

Broadband Standard Product
PA020180-3922 GaN High Power Amplifier Module
Broadband Power 2GHz to 18GHz 8Watts CW

March 11, 2009

www.aeroflex.com/bband

Preliminary



DESCRIPTION

Our new industry leading broadband power amplifier designs provide performance without sacrificing output power. The ultra wideband performance of the PA020180-3922 can replace multiple narrowband power amplifiers, there by reducing cost and complexity in microwave systems. This design uses the intrinsic advantage of Gallium Nitride technology to provide broadband power and high efficiency.

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

- ❑ >39dBm PSAT up to 16GHz
- ❑ 22dB Typical Gain
- ❑ IP3 >46dBm @ 7GHz
- ❑ Single Power Supply
- ❑ High Efficiency > 24%
- ❑ Compact Size

SPECIFICATIONS

ABSOLUTE MAXIMUM RATINGS¹

PARAMETER	SYMBOL	MIN	MAX	UNITS
Operating Temperature – Case	T _{MO}	-40	+65	°C
Storage Temperature – Case	T _{MS}	-40	+125	°C
Positive Supply Voltage	V _{PS}	+27	+30	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	-40	+55	°C
Positive Supply Voltage, V _{PS}		+27	+30	V

Aeroflex Plainview

SPECIFICATIONS

ELECTRICAL CHARACTERISTICS @ +25°C

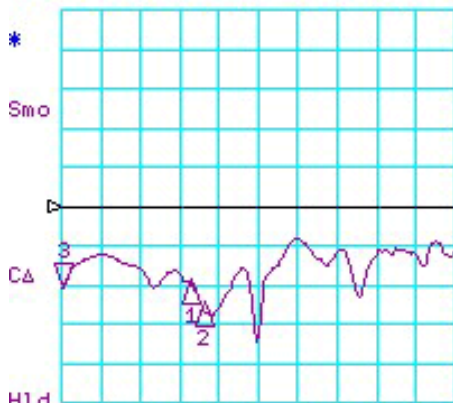
PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Frequency Range		2.0	-	18	GHz
Power Output	3dB Compression Point	-	+38	-	dBm
Power Output Saturated	Saturated Power	-	+39	-	dBm
Gain		-	22	-	dB
Gain Flatness		-3.5	-	+3.5	dB
IP3	@ 7GHz	46	48	-	dBm
RF Input Return Loss	2- 18GHz, Reference to 50 ohms	-	10	-	dB
RF Output Return Loss	4- 18GHz, Reference to 50 ohms	-	12	-	dB
Positive Supply Voltage		+27	+28	+30	V
Positive Supply Current, 28V		-	1.2	-	Amps

TYPICAL S-PARAMETERS

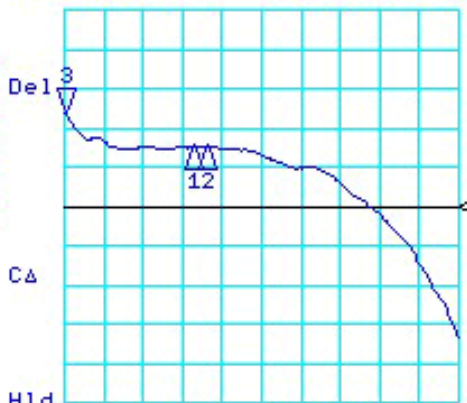
28 Feb 2009 12:08:33

CH1 LOG 10 dB/ REF 0 dB
S11 3:-20.962 dB 2.000 000 000 GHz

CH2 PHA 50 °/ REF 50 °
S21 3:169.95 ° 2.000 000 000 GHz



CH1 Markers
1:-19.231 dB
7.20000 GHz
2:-24.501 dB
7.70000 GHz



CH2 Markers
1:125.33 °
7.20000 GHz
2:126.79 °
7.70000 GHz

H1d
START 2000.000 MHz STOP18000.000 MHz

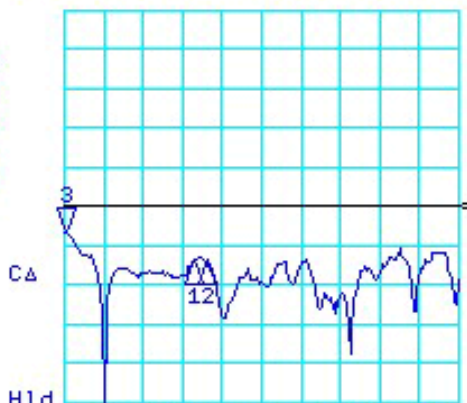
H1d
START 2000.000 MHz STOP18000.000 MHz

