

# Broadband Standard Product PA00104-27 Medium Power Amplifier Module Broadband Power 0.1 GHz to 4 GHz

September 19, 2005

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



## DESCRIPTION

Our new innovative broadband power amplifier designs provide performance without sacrificing output power. The ultra wideband performance of the PA00104-27 is ideal for Electronic Warfare and Broadband Communication applications. The Compact package has field replaceable SMA connectors and removable bottom plate for drop-in mounting.

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

- ❑ >30dBm P1 dB up to 18GHz
- ❑ Ultra Wideband 0.1 to 4 GHz
- ❑ P1dB > 27 dBm
- ❑ 25 dB typical gain
- ❑ Single Supply +10V to +15V
- ❑ Unconditionally Stable
- ❑ Compact Size

## SPECIFICATIONS

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

PARAMETER	SYMBOL	MIN	MAX	UNITS
Operating Temperature – Case	$T_{MO}$	-40	+85	°C
Storage Temperature – Case	$T_{MS}$	-40	+125	°C
Positive Supply Voltage	$V_{PS}$	+10	+15	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, $T_O$	Full Range	-40	+85	°C
Positive Supply Voltage, $V_{PS}$		+10	+15	V

*Aeroflex Plainview*

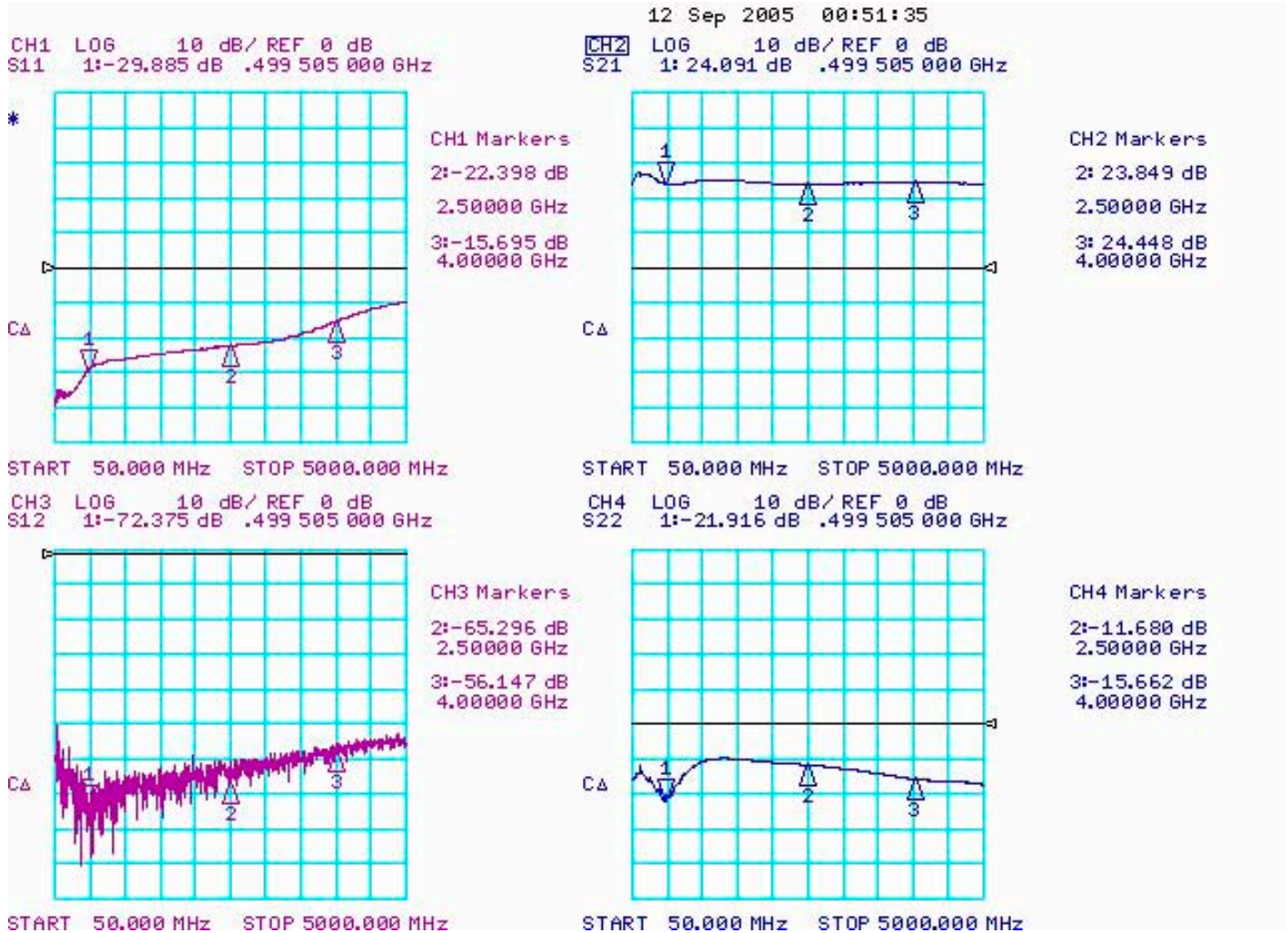
SCD10021 Rev A

# SPECIFICATIONS

## ELECTRICAL CHARACTERISTICS

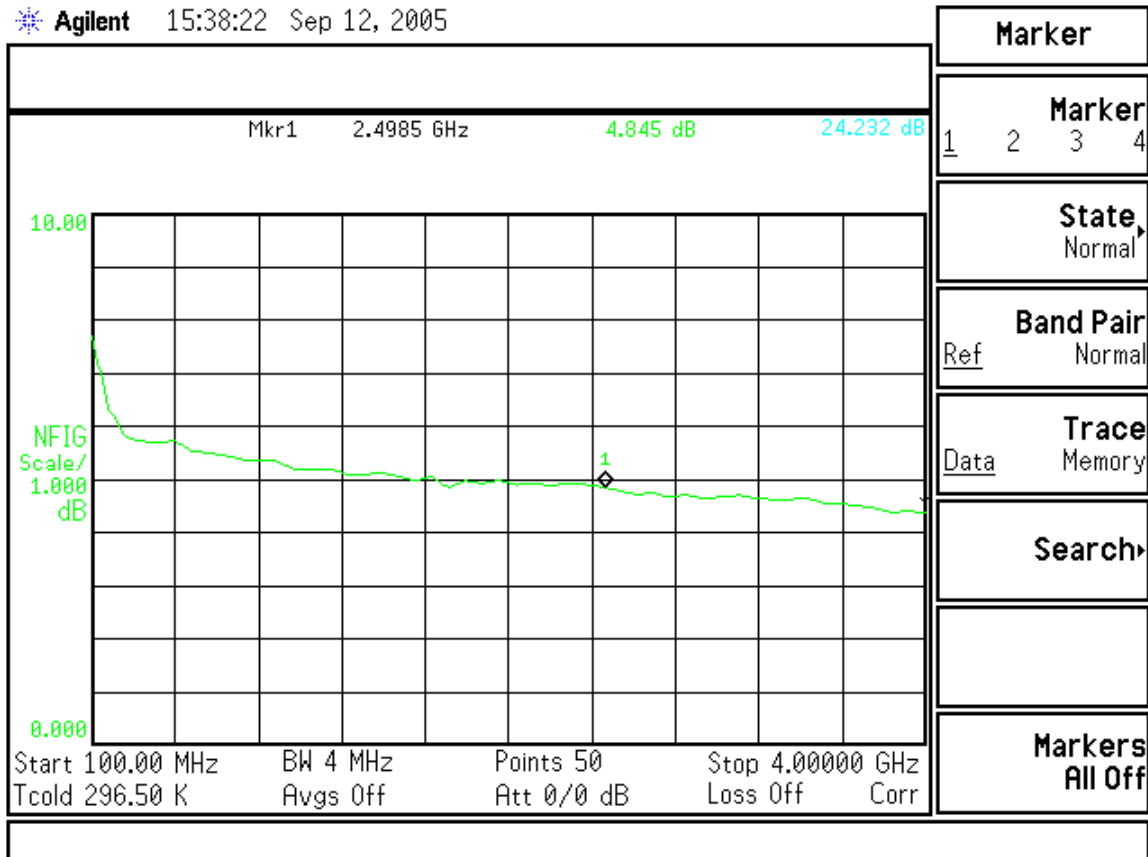
PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Frequency Range		0.1	-	4.0	GHz
Power Output	1dB Compression Point	+27	-	-	dBm
Power Output Variation	Over Frequency & Temperature	-1	-	+1	dBm
Gain		24	25	-	dB
Gain Flatness		-1.5	-	+1.5	dB
Noise Figure	@ 2.5GHz	-	-	5	dB
RF Input Impedance	Reference to 50Ω	-	-	1.6:1	-
RF Output Impedance	Reference to 50Ω	-	-	2.0:1	-
IP3		37	40		dBm
Positive Supply Voltage		+10	-	+15	V
Positive Supply Current +10V, +15V		-	290	-	mA

