

Cascadable Amplifier 2 to 1500 MHz

A25-1 / SMA25-1

v3

Features

- LOW NOISE: <3.4 dB (TYP.)
- MEDIUM POWER OUT: +9.0 dBm (TYP.)
- LOW VSWR: <1.7:1 VSWR (TYP.)
- WIDE POWER SUPPLY RANGE: +5 TO +15 VOLTS

Description

The A25-1 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package
A25-1	TO-8
SMA25-1	Surface Mount
CA25-1	SMA Connectorized

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

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
Frequency	MHz	1-1600	2-1500	2-1500
Small Signal Gain (min)	dB	13.5	13.0	12.5
Gain Flatness (max)	dB	±0.4	±0.5	±0.7
Reverse Isolation	dB	18		
Noise Figure (max)	dB	3.0	3.5	4.0
Power Output @ 1 dB comp. (min)	dBm	9.0	8.0	7.5
IP3	dBm	+22		
IP2	dBm	+30		
Second Order Harmonic IP	dBm	+36		
VSWR Input / Output (max)		1.7:1 / 1.2:1	1.9:1 / 1.9:1	2.0:1 / 2.3:1
DC Current @ 15 Volts (max)	mA	24	27	28

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+18 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}	185°C/W
Transistor Power Dissipation P_d	0.186 W
Junction Temperature Rise Above Case T_{jc}	+34°C

* Over-temperature performance limits for part number CA25-1, guaranteed from 0°C to +50°C only.

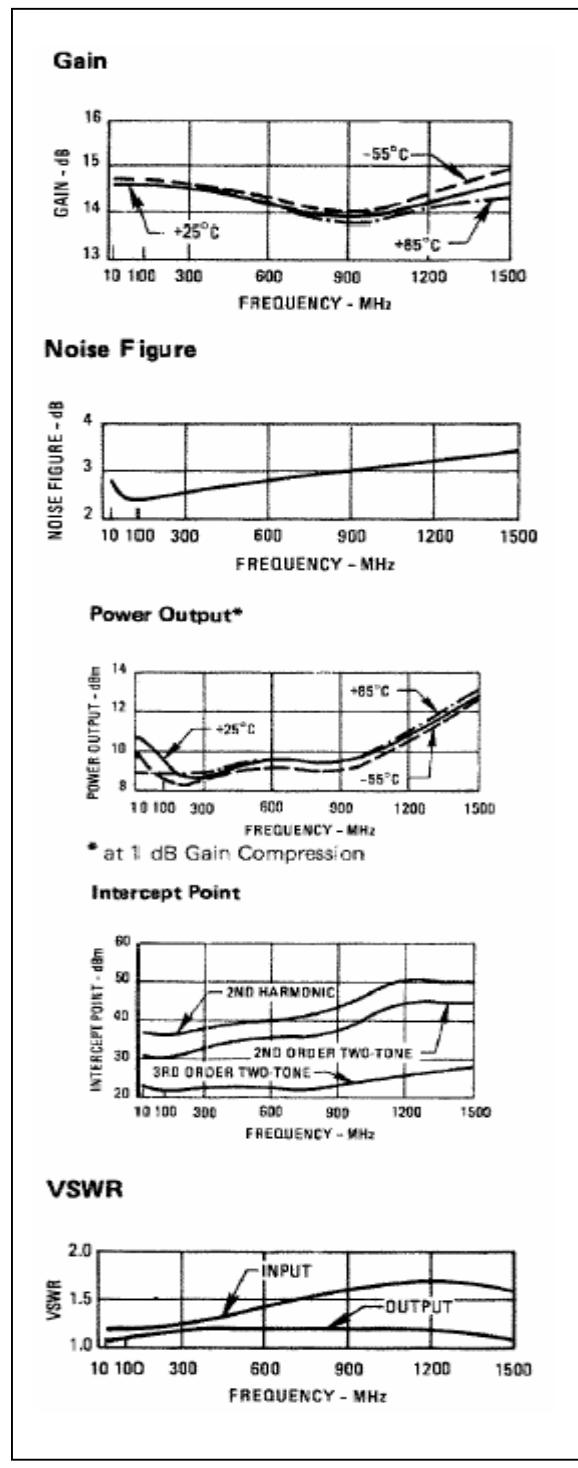


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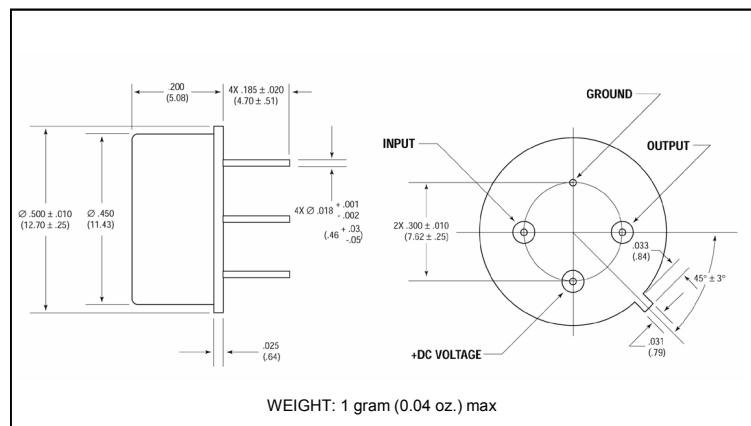
A25-1 / SMA25-1

V3

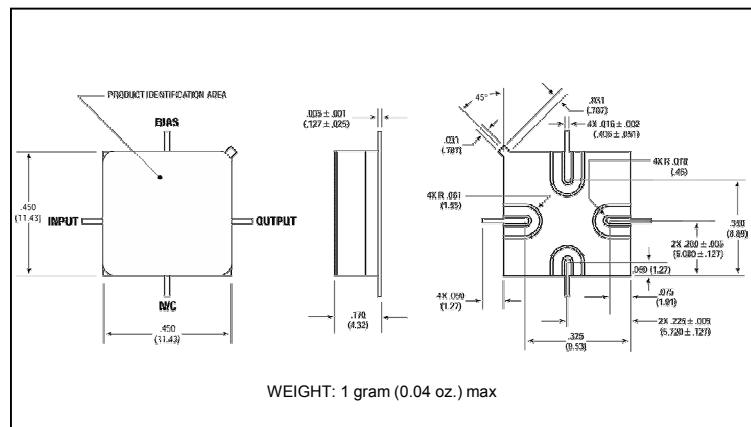
Typical Performance Curves at +25°C



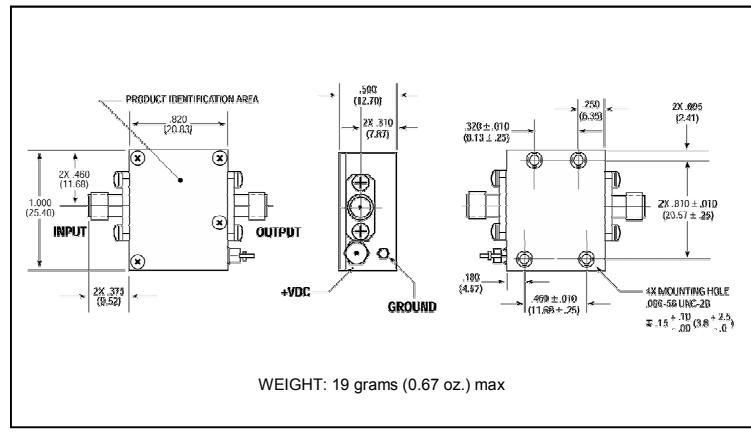
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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