

# **PA48 / SMPA48**

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# Cascadable Amplifier 1000 to 4000 MHz

#### **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.

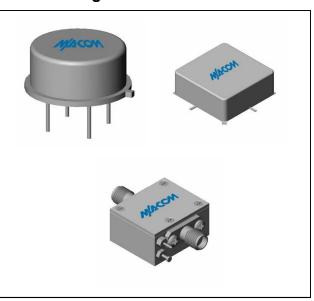
This two stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range.

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

#### **Ordering Information**

Part Number	Package
PA48	TO-8B
SMPA48	Surface Mount
CPA48	SMA Connectorized

#### **Product Image**



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

Davamatav	Units	Typical	Guar	ranteed
Parameter	Units	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 <sub>d</sub>	1.264W	
Junction Temperature Rise Above Case T <sub>jc</sub>	+95°C	

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

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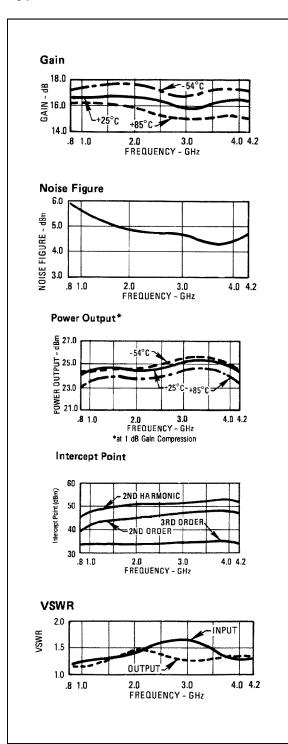


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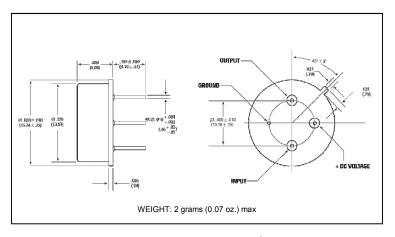
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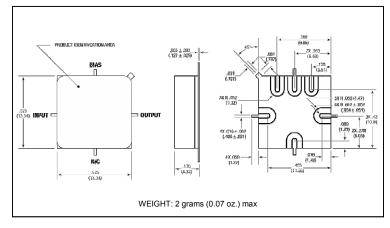
### Typical Performance Curves at +25°C



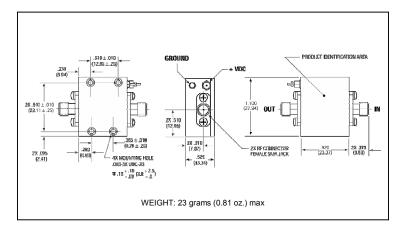
## Outline Drawing: TO-8B \*



### Outline Drawing: Surface Mount



## Outline Drawing: SMA Connectorized \*



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