

**Cascadable Amplifier  
1000 to 4000 MHz**

**PA48 / SMPA48**

V1

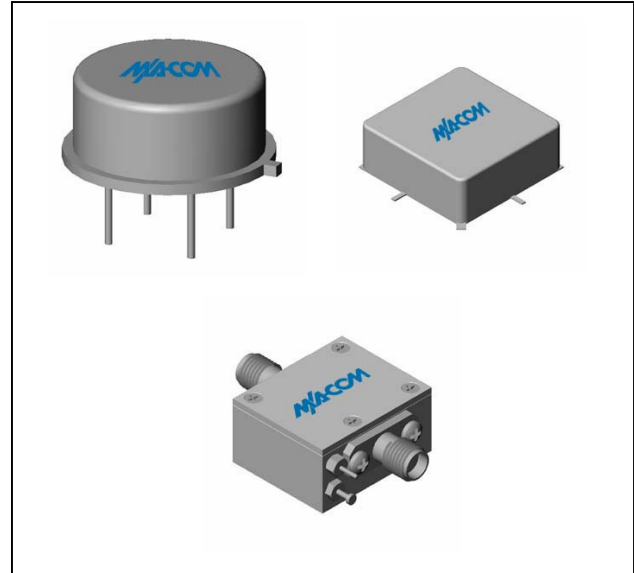
**Features**

- ULTRAWIDE BANDWIDTH: 0.8-4.2 GHz (TYP.)
- HIGH OUTPUT LEVEL: +24 dBm (TYP.)
- HIGH GAIN: 16.0 dB (TYP.)
- GaAs FET AMPLIFIER

**Description**

The PA48 power amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability. This two stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range. 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
PA48	TO-8B
SMPA48	Surface Mount
CPA48	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	GHz	0.8-4.2	1.0-4.0	1.0-4.0
Small Signal Gain (min)	dB	16.0	14.0	13.5
Gain Flatness (max)	dB	±0.4	±0.7	±0.8
Reverse Isolation	dB	33		
Noise Figure (max)	dB	5.5	7.0	7.5
Power Output @ 1 dB comp. (min)	dBm	24.0	22.5	21.5
IP3	dBm	+34		
IP2	dBm	+45		
Second Order Harmonic IP	dBm	+55		
VSWR Input / Output (max)		1.7:1 / 1.6:1	2.0:1 / 1.9:1	2.2:1 / 2.1:1
DC Current @ 15 Volts (max)	mA	225	235	245

**Absolute Maximum Ratings**

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+85°C
DC Voltage	+16 V
Continuous Input Power	+17 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 $\theta_{jc}$	75°C/W
Transistor Power Dissipation $P_d$	1.264W
Junction Temperature Rise Above Case $T_{jc}$	+95°C

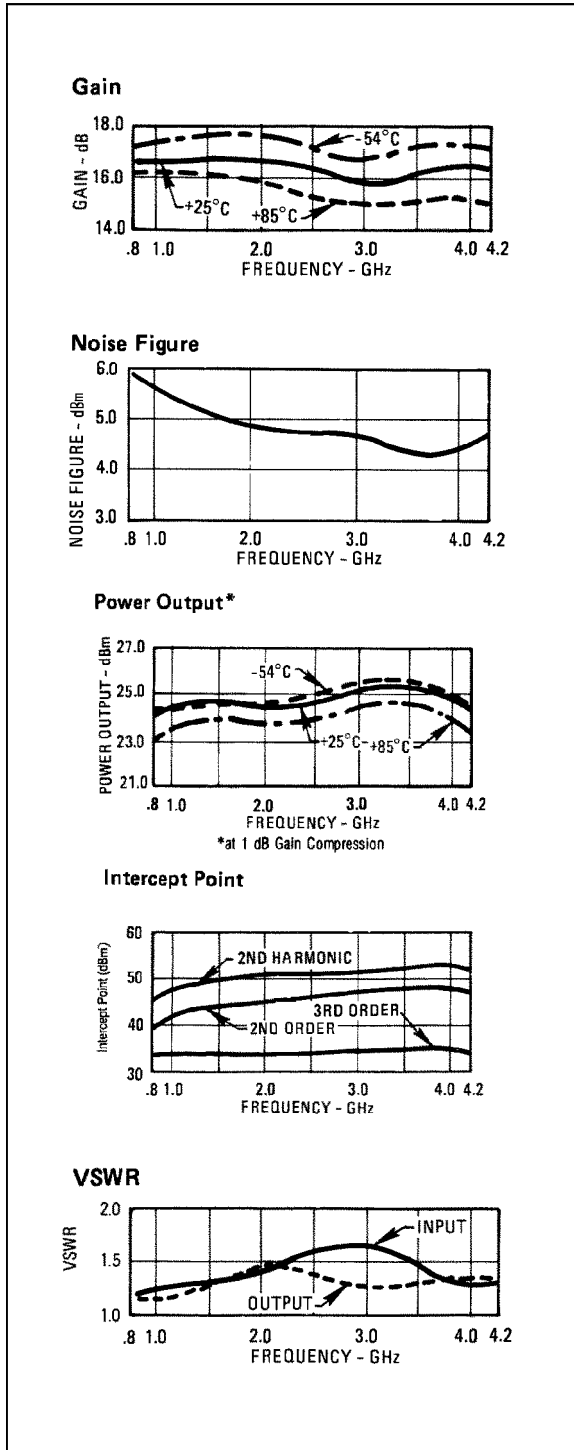
\* Over temperature performance limits for part number CPA48, guaranteed from 0°C to +50°C only.

