

PA38-2 / SMPA38-2

Cascadable Amplifier
200 to 2600 MHz

Rev. V3

Features

- WIDE BANDWIDTH: 200-2800 MHz (TYP.)
- HIGH OUTPUT LEVEL: +23.5 dBm (TYP.)
- GaAs FET AMPLIFIER
- HIGH THIRD ORDER I.P.: +33 dBm (TYP.)

Description

The PA38-2 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

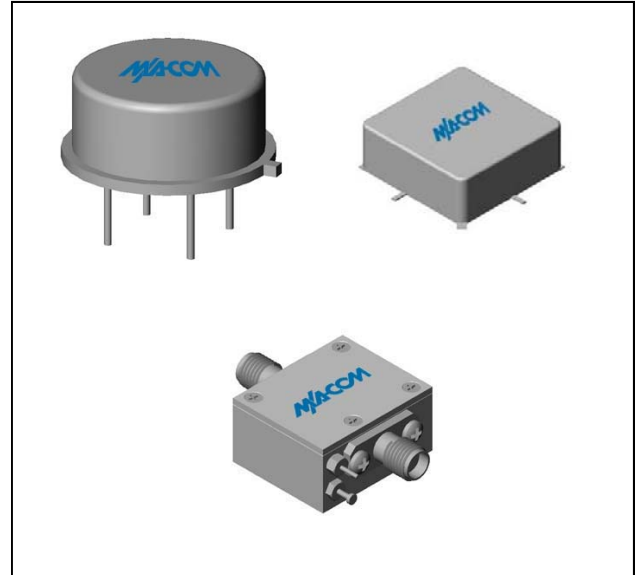
This two stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package
PA38-2	TO-8
SMPA38-2	Surface Mount
CPA38-2 **	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	GHz	0.2-2.8	0.2-2.6	0.2-2.6
Small Signal Gain (min)	dB	8.5	7.5	7.0
Gain Flatness (max)	dB	±0.2	±0.7	±1.0
Reverse Isolation	dB	16		
Noise Figure (max)	dB	4.5	5.5	6.0
Power Output @ 1 dB comp. (min)	dBm	23.5	22.0	21.4
IP3	dBm	+33		
IP2	dBm	+50		
Second Order Harmonic IP	dBm	+55		
VSWR Input / Output (max)		1.2:1 / 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°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 CPA38-2, guaranteed from 0°C to +50°C only.

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
 • **India** Tel: +91.80.4155721 • **China** Tel: +86.21.2407.1588
 Visit www.macomtech.com for additional data sheets and product information.

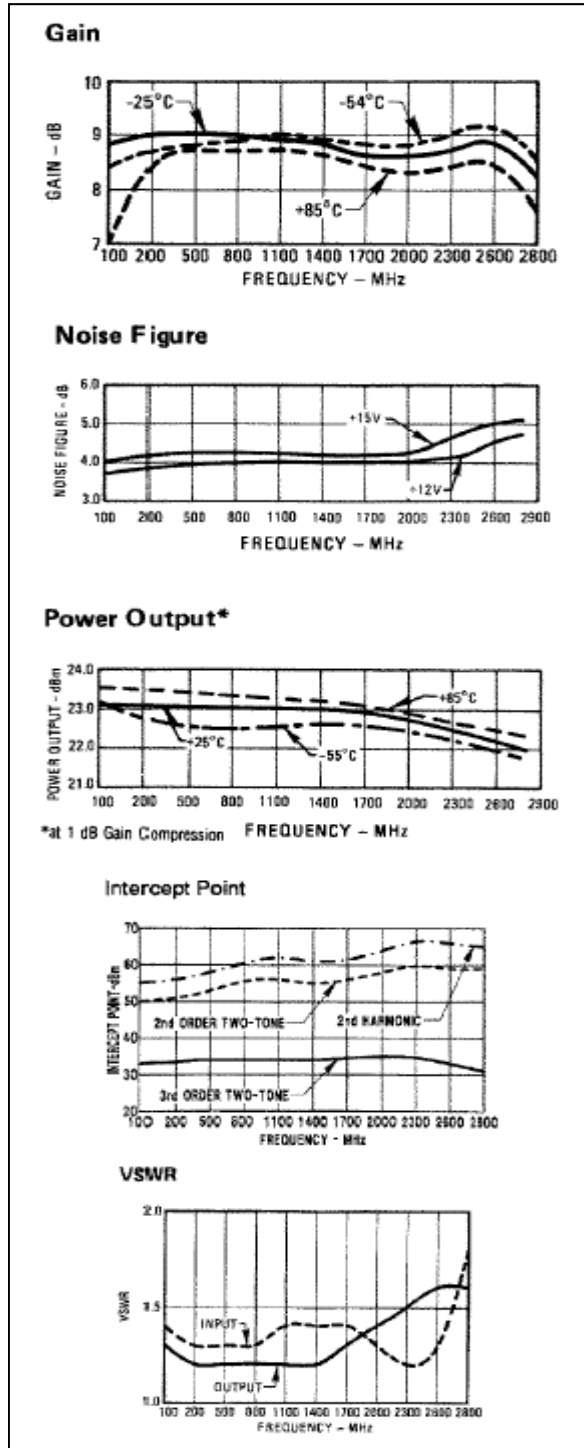
M/A-COM Technology Solutions Inc and its affiliates reserve the right to make changes to the products and information contained herein without notice.

