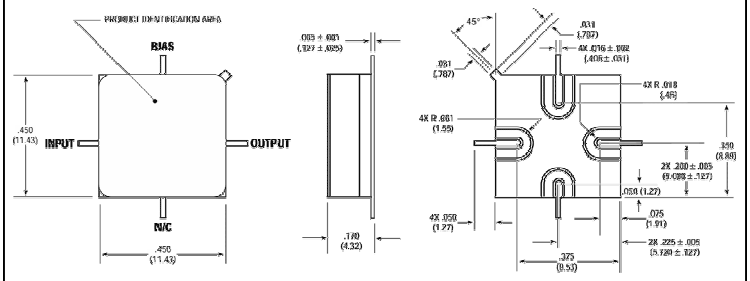


Outline Drawing: TO-8 *



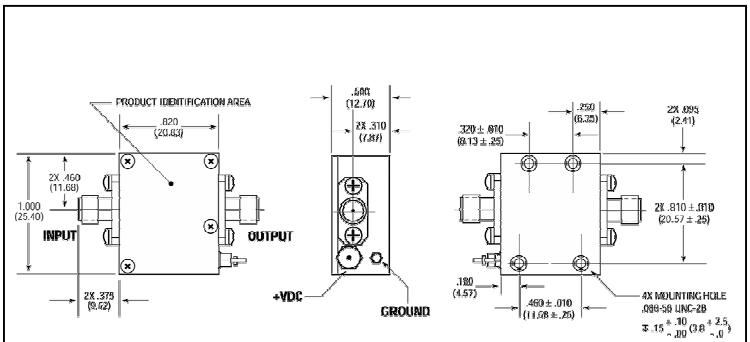
WEIGHT: 1 gram (0.04 oz.) max

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.

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