PA48 / SMPA48

Cascadable Amplifier
1000 to 4000 MHz

Rev. V1

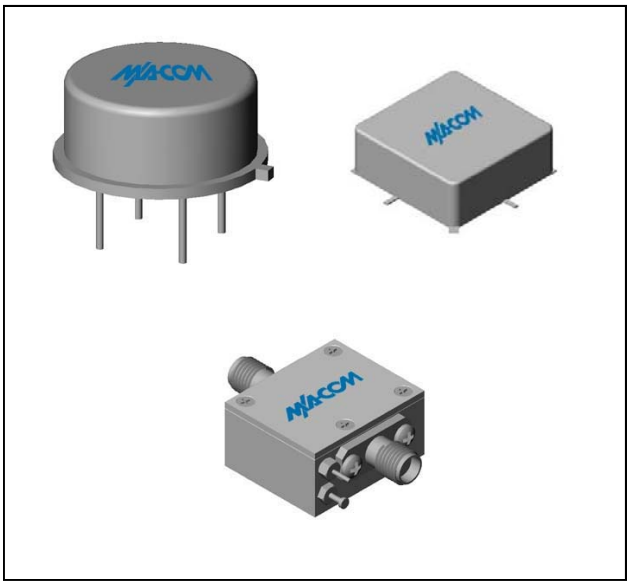
Features

- 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 = 50Ω, V_{CC} = +15 V_{DC}

Parameter	Units	Typical	Guaranteed	
		25ºC	0º to 50ºC	-54º to +85ºC*
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

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

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62ºC to +125ºC
Case Temperature	+85ºC
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)	+85ºC

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

Parameter	Rating
Thermal Resistance θ_{jc}	75ºC/W
Transistor Power Dissipation P_d	1.264W
Junction Temperature Rise Above Case T_{jc}	+95ºC

- **North America** Tel: 800.366.2266 / Fax: 978.366.2266
- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
- **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

Visit www.macomtech.com for additional data sheets and product information.

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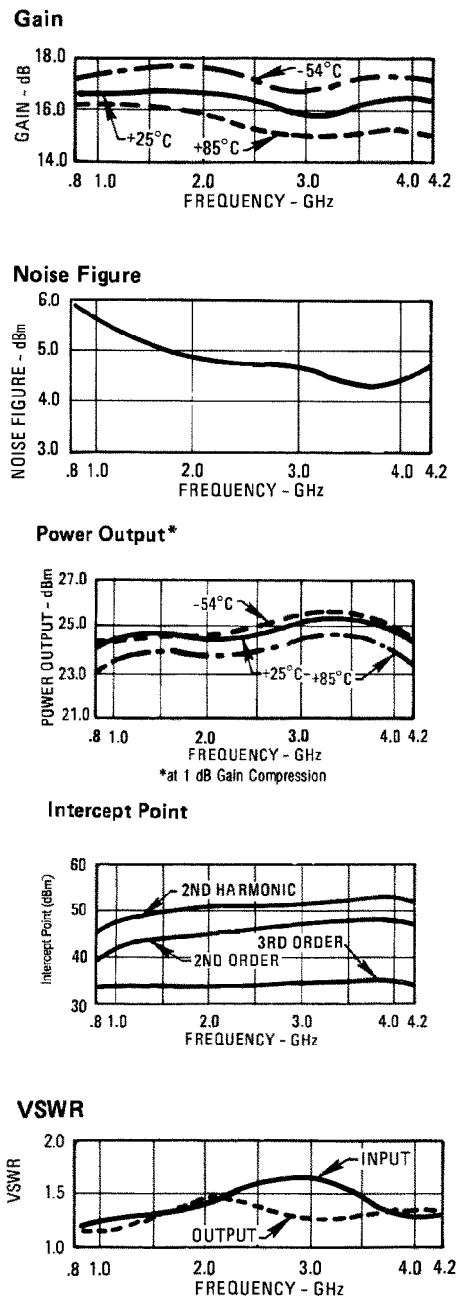
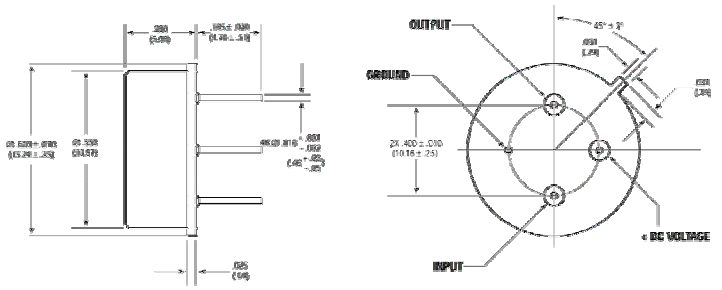
Typical Performance Curves at +25°C

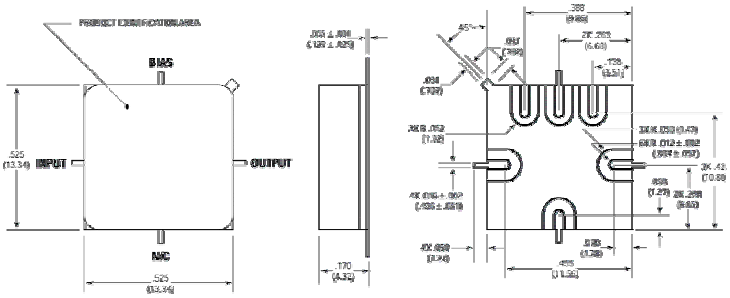


Outline Drawing: TO-8B *



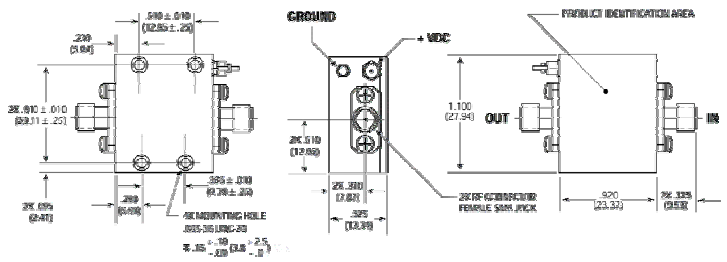
WEIGHT: 2 grams (0.07 oz.) max

Outline Drawing: Surface Mount *



WEIGHT: 2 grams (0.07 oz.) max

Outline Drawing: SMA Connectorized *



WEIGHT: 23 grams (0.81 oz.) max

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

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