## TYPICAL S-PARAMETERS



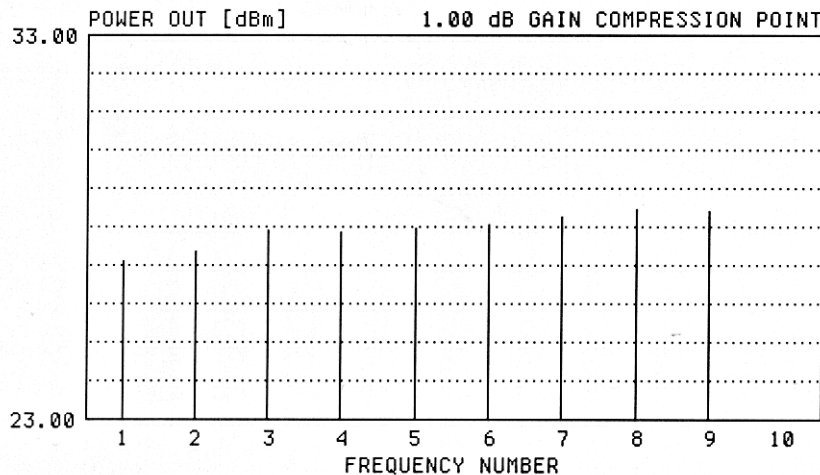
## TYPICAL NOISE FIGURE

Agilent 15:38:22 Sep 12, 2005

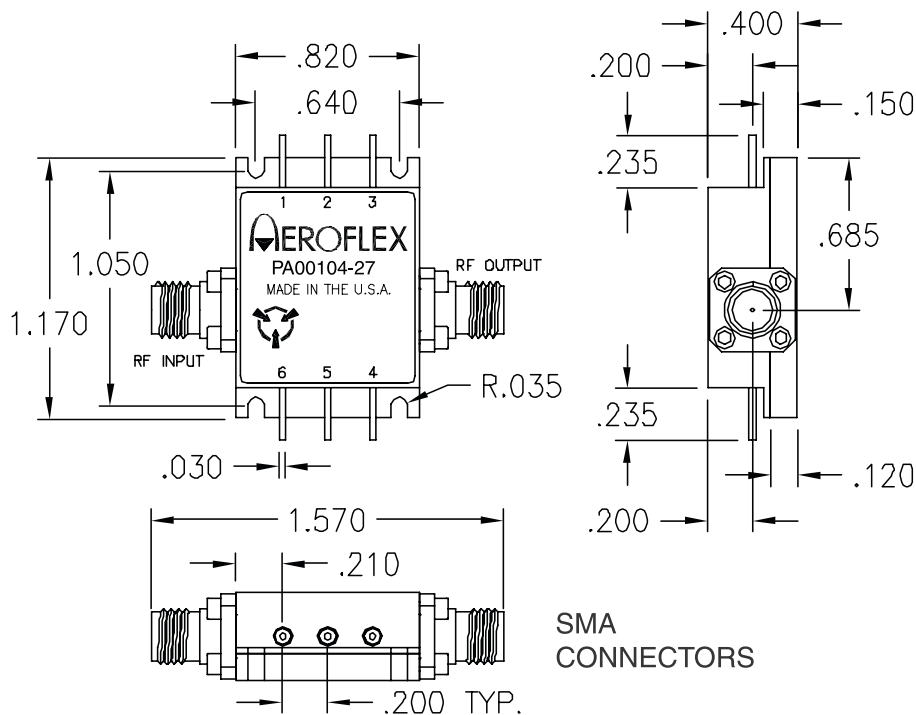


## TYPICAL MULTIPLE FREQUENCY GAIN COMPRESSION POINT

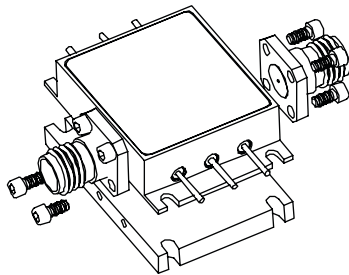
SWEPT	FREQUENCIES	POWER IN	POWER OUT
1.	0.100000 GHz	0.76 dBm	27.10 dBm
2.	0.200000 GHz	0.59 dBm	27.35 dBm
3.	0.500000 GHz	3.90 dBm	27.89 dBm
4.	0.750000 GHz	3.73 dBm	27.84 dBm
5.	1.000000 GHz	3.54 dBm	27.91 dBm
6.	1.500000 GHz	3.61 dBm	28.03 dBm
7.	2.000000 GHz	4.34 dBm	28.21 dBm
8.	3.000000 GHz	4.23 dBm	28.44 dBm
9.	4.000000 GHz	3.43 dBm	28.37 dBm
10.	5.000000 GHz	not found	



## OUTLINE DRAWING



## ISOMETRIC VIEW



## PIN CONNECTIONS

PIN	FUNCTION
1,4	GND
3	V <sub>PS</sub>
2,5,6	No Connection

## ORDERING INFORMATION

MODEL NUMBER	HERMETICITY	PACKAGE
PA00104-27	Non Hermetic	.820L x 1.170W x .40Ht

**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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**WEST COAST**  
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