

Cascadable Amplifier 1000 to 4000 MHz

Rev. V3

Features

- HIGH GAIN 17.5 dB (TYP.)
- LOW NOISE: 4.5 dB (TYP.)
- HIGH OUTPUT POWER: +19.5 dBm (TYP.)
- GaAs FET DESIGN

Description

The A45 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.

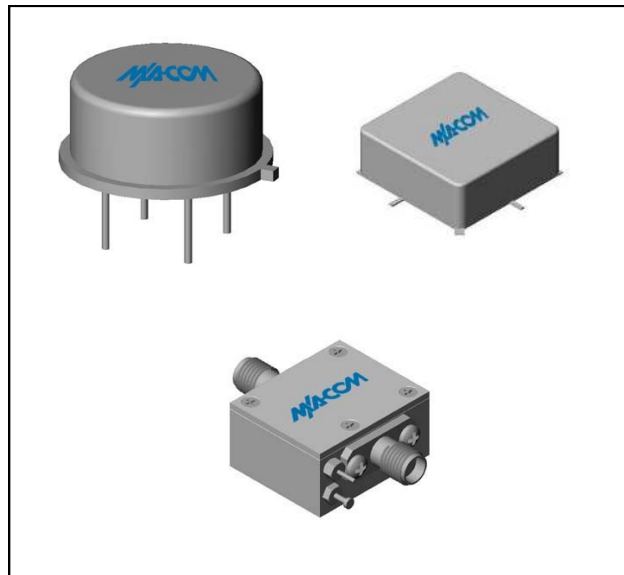
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package
A45	TO-8
SMA45	Surface Mount
CA45 **	SMA Connectorized

** The connectorized version is not RoHs compliant.

Product Image



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	1000-4000	1000-4000	1000-4000
Small Signal Gain (min)	dB	17.5	16.5	15.5
Gain Flatness (max)	dB	±0.6	±0.8	±1.0
Reverse Isolation	dB	36		
Noise Figure (max)	dB	4.0	5.0	5.5
Power Output @ 1 dB comp. (min)	dBm	19.5	18.0	17.0
IP3	dBm	+29		
IP2	dBm	+39		
Second Order Harmonic IP	dBm	+44		
VSWR Input / Output (max)		1.8:1 / 1.7:1	2.1:1 / 2.1:1	2.2:1 / 2.2:1
DC Current @ 15 Volts (max)	mA	120	125	130

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	85°C
DC Voltage	+16 V
Continuous Input Power	+13 dBm
Short Term Input power (1 minute max.)	100 mW
Peak Power (3 µsec max.)	0.25 W
"S" Series Burn-In Temperature (case)	85°C

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

Parameter	Rating
Thermal Resistance θ_{jc}	131°C/W
Transistor Power Dissipation P_d	0.497 W
Junction Temperature Rise Above Case T_{jc}	65°C

1 * Over temperature performance limits for part number CA45, guaranteed from 0°C to +50°C only.

