

Cascadable Amplifier 5 to 500 MHz

Rev. V4

Features

- HIGH GAIN - TWO STAGES: 30.0 dB (TYP.)
- MEDIUM OUTPUT LEVEL: +8.5 dBm (TYP.)
- WIDE POWER SUPPLY RANGE: +8 TO +15 VOLTS
- LOW VSWR: <1.3:1 (TYP.)

Description

The A74 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
A74	TO-8
SMA74	Surface Mount
CA74**	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	30.0	28.0	27.0
Gain Flatness (max)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	40		
Noise Figure (max)	dB	3.0	4.0	4.5
Power Output @ 1 dB comp. (min)	dBm	8.5	7.5	7.0
IP3	dBm	+20		
IP2	dBm	+33		
Second Order Harmonic IP	dBm	+36		
VSWR Input / Output (max)		1.3:1 / 1.3:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	40	42	44

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

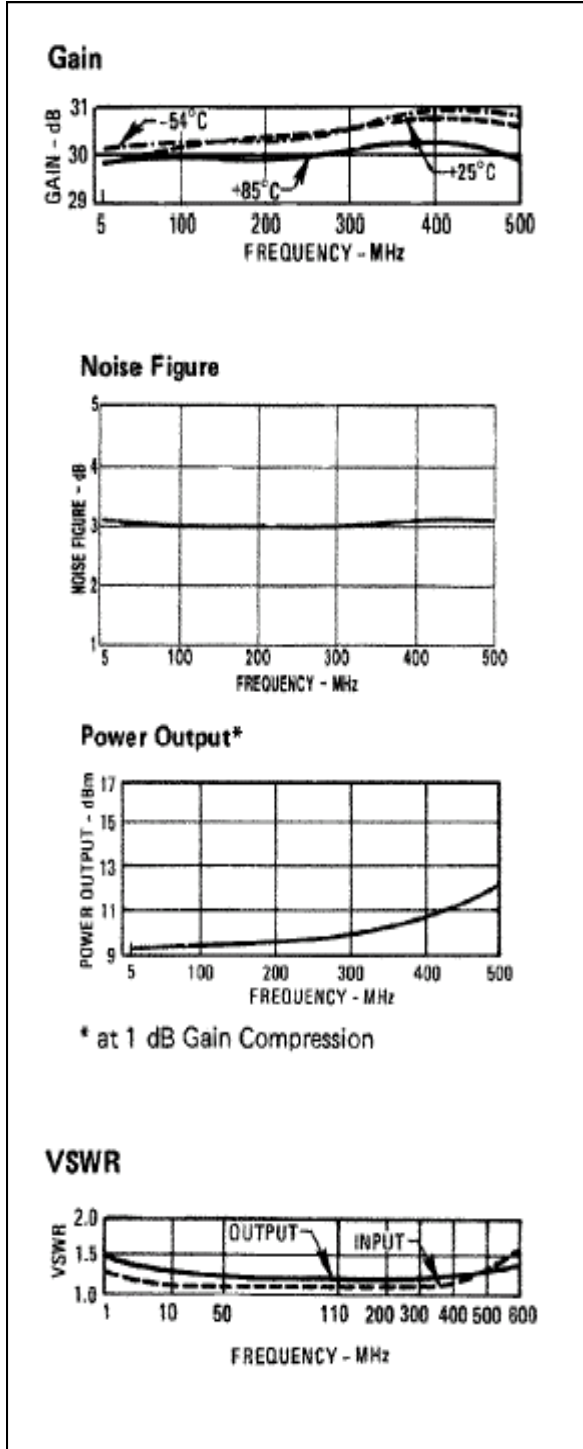
Parameter	Rating
Thermal Resistance θ_{jc}	171°C/W
Transistor Power Dissipation P_d	0.200 W
Junction Temperature Rise Above Case T_{jc}	34°C

1 * Over temperature performance limits for part number CA74, guaranteed from 0°C to +50°C only.

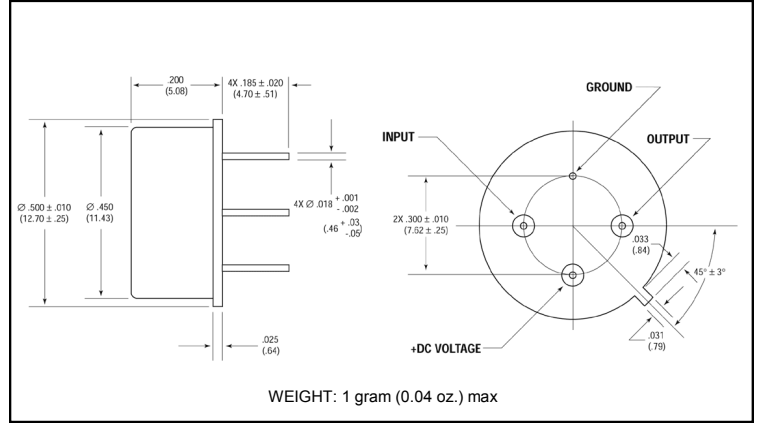
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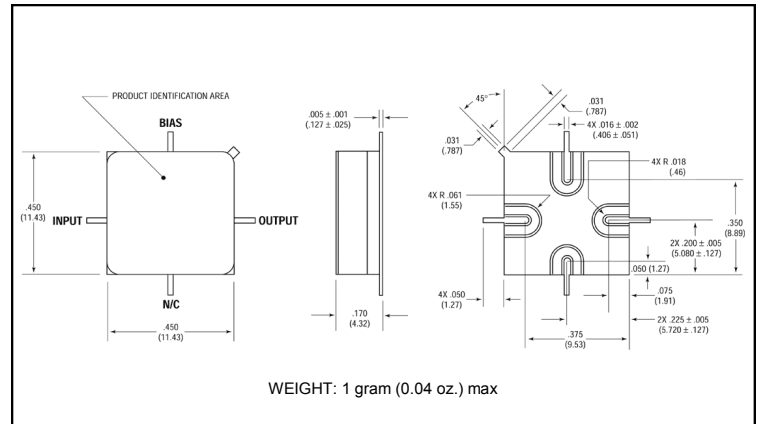
Typical Performance Curves at +25°C



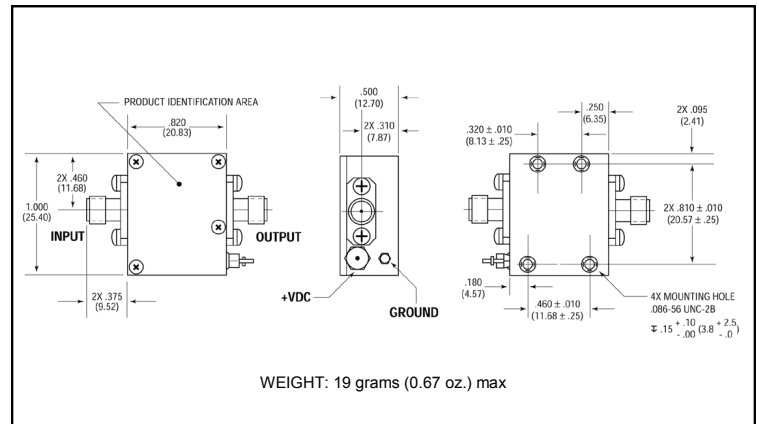
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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

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