

## Cascadable Amplifier 5 to 500 MHz

Rev. V3

### Features

- LOW POWER DRAIN 31 mA (TYP.)
- HIGH OUTPUT LEVEL: +12.5 dBm (TYP.)
- HIGH IP3: +28 dBm (TYP.) AT  $V_{CC} = +8$  Vdc

### Description

The A72 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
A72	TO-8
SMA72	Surface Mount
CA72 **	SMA Connectorized

\*\* The connectorized version is not RoHs compliant.

### Product Image



### Electrical Specifications: $Z_0 = 50\Omega$ , $V_{CC} = +5$ V<sub>DC</sub>

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
Frequency	MHz	2-700	5-500	5-500
Small Signal Gain (min)	dB	15.0	14.0	13.5
Gain Flatness (max)	dB	±0.2	±0.7	±1.0
Reverse Isolation	dB	20		
Noise Figure (max)	dB	3.3	4.0	4.5
Power Output @ 1 dB comp. (min)	dBm	12.5	11.5	11.0
IP3	dBm	+26		
IP2	dBm	+36		
Second Order Harmonic IP	dBm	+42		
VSWR Input / Output (max)		1.3:1 / 1.3:1	1.7:1 / 1.7:1	1.8:1 / 1.8:1
DC Current @ 5 Volts (max)	mA	31	34	36

### Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	125°C
DC Voltage	+9 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<sub>DC</sub>

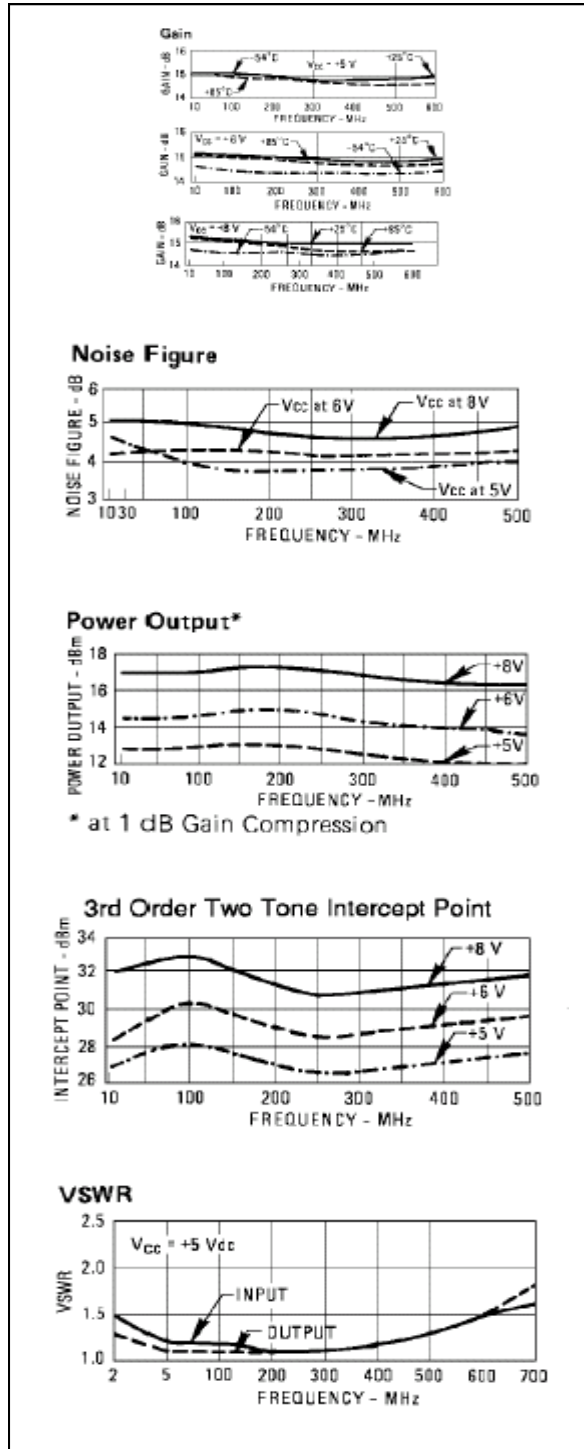
Parameter	Rating
Thermal Resistance $\theta_{jc}$	140°C/W
Transistor Power Dissipation $P_d$	0.126 W
Junction Temperature Rise Above Case $T_{jc}$	18°C

1 \* Over temperature performance limits for part number CA72, guaranteed from 0°C to +50°C only.

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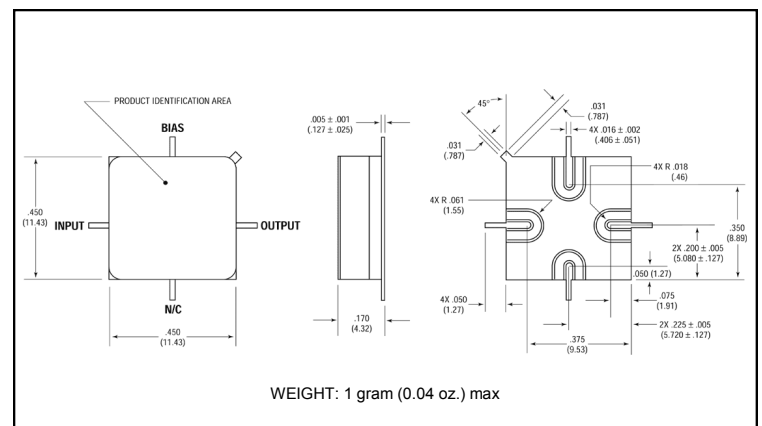
### Typical Performance Curves at +25°C



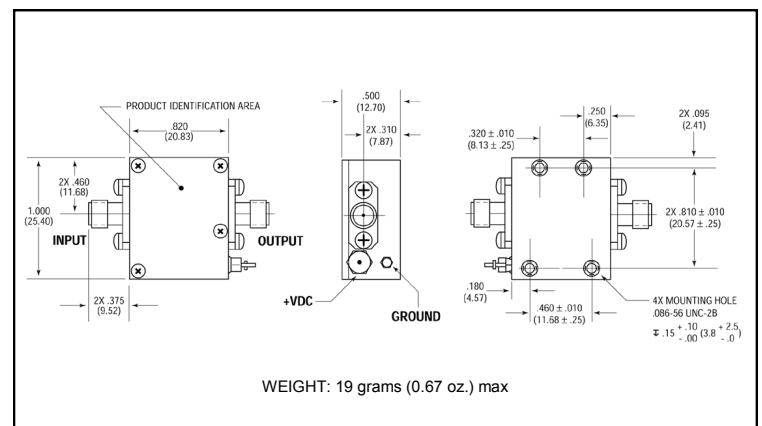
### Outline Drawing: TO-8 \*



### Outline Drawing: Surface Mount \*



### Outline Drawing: SMA Connectorized \*



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