

**Cascadable Amplifier
200 to 2000 MHz**

PA38/SMPA38

V3

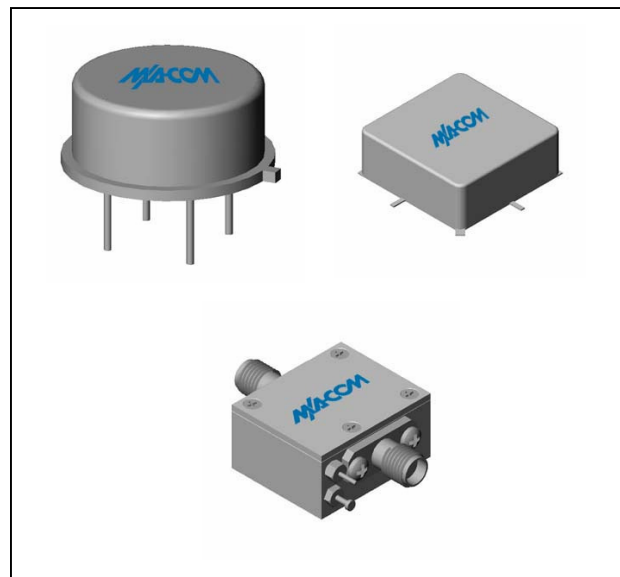
Features

- WIDE BANDWIDTH: 200-2400 MHz (TYP.)
- HIGH OUTPUT LEVEL: +23.0 dBm (TYP.)
- LOW NOISE FIGURE: 4.0 dB (TYP.)
- HIGH THIRD ORDER I.P.: +34 dBm (TYP.)

Description

The PA38 RF 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
PA38	TO-8
SMPA38	Surface Mount
CPA38	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	0.2-2.4	0.2-2.0	0.2-2.0
Small Signal Gain (min)	dB	10.0	8.5	8.0
Gain Flatness (max)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	17		
Noise Figure (max)	dB	4.0	4.7	5.2
Power Output @ 1 dB comp. (min)	dBm	23.0	21.5	21.0
IP3	dBm	+34		
IP2	dBm	+55		
Second Order Harmonic IP	dBm	+60		
VSWR Input / Output (max)		1.7:1 / 1.5:1	1.9:1 / 1.9:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	150	158	160

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.)	1 W
"S" Series Burn-In Temperature (case)	85°C

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

Parameter	Rating
Thermal Resistance θ_{jc}	125.8°C/W
Transistor Power Dissipation P_d	0.578 W
Junction Temperature Rise Above Case T_{jc}	72°C

* Over temperature performance limits for part number CPA38, guaranteed from 0°C to +50°C only.

M/A-COM Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice. M/A-COM makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does M/A-COM assume any liability whatsoever arising out of the use or application of any product(s) or information.

• **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

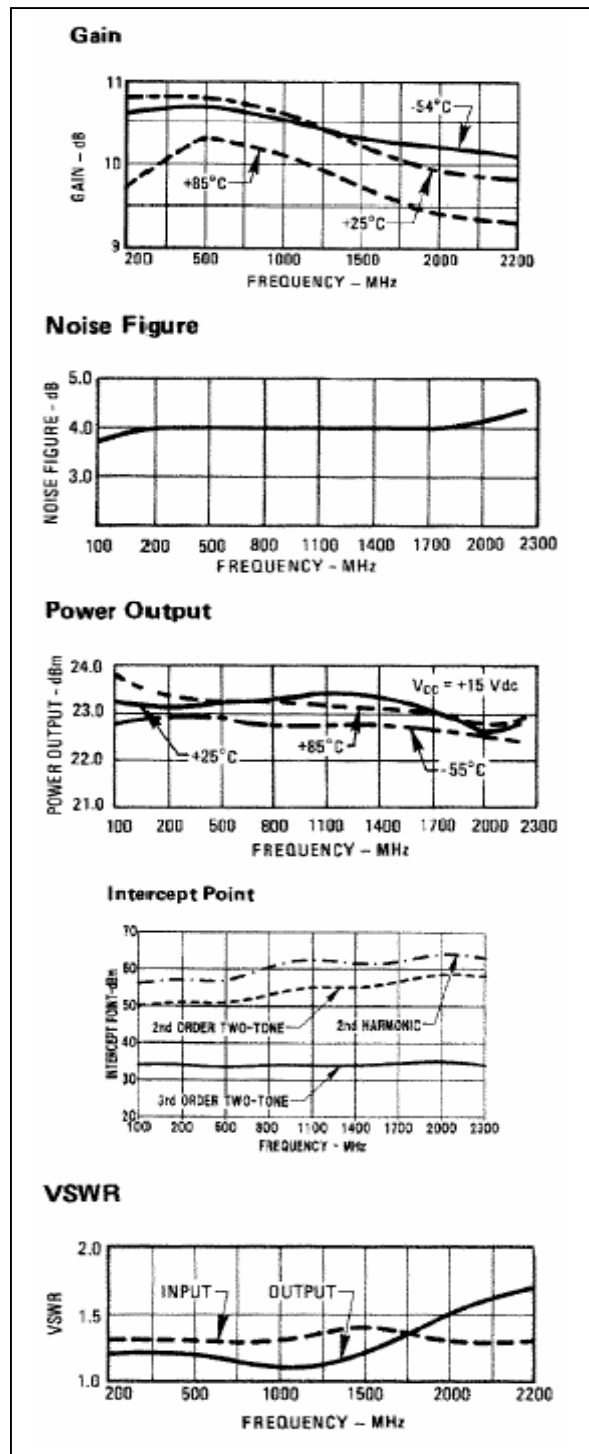
Visit www.macom.com for additional data sheets and product information.

