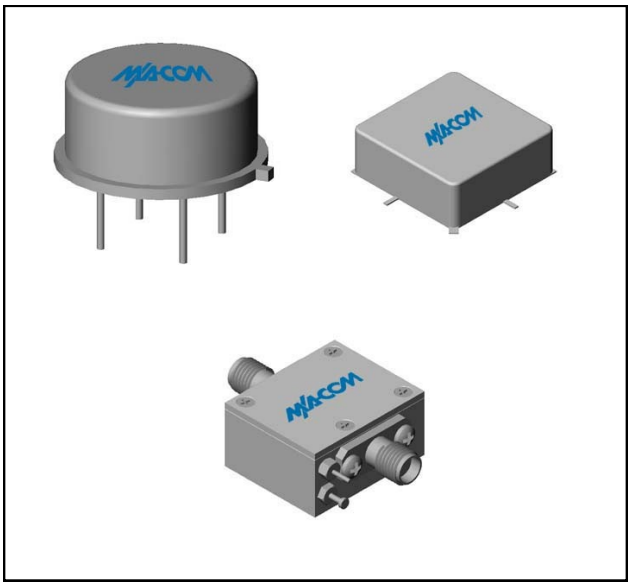
A1021 / SMA1021

Cascadable Amplifier
10 to 1000 MHz

Rev. V3

Features

Product Image



Description

The A1021 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
A1021	TO-8
SMA1021	Surface Mount
CA1021 **	SMA Connectorized

** The connectorized version is not RoHs compliant.

Electrical Specifications: $Z_0 = 50\Omega$, $V_{CC} = +5\ V_{DC}$

Parameter	Units	Typical	Guaranteed	
		25ºC	0º to 50ºC	-54º to +85ºC*
Frequency	MHz	5-1000	10-1000	10-1000
Small Signal Gain (min)	dB	26.0	25.0	24.0
Gain Flatness (max)	dB	±0.5	±0.7	±0.9
Reverse Isolation	dB	35		
Noise Figure (max)	dB	3.8	4.5	5.0
Power Output @ 1 dB comp. (min)	dBm	14.5	14.0	13.0
IP3	dBm	+26		
IP2	dBm	+50		
Second Order Harmonic IP	dBm	+55		
VSWR Input / Output (max)		1.4:1 / 1.3:1	1.9:1 / 1.9:1	2.0:1 / 2.0:1
DC Current @ 5 Volts (max)	mA	60	60	62

Absolute Maximum Ratings

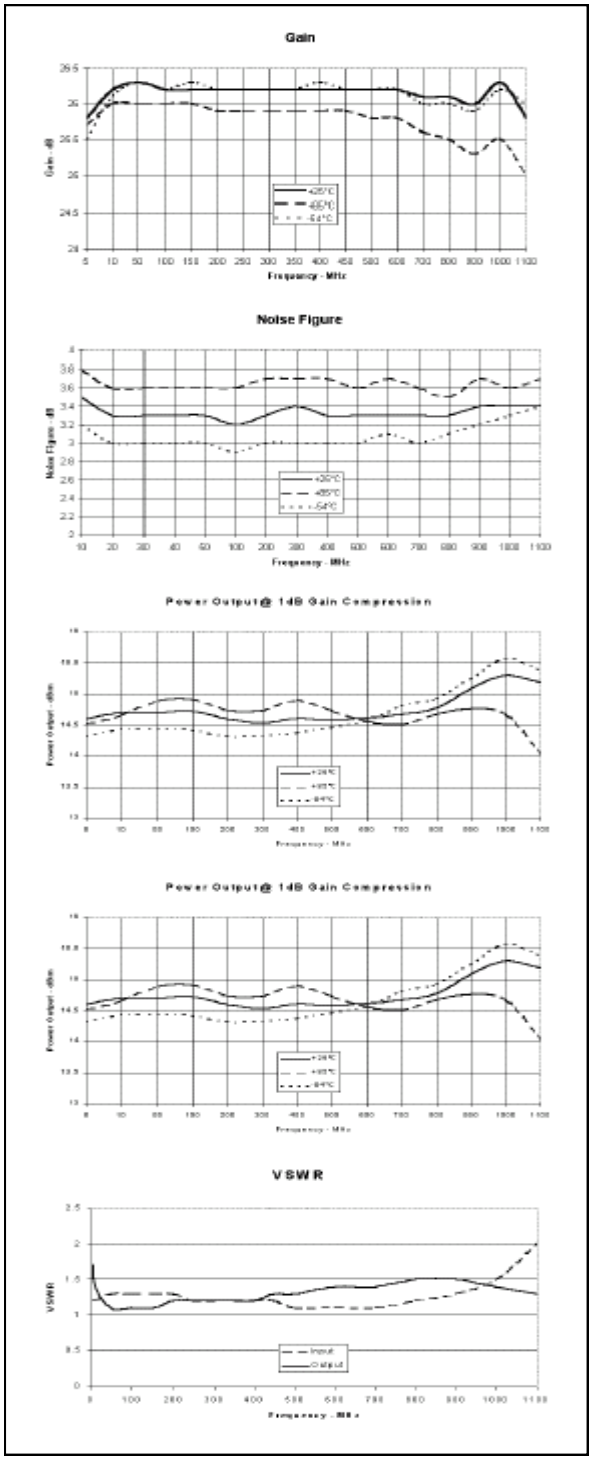
Parameter	Absolute Maximum
Storage Temperature	-62ºC to +150ºC
Case Temperature	125ºC
DC Voltage	+8 V
Continuous Input Power	+10 dBm
Short Term Input power (1 minute max.)	50 mW
Peak Power (3 µsec max.)	0.5 W
"S" Series Burn-In Temperature (case)	125ºC

