

Cascadable Amplifier 20 to 250 MHz

Rev. V3

Features

- HIGH REVERSE ISOLATION: >28.5 dB (TYP.)
- HIGH LEVEL OUTPUT: +20 dBm (TYP.)
- LOW NOISE: 2.8 dB (TYP.)
- HIGH GAIN: 24.5 dB (TYP.)

Description

The A82 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

The 2 stage silicon bipolar feedback amplifier design displays impressive performance over a broadband frequency range. An isolation transformer is used in the feedback loop, with the benefit of high reverse isolation.

Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package
A82	TO-8
SMA82	Surface Mount
CA82**	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	10-300	20-250	20-250
Small Signal Gain (min)	dB	25.0	24.0	23.5
Gain Flatness (max)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	29		
Noise Figure (max)	dB	2.8	3.5	4.0
Power Output @ 1 dB comp. (min)	dBm	20.0	19.0	18.0
IP3	dBm	+31		
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	1.9:1 / 1.9:1
DC Current @ 15 Volts (max)	mA	50	52	54

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+17 V
Continuous Input Power	10 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: $V_{CC} = +15 V_{DC}$

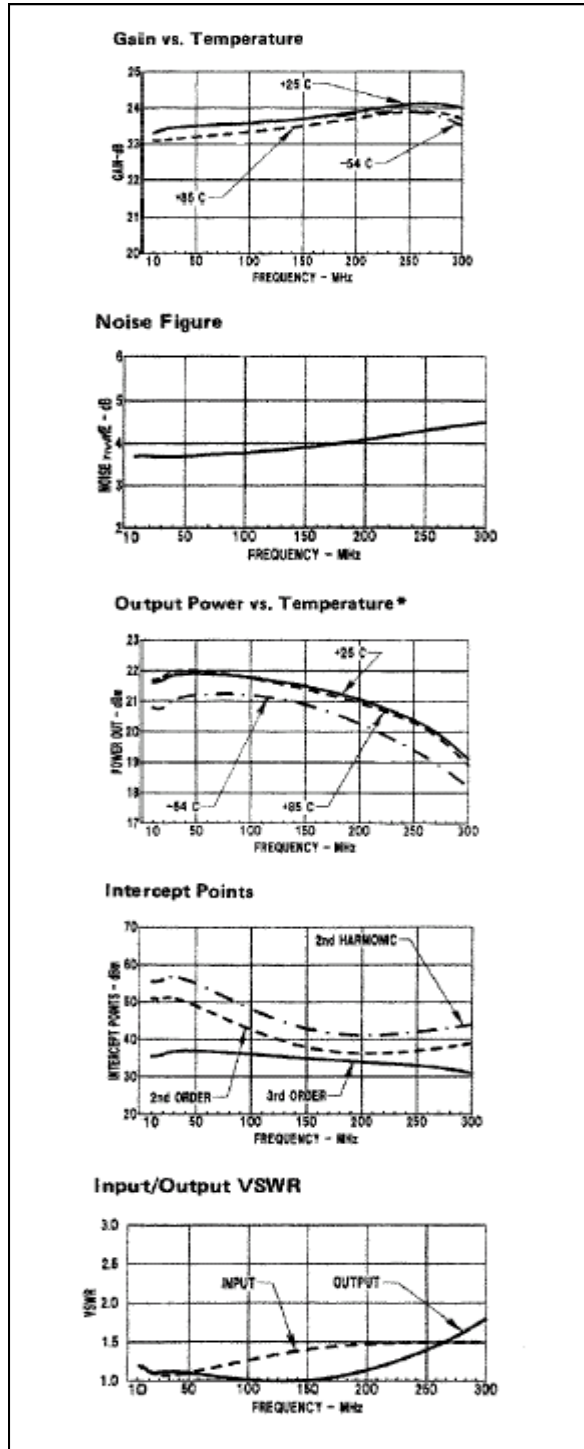
Parameter	Rating
Thermal Resistance θ_{jc}	144°C/W
Transistor Power Dissipation P_d	0.273 W
Junction Temperature Rise Above Case T_{jc}	39°C

1 * Over temperature performance limits for part number CA82, guaranteed from 0°C to +50°C only.

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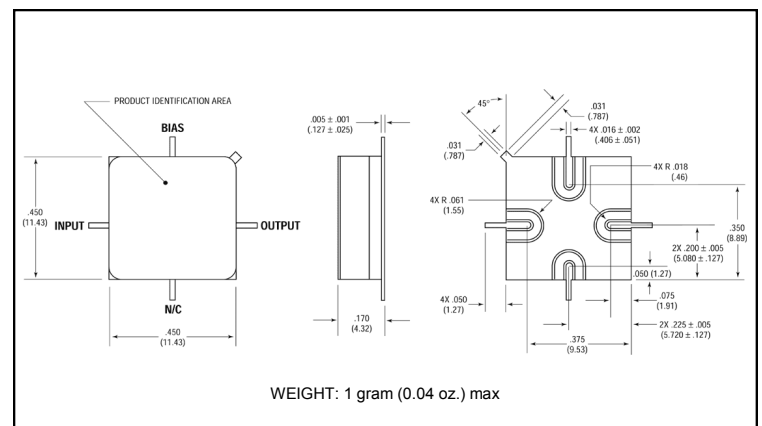
Typical Performance Curves at +25°C



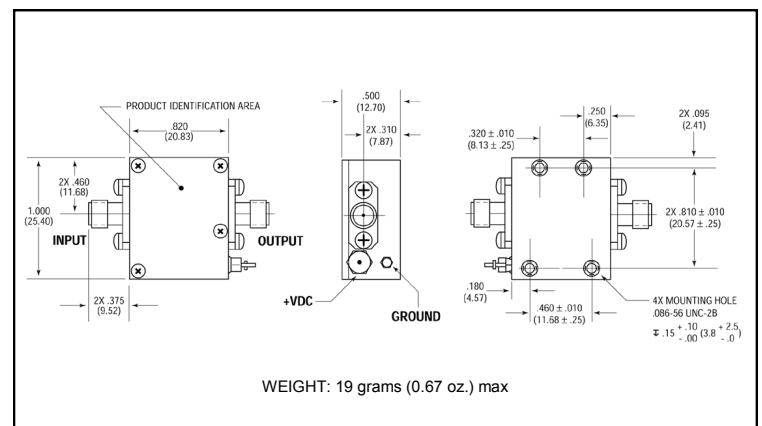
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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