

Cascadable Amplifier 10 - 1000 MHz

Rev. V5

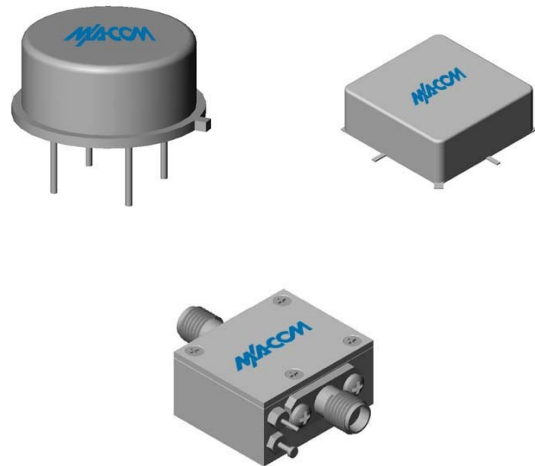
Features

- High Dynamic Range
- High Output Power: +16 dBm
- High IP3: +30 dBm
- Low Noise: 3.8 dB

Description

The A18-1 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability. This single stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range. An RF choke is used for DC power supply decoupling. Both TO-8 and surface mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Product Image



Ordering Information

Part Number	Package
A18-1	TO-8
SMA18-1	Surface Mount
CA18-1	SMA Connectorized ¹

1. The connectorized version is not RoHS compliant.

Electrical Specifications²: $Z_0 = 50 \Omega$, $V_{CC} = +15 V_{DC}$

Parameter	Units	Typical	Guaranteed	
		25°C	0°C to +50°C	-54°C to +85°C
Frequency	MHz	5 - 1100	10 - 1000	10 - 1000
Small Signal Gain (min)	dB	14.7	14.0	13.5
Gain Flatness (max)	dB	±0.3	±0.5	±1.0
Reverse Isolation	dB	17	—	—
Noise Figure (max)	dB	3.8	5.0	5.5
Power Output @ 1 dB comp. (min)	dBm	16.0	15.0	14.5
IP3	dBm	30	—	—
IP2	dBm	42	—	—
Second Order Harmonic IP	dBm	45	—	—
VSWR Input / Output (max)		1.5:1 / 1.5:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	44	46	48

2. Over temperature performance limits for part number CA18-1, guaranteed from 0°C to +50°C only.

Absolute Maximum Ratings

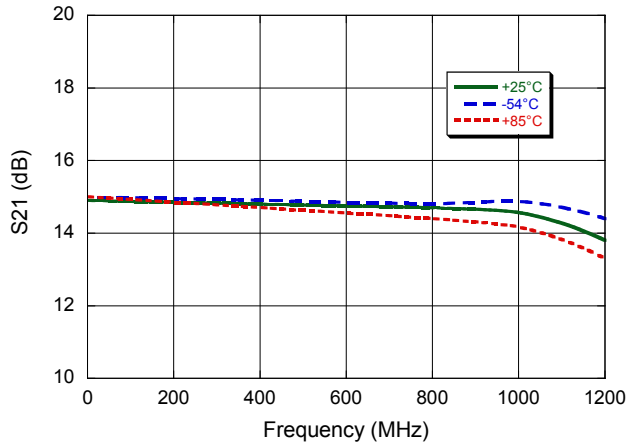
Parameter	Absolute Maximum
DC Voltage	+17 V
Continuous Input Power	+13 dBm
Short Term Input power (1 minute max.)	50 mW
Peak Power (3 μ sec max.)	0.5 W
“S” Series Burn-In Temperature (case)	+125°C
Case Temperature	+125°C
Storage Temperature	-62°C to +125°C

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

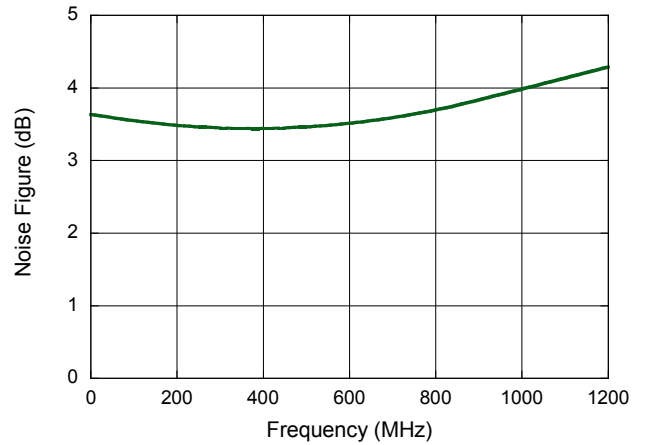
Parameter	Rating
Thermal Resistance (θ_{jc})	145°C/W
Transistor Power Dissipation (P_d)	0.4 W
Junction Temperature Rise Above Case (T_{jc})	+58°C