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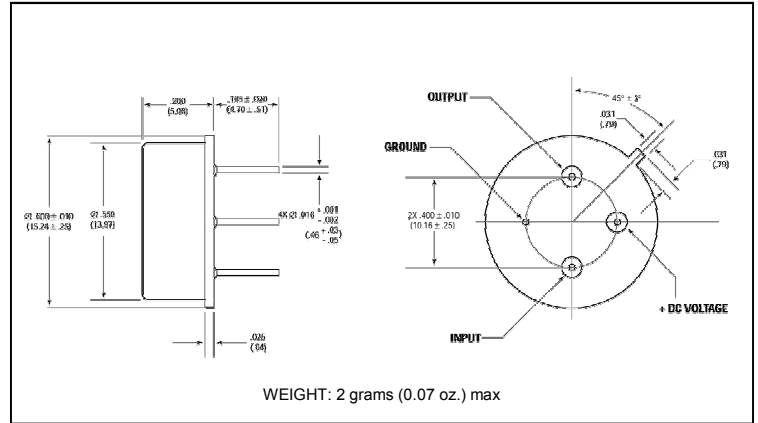
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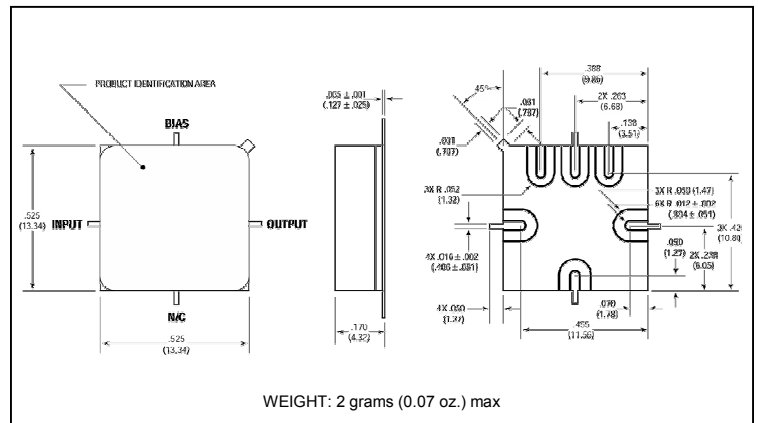
**Typical Performance Curves at +25°C**



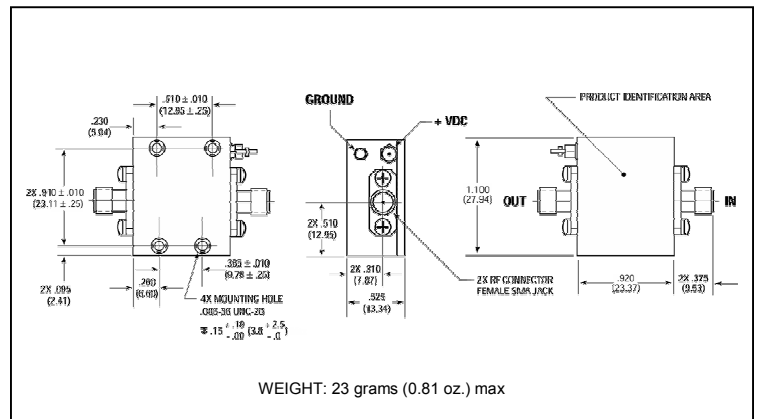
**Outline Drawing: TO-8B \***



**Outline Drawing: Surface Mount \***



**Outline Drawing: SMA Connectorized \***



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

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