

## 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	$\pm 0.4$	$\pm 0.8$	$\pm 1.0$
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 $\mu$ sec max.)	0.5 W
"S" Series Burn-In Temperature (case)	+125°C

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

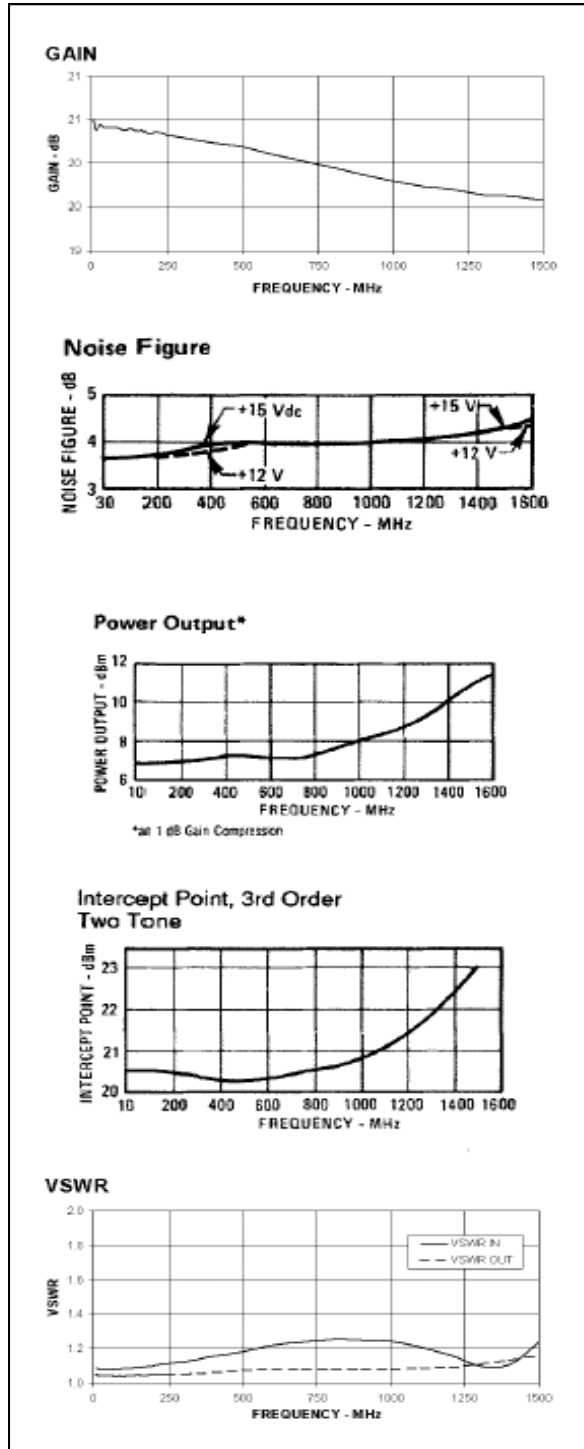
Parameter	Rating
Thermal Resistance $\theta_{jc}$	141°C/W
Transistor Power Dissipation $P_d$	0.185 W
Junction Temperature Rise Above Case $T_{jc}$	+26°C

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

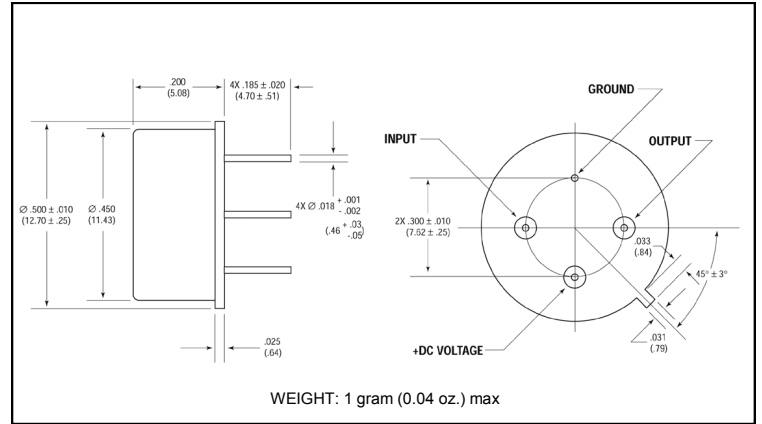
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### Typical Performance Curves at +25°C



### Outline Drawing: TO-8 \*



### Outline Drawing: Surface Mount \*



### Outline Drawing: SMA Connectorized \*



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

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