

# Broadband Standard Product PA022023-38 GaN High Efficiency Power Amplifier 6 Watts from 2.2GHz to 2.3GHz

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[www.aeroflex.com/bband](http://www.aeroflex.com/bband)



## DESCRIPTION

The PA022023-38 is a Narrow band high efficiency power amplifier and is ideal for use as a stable IF Amplifier, wireless, point-to-point radios or high Power Amplifier for commercial, military or space applications.

Our team of engineers can custom design power amplifiers using the latest simulation software and proprietary technology to meet even the most demanding specifications.

## FEATURES

- 2.2GHz to 2.3GHz Frequency Range
- $P_{SAT} > 38\text{dBm}$
- 37.5dB typical  $\text{Gain}_{SAT}$
- Operates from a Single +28V Supply
- Unconditionally Stable
- Hermetic Package Available

## SPECIFICATIONS

### ABSOLUTE MAXIMUM RATINGS<sup>1</sup>

PARAMETER	SYMBOL	MIN	MAX	UNITS
Operating Temperature – Case	$T_{MO}$	-55	+95	°C
Storage Temperature – Case	$T_{MS}$	-65	+125	°C
Positive Supply Voltage	$V_{PS}$	-	+32	V

1. Stresses above those listed under "Absolute Maximums Rating" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

### NOMINAL OPERATING CONDITIONS

PARAMETER	CONDITIONS	MIN	MAX	UNITS
Temperature, $T_C$ – Case	Full Range	-55	+85	°C
Positive Supply Voltage, $V_{PS}$		+27.75	+28.5	V