PA38-2 / SMPA38-2

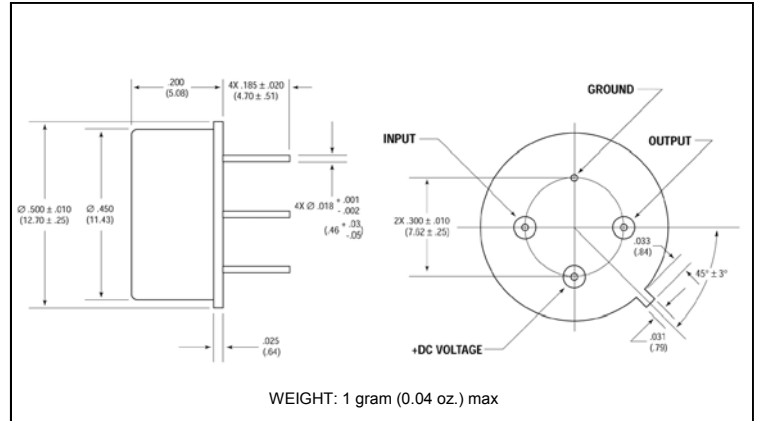
Cascadable Amplifier
200 to 2600 MHz

Rev. V3

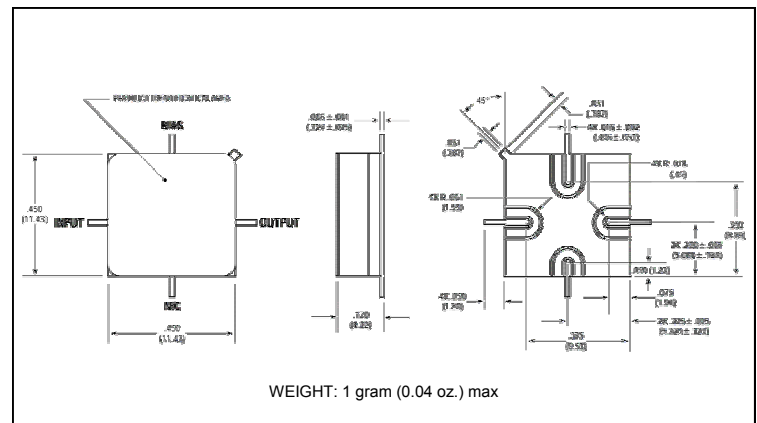
Typical Performance Curves at +25°C



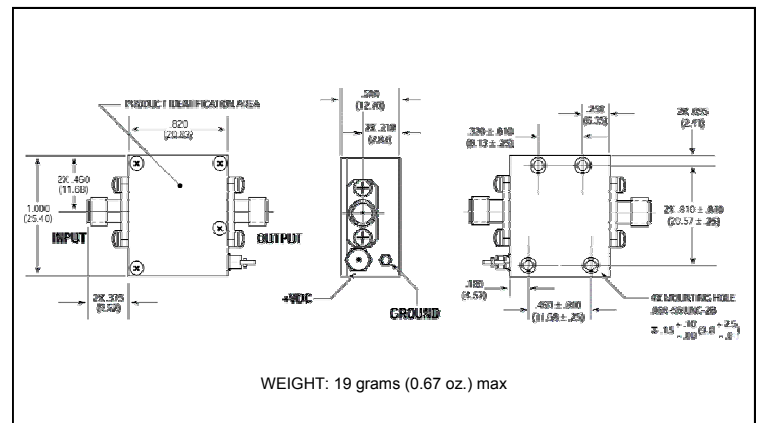
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.
PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
 • **India** Tel: +91.80.4155721 • **China** Tel: +86.21.2407.1588
 Visit www.macomtech.com for additional data sheets and product information.

M/A-COM Technology Solutions and its affiliates reserve the right to make changes to the products and information contained herein without notice.