

A82-1 / SMA82-1

Cascadable Amplifier 20 to 250 MHz

Rev. V3

Features

- HIGH REVERSE ISOLATION: >34 dB (TYP.)
- HIGH OUTPUT POWER: +15 dBm (TYP.)
- HIGH GAIN: 19.0 dB (TYP.)
- LOW OUTPUT VSWR: 1.1:1 (TYP.)

Description

The A82-1 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
A82-1	TO-8
SMA82-1	Surface Mount
CA82-1**	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	19.0	17.5	17.0
Gain Flatness (max)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	34		
Noise Figure (max)	dB	2.8	3.5	4.0
Power Output @ 1 dB comp. (min)	dBm	15.0	14.0	13.0
IP3	dBm	+26		
IP2	dBm	+31		
Second Order Harmonic IP	dBm	+36		
VSWR Input / Output (max)		1.4:1 / 1.1:1	1.9:1 / 1.4:1	2.0:1 / 1.5:1
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

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

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

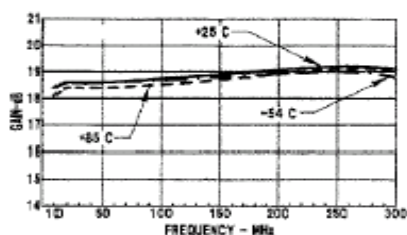
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• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
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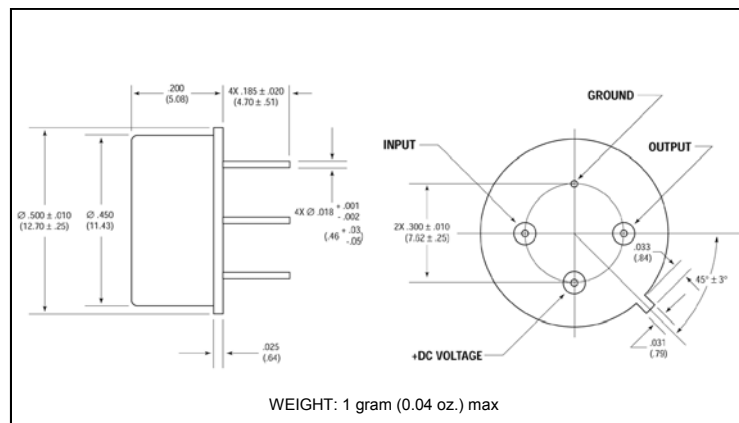
Outline Drawing: TO-8 *



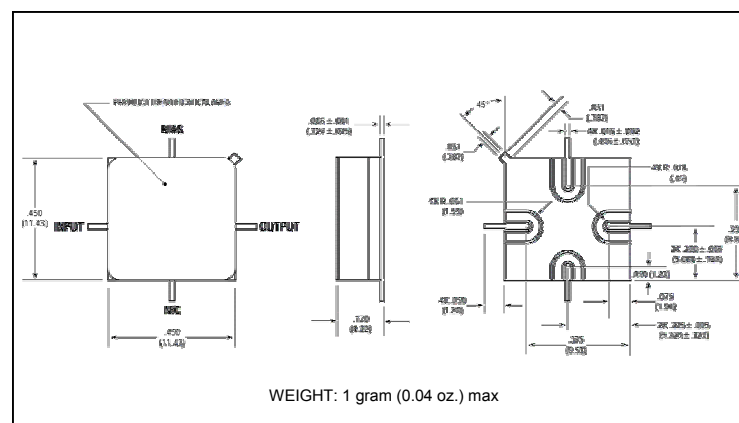
Frequency (MHz)	Noise Figure (dB)
10	3.8
50	3.9
100	4.0
150	4.1
200	4.15
250	4.2
300	4.25

The graph shows the Noise Spectral Density (NSD) in dBm/Hz on the y-axis (ranging from 1.0 to 3.0) versus Frequency in MHz on the x-axis (ranging from 10 to 300). Two curves are plotted: a dashed line for the 'INPUT' and a solid line for the 'OUTPUT'. The input NSD is consistently higher than the output NSD, indicating a noise figure. Both curves show a slight increase in NSD with frequency, with a more pronounced rise above 150 MHz.

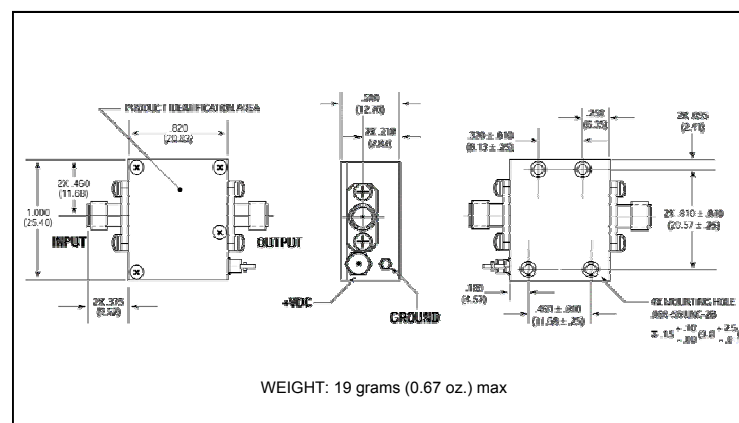
Frequency (MHz)	Input NSD (dBm/Hz)	Output NSD (dBm/Hz)
10	1.1	1.0
50	1.1	1.0
100	1.3	1.1
150	1.5	1.2
200	1.6	1.3
250	1.7	1.4
300	1.5	1.3



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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

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В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

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Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

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Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9