*Aeroflex Plainview*

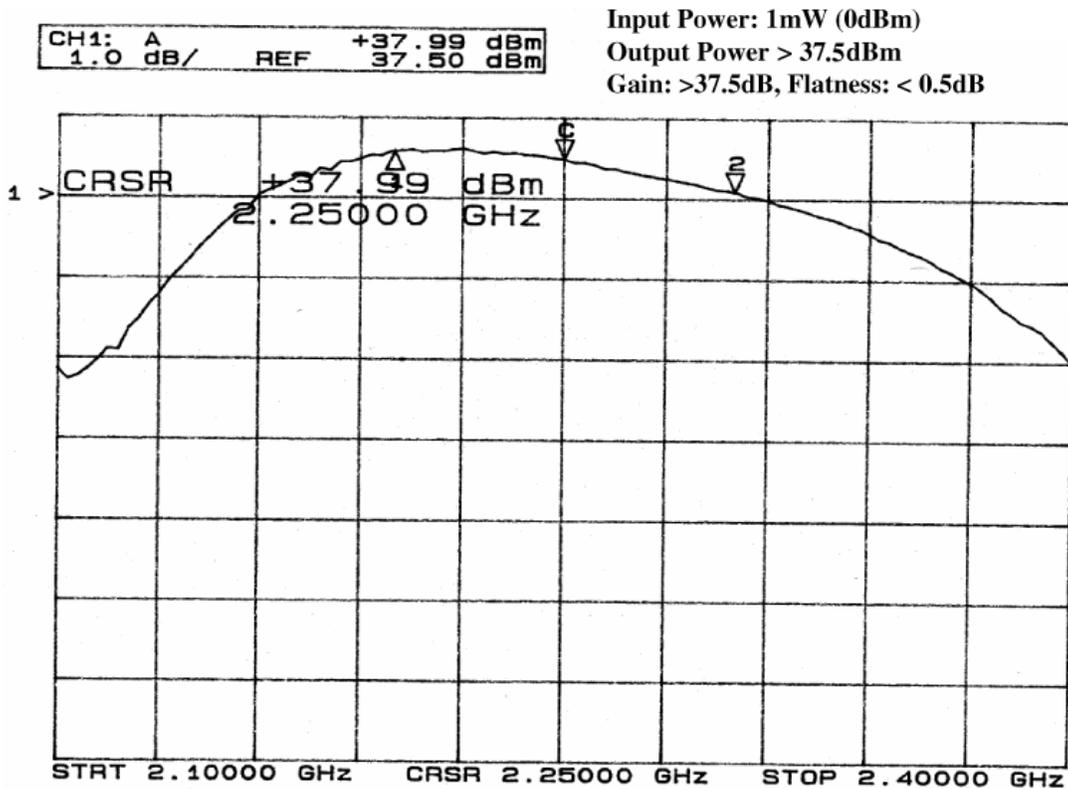
SCD10034 Rev A

# SPECIFICATIONS

## ELECTRICAL CHARACTERISTICS @ +25°C

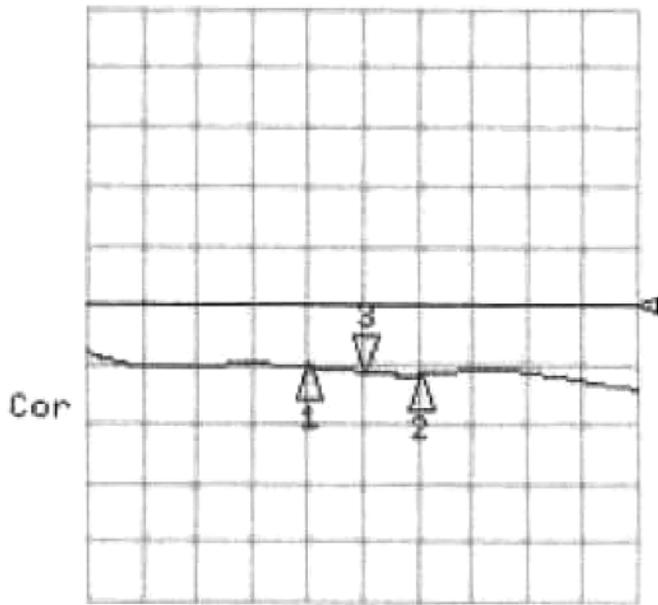
PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Frequency Range		2.2	-	2.3	GHz
Power Output	PSAT	-	+38	-	dBm
Gain <sub>SAT</sub>		-	37.5	-	dB
RF Input Impedance	Reference to 50 ohms	-	2.0:1	-	-
RF Output Impedance	Reference to 50 ohms	-	1.6:1	-	-
OIP3		-	46	-	dBm
Positive Supply Voltage		-	+28	-	V
Positive Supply Current		-	580	-	mA
Spurious Emissions Power Level		-	70	-	dBc
Efficiency		35	-	-	%