CH3 LOG 5 dB/ REF 20 dB
S21 3:19.549 dB 2.000 000 000 GHz

CH4 LOG 10 dB/ REF -.08 dB
S22 3:-6.7470 dB 2.000 000 000 GHz



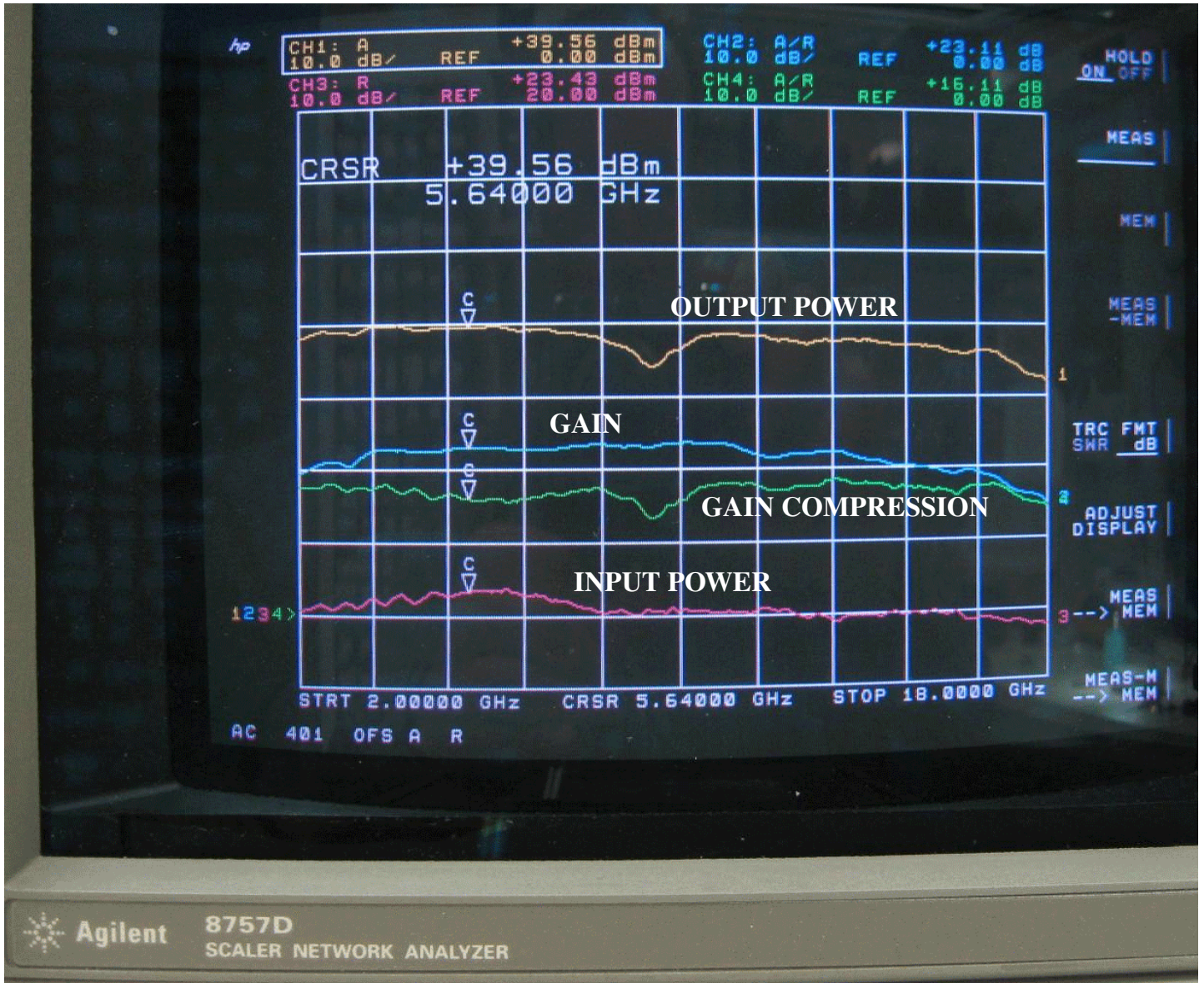
CH3 Markers
1:22.989 dB
7.20000 GHz
2:23.119 dB
7.70000 GHz



