

**Cascadable Amplifier  
10 to 1000 MHz**

**A1021/ SMA1021**

V3

**Features**

**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.

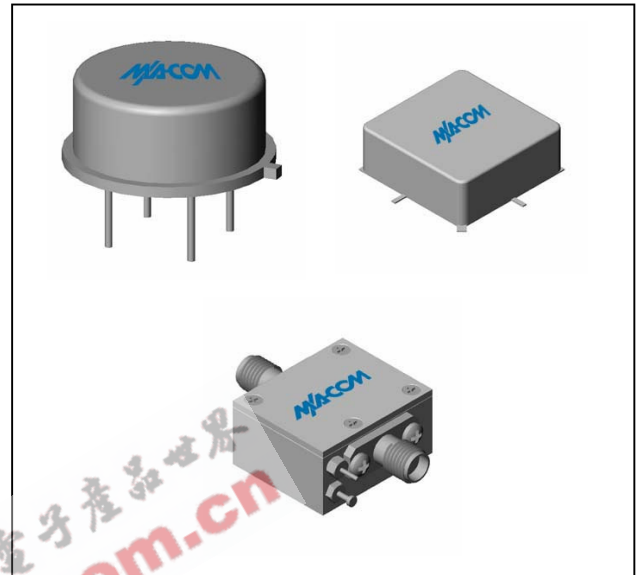
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

**Ordering Information**

Part Number	Package
A1021	TO-8
SMA1021	Surface Mount
CA1021 **	SMA Connectorized

\*\* The connectorized version is not RoHS compliant.

**Product Image**



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

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
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	-62°C to +150°C
Case Temperature	125°C
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)	125°C

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

Parameter	Rating
Thermal Resistance $\theta_{jc}$	126°C/W
Transistor Power Dissipation $P_d$	0.159W
Junction Temperature Rise Above Case $T_{jc}$	20°C

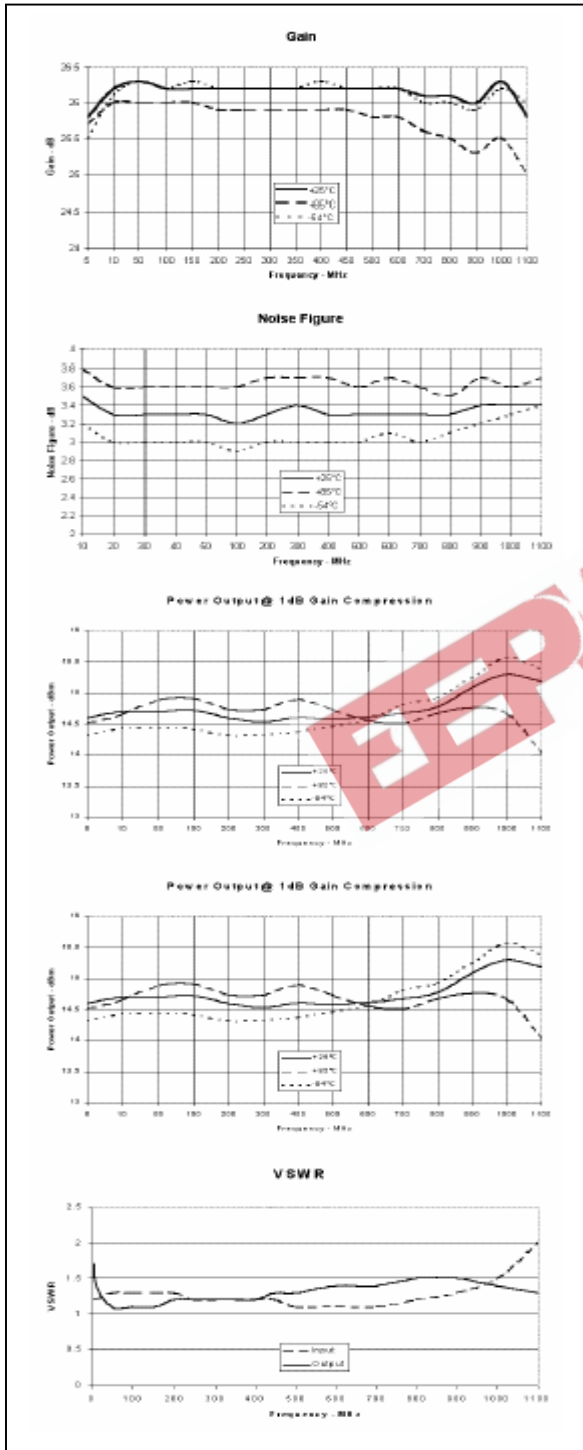
\* Over temperature performance limits for part number CA1021, guaranteed from 0°C to +50°C only.