**Cascadable Amplifier
200 to 2000 MHz**

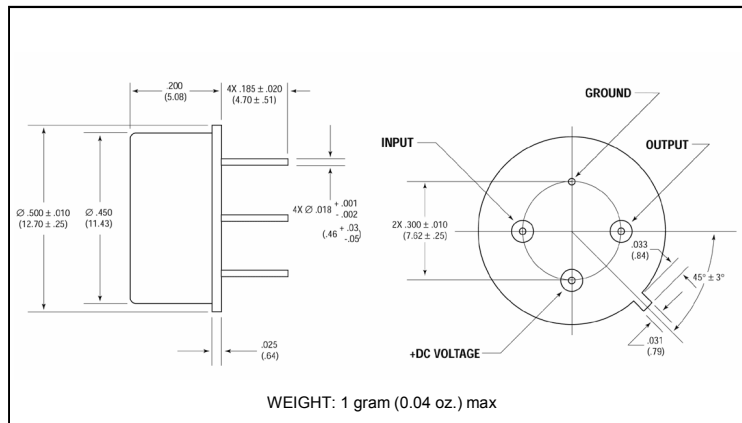
PA38/SMPA38

V3

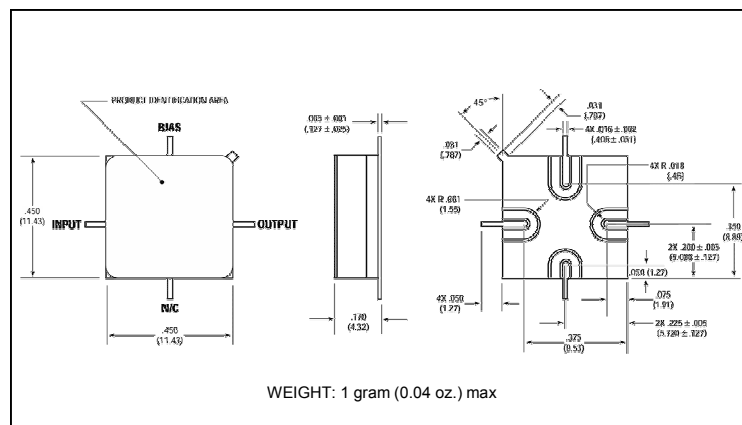
Typical Performance Curves at +25°C



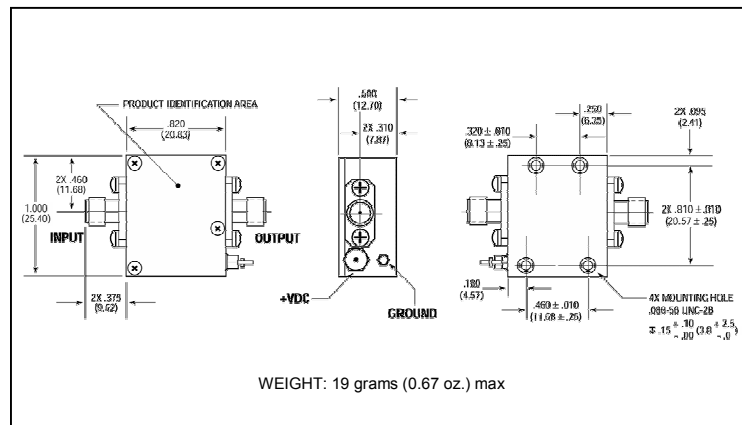
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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