



Cascadable Amplifier 10 to 1000 MHz

A18-1 / SMA18-1

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.

Ordering Information

Part Number

A18-1	TO-8					
SMA18-1	Surface Mount					
CA18-1 SMA Connectorized						
Electrical Specifications: $Z_0 = 50\Omega$, $V_{CC} = +$						
Electrical Specificat	tions:	$Z_0 = 50\Omega$,	V _{cc} =	+15		
Electrical Specificat	Units	$Z_0 = 50\Omega$,		+15 Guar		

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Product Image

 V_{DC}

Absolute Maximum Ratings

Parameter	Units	Typical	Gua	ranteed
Parameter		Units	25°C	0° to 50°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

Package

Parameter	Absolute Maximum	
Storage Temperature	-62°C to +125°C	
Case Temperature	+125°C	
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)	+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

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

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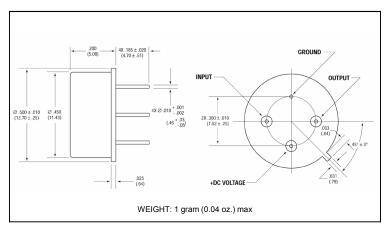
Cascadable Amplifier 10 to 1000 MHz

A18-1 / SMA18-1

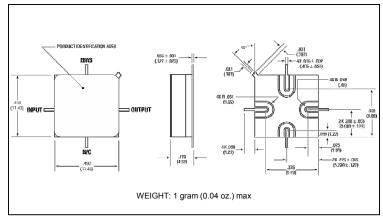
Typical Performance Curves at +25°C

Gain ۴ 10 100 200 1200 400 600 1000 800 FREQUENCY - MHz Noise Figure 幣 NOISE FIGURE 10 100 200 600 800 1008 1200 FREQUENCY - MHz Power Output* 10 108 200 1000 1200 FREQUENCY * at 1 dB Gain Compression Intercept Point 2ND BARMONIC O DROER TWO TONE SRD ORDER TWO-TONE 10 100 200 FREQUENCY - MHz VSWR 3.0 INPUT S 2.0 10 100 200 600 800 1000 1200 FREQUENCY - MHz

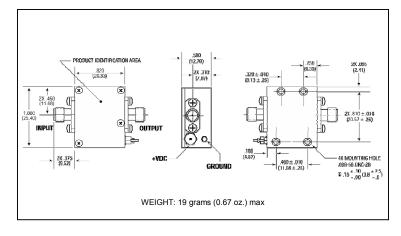
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount



Outline Drawing: SMA Connectorized *



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