

Cascadable Amplifier 5 to 500 MHz

Rev. V3

Features

- HIGH GAIN - TWO STAGES: 32 dB (TYP.)
- LOW NOISE: 3.5 dB (TYP.)
- THIRD ORDER IP: +15 dBm (TYP.)
- LOW VSWR: <1.4:1 (TYP.)

Description

The A73 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
A73	TO-8
SMA73	Surface Mount
CA73 **	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	1-600	5-500	5-500
Small Signal Gain (min)	dB	32.0	30.0	29.0
Gain Flatness (max)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	37		
Noise Figure (max)	dB	3.5	4.0	4.5
Power Output @ 1 dB comp. (min)	dBm	1.5	1.0	0.5
IP3	dBm	+15		
IP2	dBm	+19.5		
Second Order Harmonic IP	dBm	+26		
VSWR Input / Output (max)		1.4:1 / 1.4:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	20	23	25

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	125°C
DC Voltage	+17 V
Continuous Input Power	+6 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

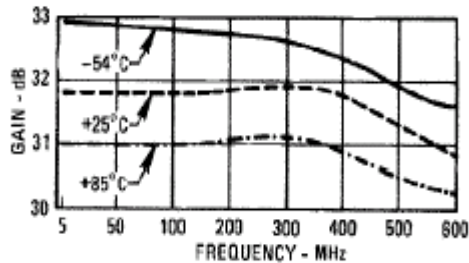
Thermal Data: $V_{CC} = +15 V_{DC}$

Parameter	Rating
Thermal Resistance θ_{jc}	171°C/W
Transistor Power Dissipation P_d	0.105 W
Junction Temperature Rise Above Case T_{jc}	18°C

1 * Over temperature performance limits for part number CA73, guaranteed from 0°C to +50°C only.

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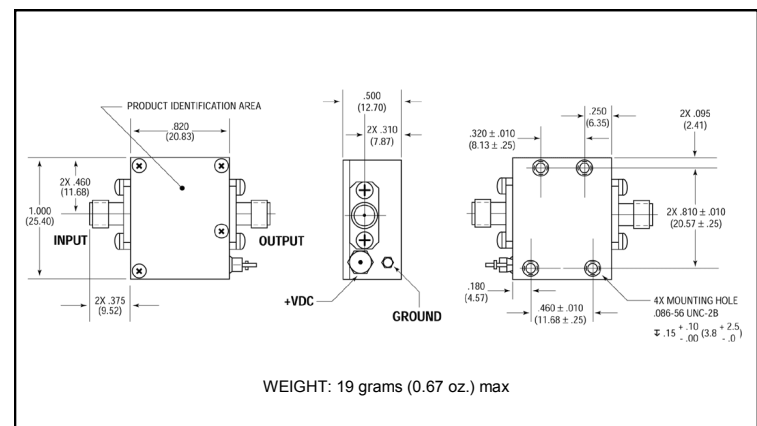
Outline Drawing: TO-8 *



Frequency (MHz)	Noise Figure (dB)
5	3.5
100	3.5
200	3.6
300	3.7
400	3.8
500	4.0

Frequency (MHz)	Power Output (dBm)
5	1.5
50	1.5
100	1.5
200	1.5
300	1.6
400	2.0
500	3.2
600	4.8

The graph plots VSWR on the y-axis (ranging from 1.0 to 2.0) against Frequency in MHz on the x-axis (logarithmic scale from 1 to 600). The 'INPUT' curve (solid line) starts at approximately 1.7 at 1 MHz, drops to a minimum of about 1.1 at 200 MHz, and then rises to about 1.4 at 600 MHz. The 'OUTPUT' curve (dashed line) starts at approximately 1.6 at 1 MHz, remains relatively flat around 1.4 until 400 MHz, and then slightly decreases to about 1.3 at 600 MHz.



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