CH4 Markers
1:-14.358 dB
7.20000 GHz
2:-14.033 dB
7.70000 GHz

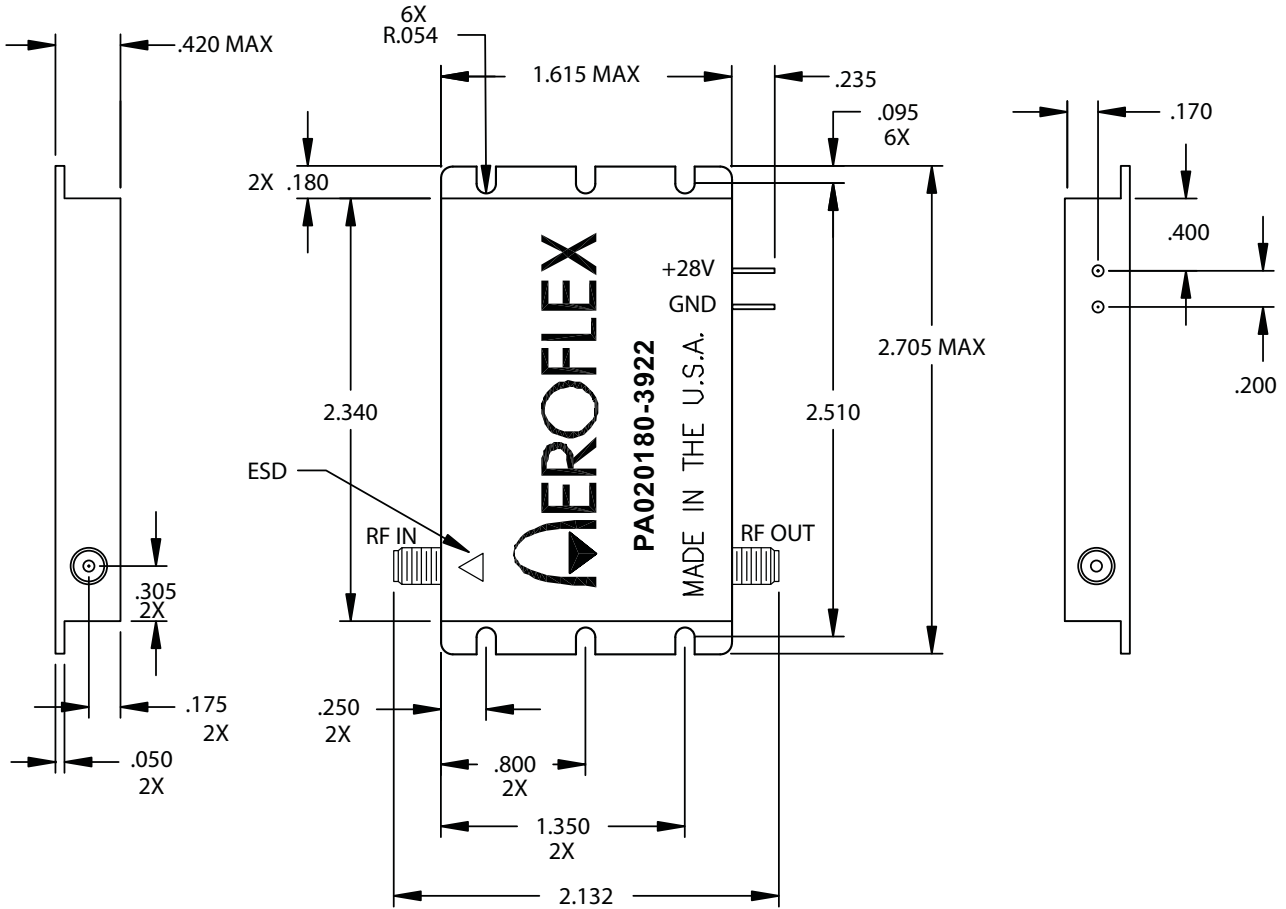
H1d
START 2000.000 MHz STOP18000.000 MHz

H1d
START 2000.000 MHz STOP18000.000 MHz



Measured Data Broadband GaN Amplifier 2 to 18 GHZ PA020180-3922

OUTLINE DRAWING



ORDERING INFORMATION

MODEL NUMBER	HERMETICITY	PACKAGE
PA020180-3922	Non-Hermetic	2.70L x 1.615W x .42Ht

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
 Tel: 321-951-4164
 Fax: 321-951-4254

WEST COAST
 Tel: 949-362-2260
 Fax: 949-362-2266

CENTRAL
 Tel: 719-594-8017
 Fax: 719-594-8468

www.aeroflex.com info-ams@aeroflex.com



Aeroflex Microelectronic Solutions reserves the right to change at any time without notice the specifications, design, function, or form of its products described herein. All parameters must be validated for each customer's application by engineering. No liability is assumed as a result of use of this product. No patent licenses are implied.



Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused