A18-1 / SMA18-1

Cascadable Amplifier
10 to 1000 MHz

Rev. V3

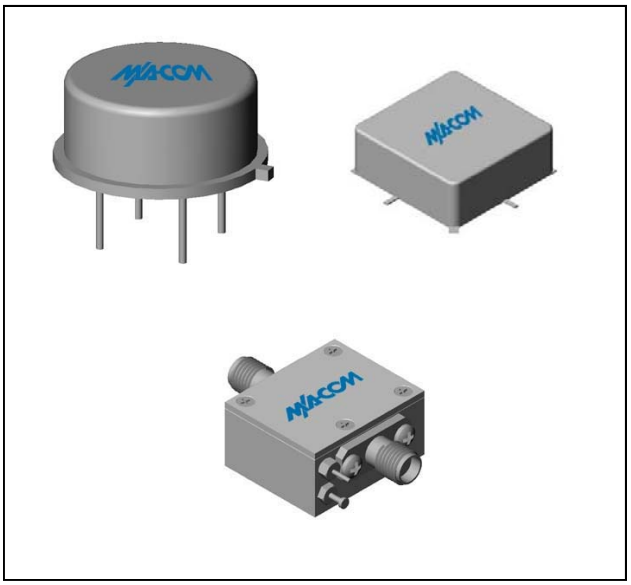
Features

- HIGH DYNAMIC RANGE
- HIGH OUTPUT POWER: +16 dBm (TYP.)
- HIGH THIRD ORDER I.P.: +30 dBM (TYP.)
- LOW NOISE: 3.8 dB (TYP.)

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 **

** The connectorized version is not RoHs compliant.

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

Parameter	Units	Typical	Guaranteed	
		25ºC	0º to 50ºC	-54º to +85ºC*
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

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62ºC to +125ºC
Case Temperature	+125ºC
DC Voltage	+17 V
Continuous Input Power	+13 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: $V_{CC} = +15\ V_{DC}$

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

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

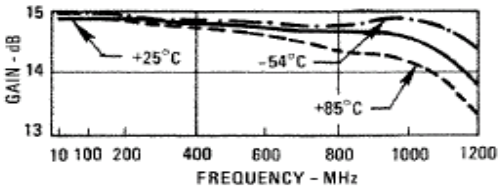
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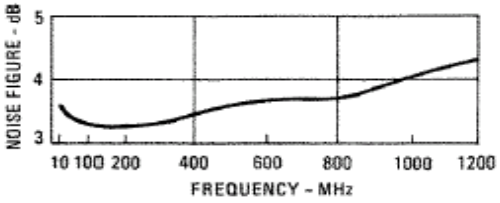
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Typical Performance Curves at +25°C

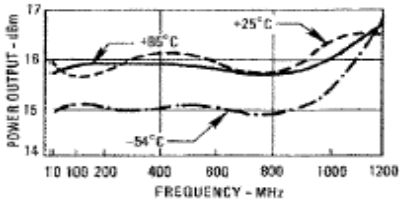
Gain



Noise Figure

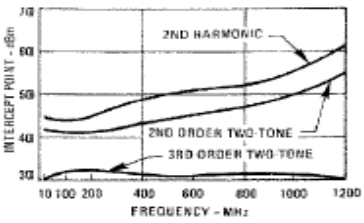


Power Output*

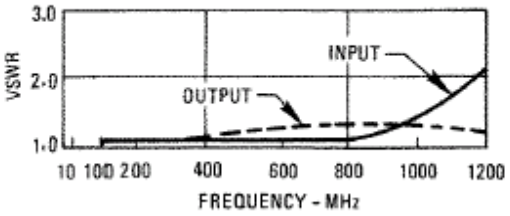


* at 1 dB Gain Compression

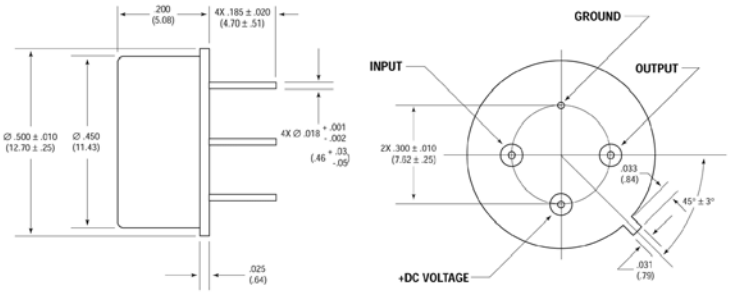
Intercept Point



VSWR

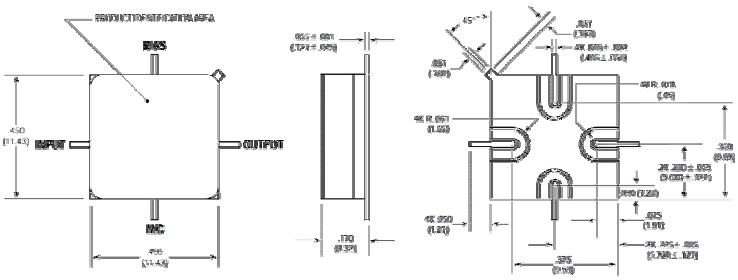


Outline Drawing: TO-8 *



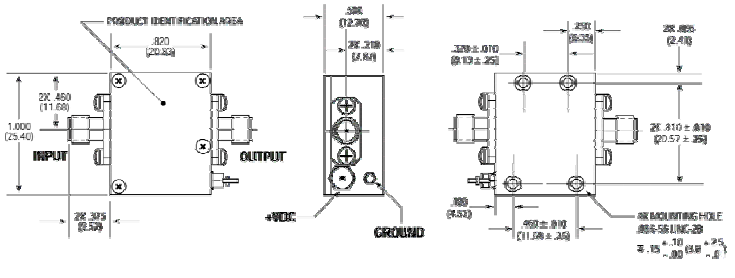
WEIGHT: 1 gram (0.04 oz.) max

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.

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