Typical Performance Curves

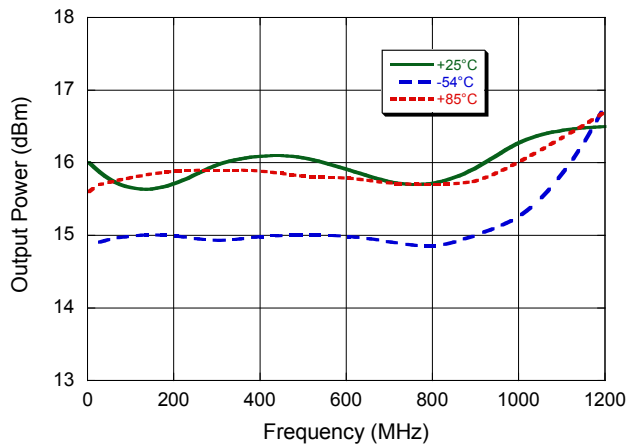
Gain



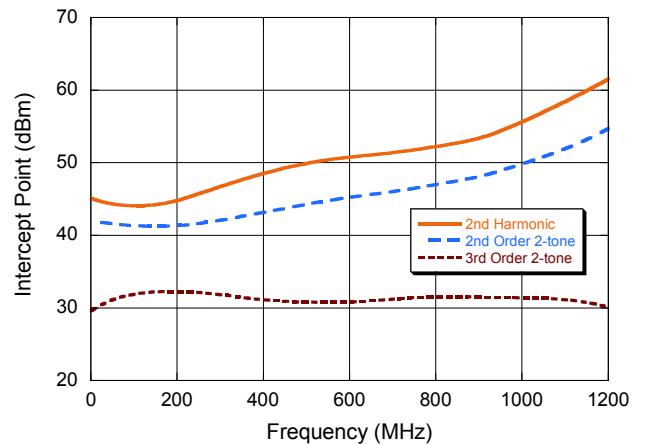
Noise Figure



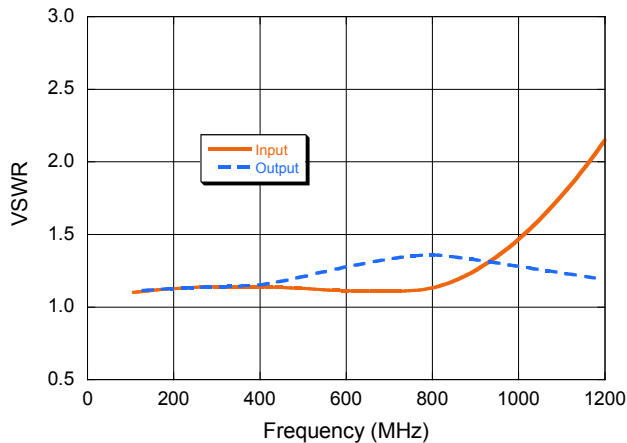
Output Power



Intercept Point



VSWR



A18-1 / SMA18-1

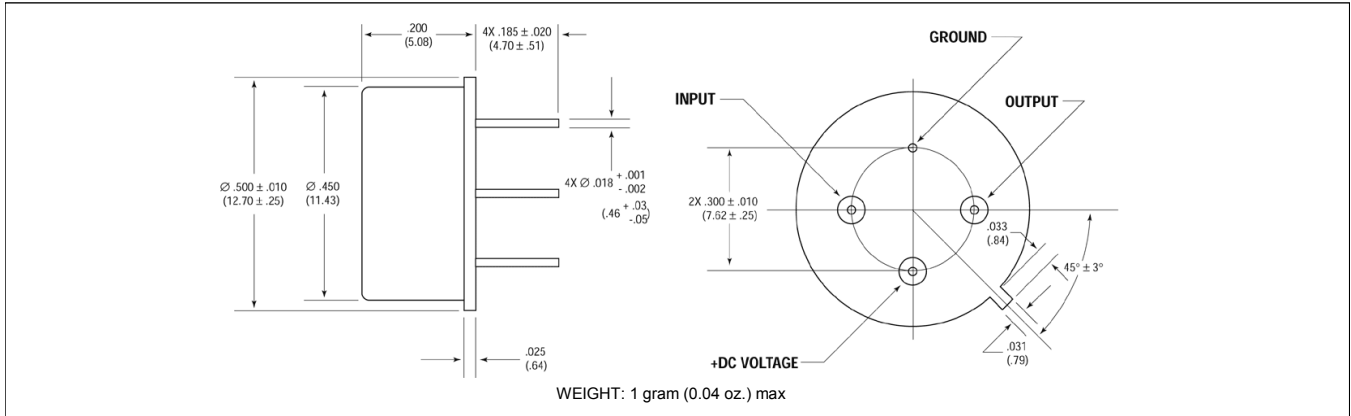