## TYPICAL OUTPUT POWER, GAIN SAT AND FLATNESS



## TYPICAL INPUT RETURN LOSS

CH4 LOG 10 dB/ REF 0 dB  
S22 3:-11.126 dB 2 250.000 000 MHz



CH4 Markers

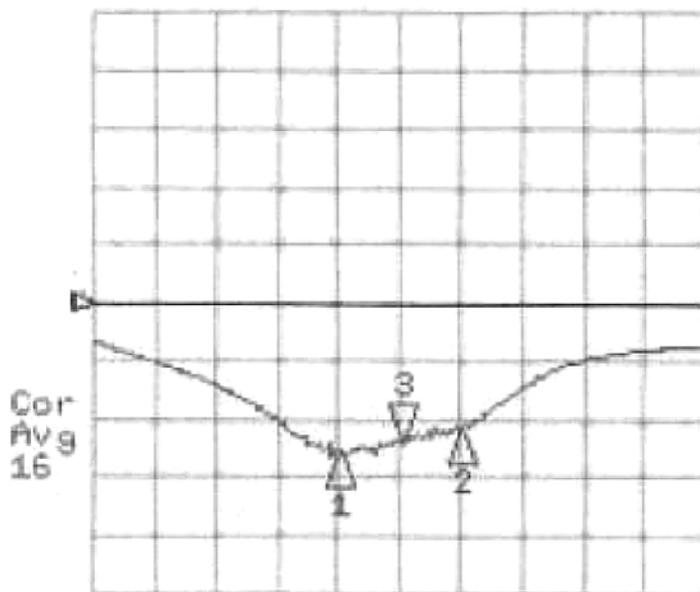
1:-10.320 dB  
2.20000 GHz

2:-11.592 dB  
2.30000 GHz

START 2000.000 MHz STOP 2500.000 MHz

## TYPICAL OUTPUT RETURN LOSS

CH1 LOG 10 dB/ REF 0 dB  
S11 3:-23.341 dB 2 250.000 000 MHz



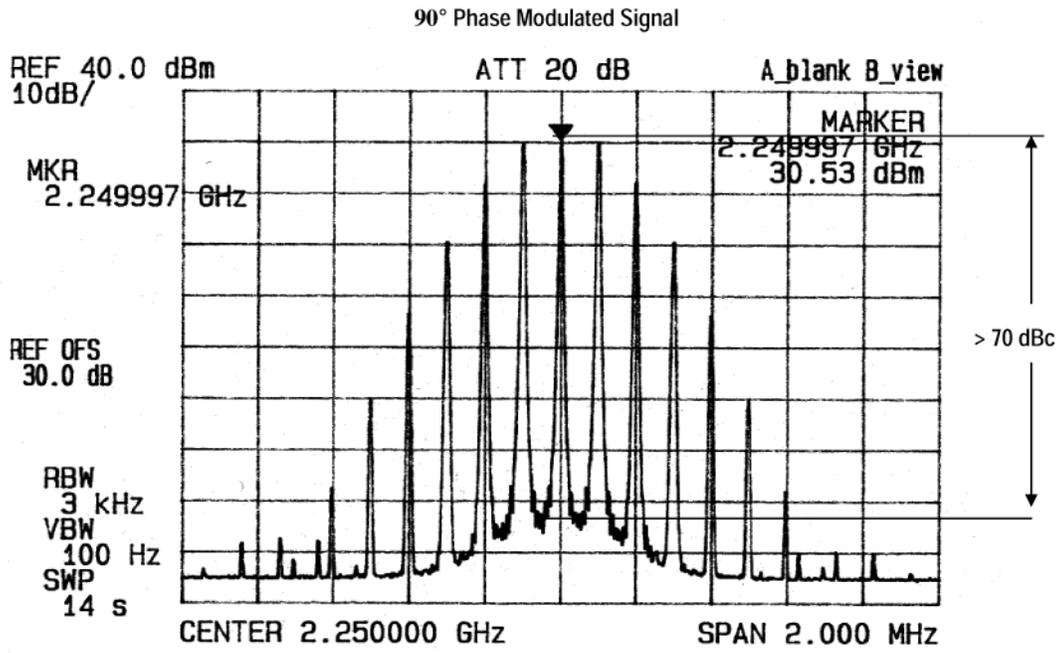
CH1 Markers

1:-25.789 dB  
2.20000 GHz

2:-22.129 dB  
2.30000 GHz

START 2000.000 MHz STOP 2500.000 MHz

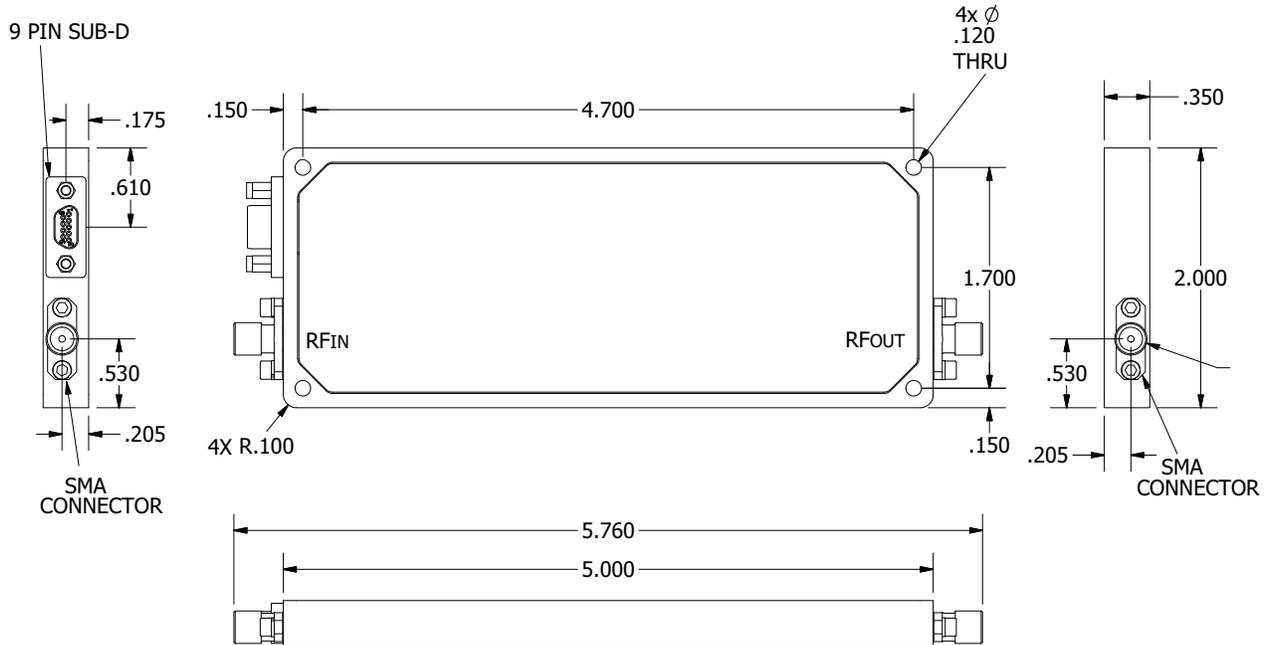
# TYPICAL SPURIOUS EMISSIONS POWER LEVEL



## 9-PIN JACK SUB-D PINOUTS vs. FUNCTIONS

PIN	FUNCTION	PIN	FUNCTION	PIN	FUNCTION
1	NC	4	NC	7	NC
2	NC	5	GND	8	+28V
3	NC	6	GND	9	+28V

## OUTLINE DRAWING



## ORDERING INFORMATION

MODEL NUMBER	HERMETICITY	PACKAGE
PA022023-38	Non-Hermetic	5.0"L x 2.0"W x .35"Ht
PA022023-38-H	Hermetic	

**PLAINVIEW, NEW YORK**  
 Toll Free: 800-THE-1553  
 Fax: 516-694-6715

**INTERNATIONAL**  
 Tel: 805-778-9229  
 Fax: 805-778-1980

**NORTHEAST**  
 Tel: 603-888-3975  
 Fax: 603-888-4585

**SE AND MID-ATLANTIC**  
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 Fax: 321-951-4254

**WEST COAST**  
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