Thermal Data: $V_{CC} = +5\ V_{DC}$

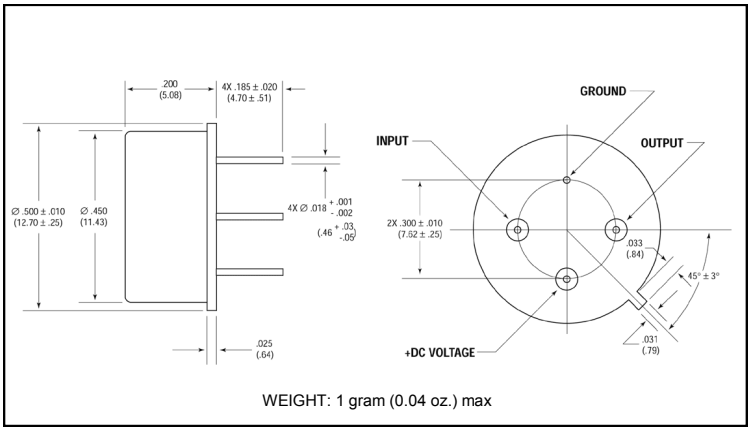
Parameter	Rating
Thermal Resistance θ_{jc}	126ºC/W
Transistor Power Dissipation P_d	0.159W
Junction Temperature Rise Above Case T_{jc}	20ºC

* Over temperature performance limits for part number CA1021, guaranteed from 0°C to +50°C only.

Typical Performance Curves at +25°C

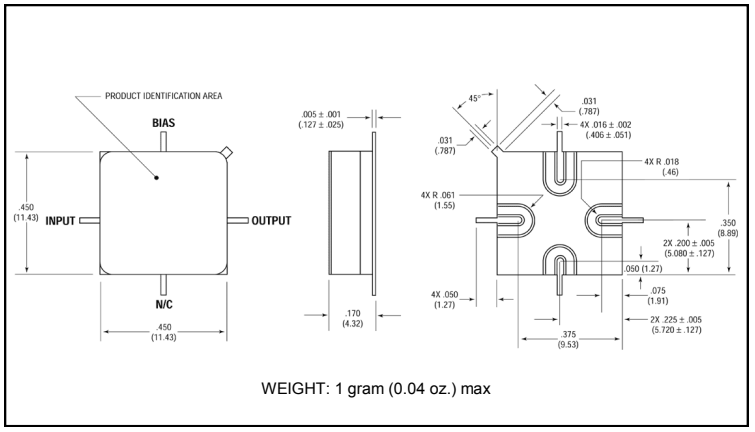


Outline Drawing: TO-8 *



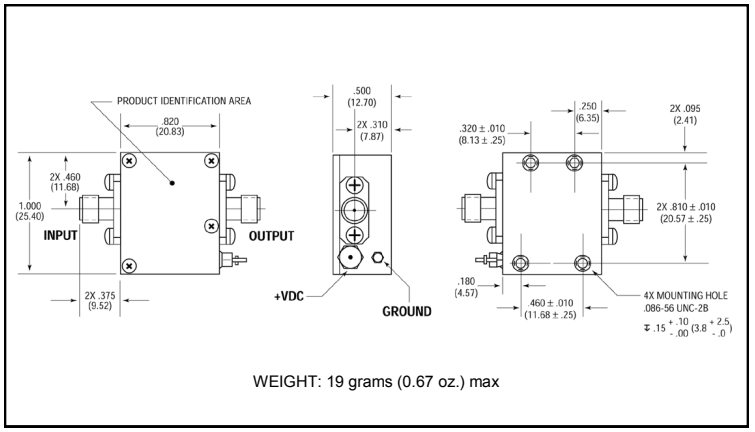
WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: Surface Mount *



WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: SMA Connectorized *



WEIGHT: 19 grams (0.67 oz.) max

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