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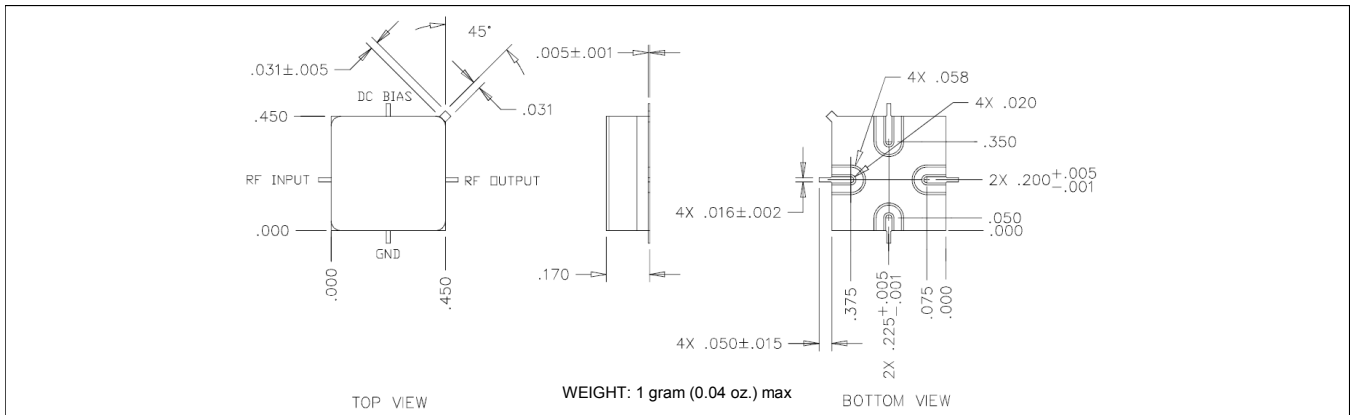
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Outline Drawings³:

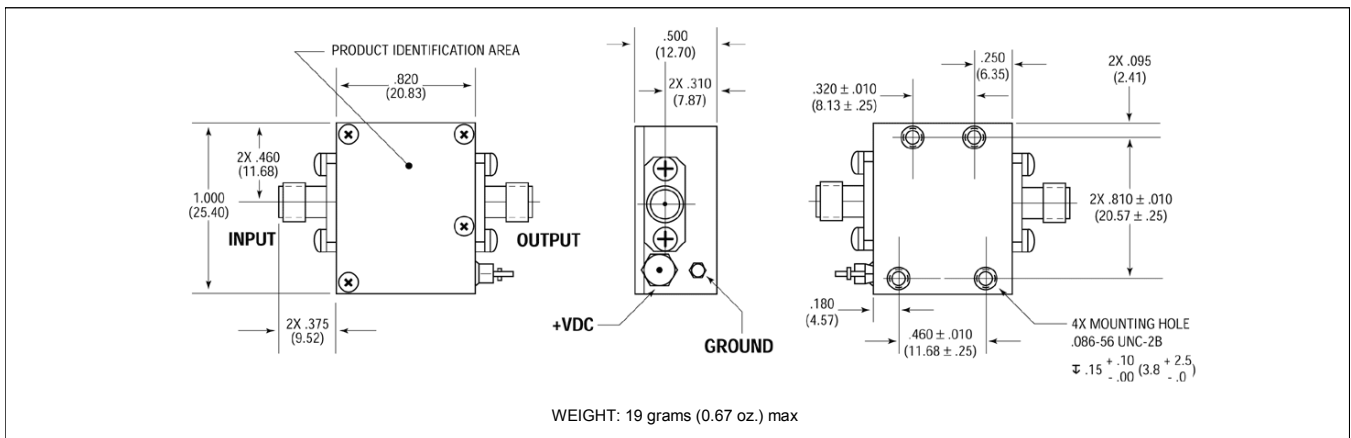
TO-8



Surface Mount



SMA Connectorized



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