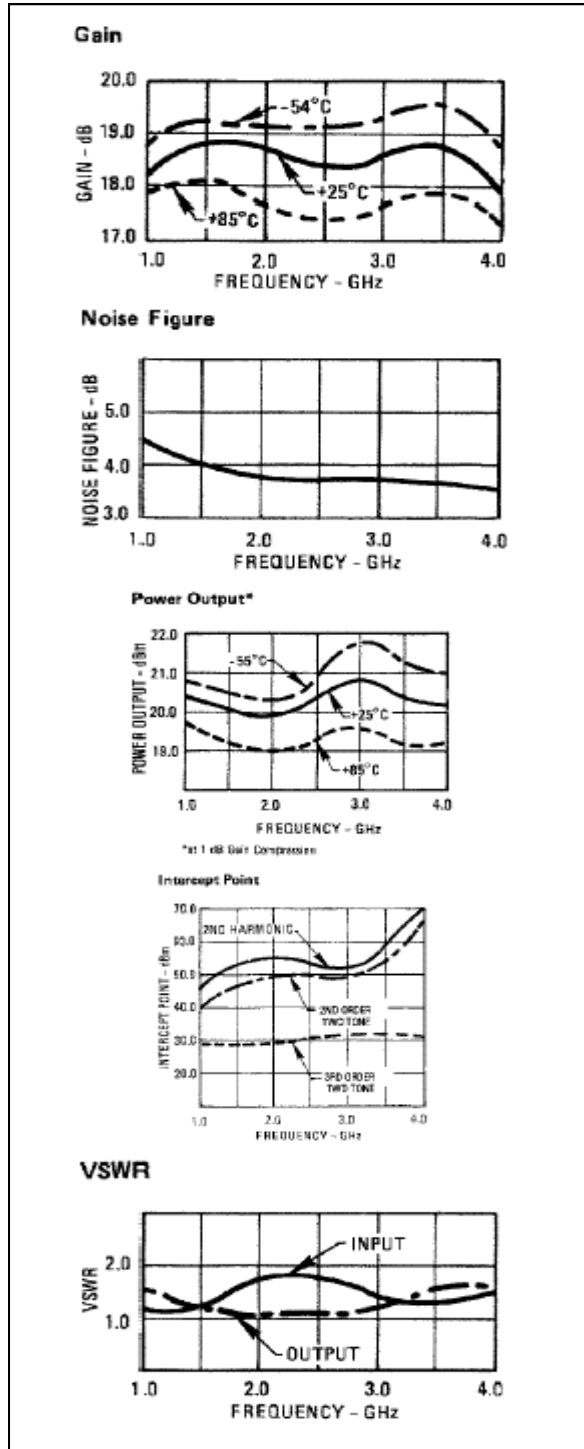
A45 / SMA45



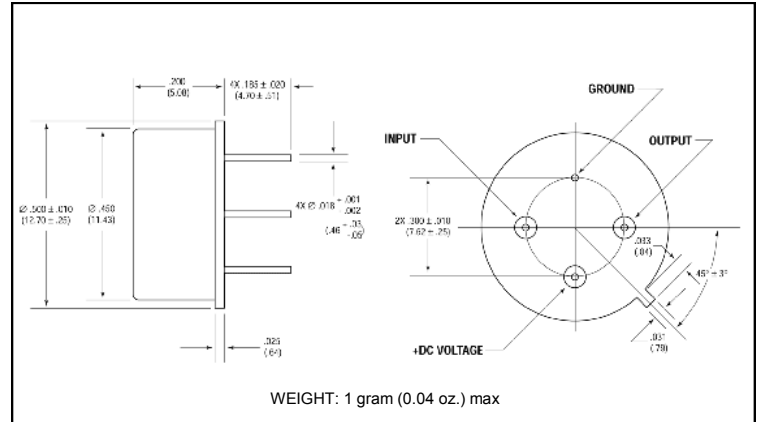
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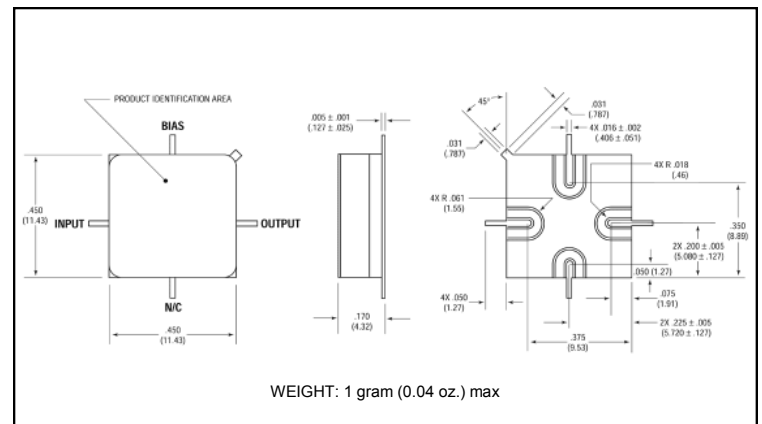
Typical Performance Curves at +25°C



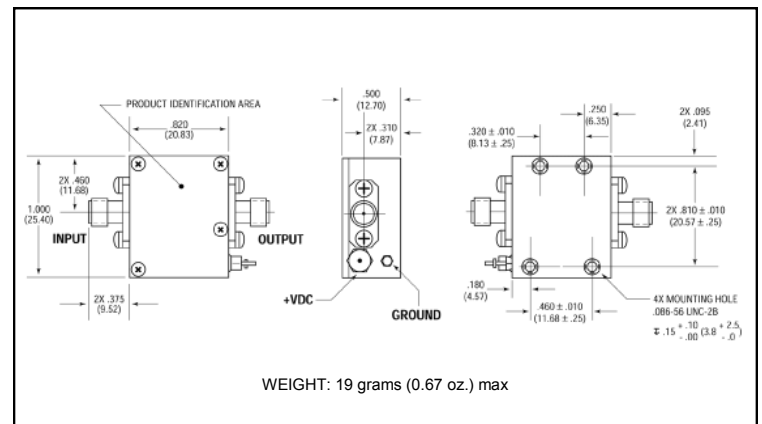
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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

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