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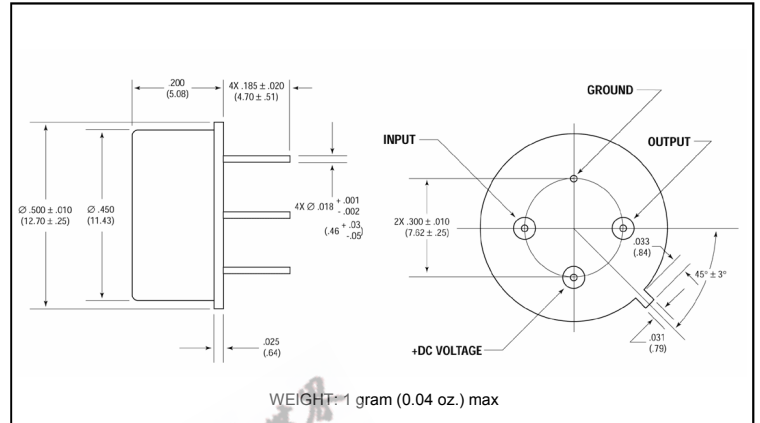
**A1021/ SMA1021**

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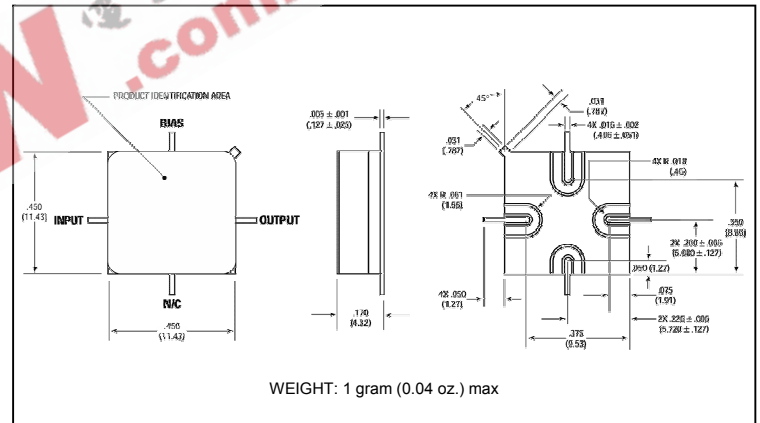
**Typical Performance Curves at +25°C**



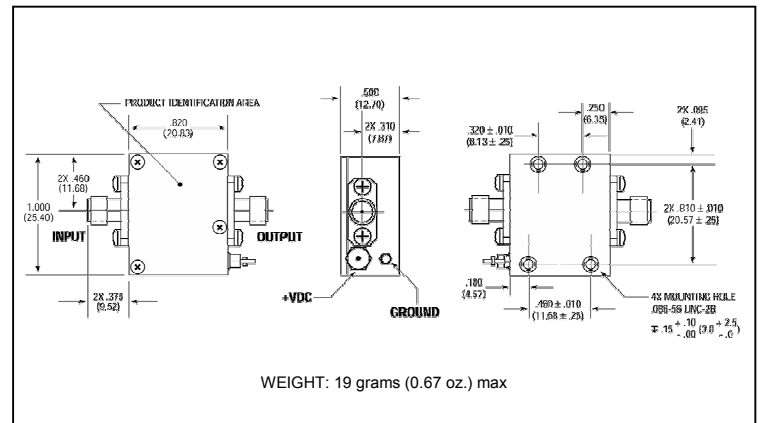
**Outline Drawing: TO-8 \***



**Outline Drawing: Surface Mount \***



**Outline Drawing: SMA Connectorized \***



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