

**50 dB Gain High Power High Gain Amplifier at
 20 Watt P1dB Operating From 1.7 GHz to 2 GHz with
 60 dBm IP3 and SMA**

The SPA-020-50-20-SMA is a wideband GaAs amplifier module that is ideal for wideband communications, pulsed applications including radar, and medical and laboratory applications. It produces 4 Watts of linear, 10 MHz LTE. The high gain power coaxial amplifier operating in the 1.7 to 2.0 GHz frequency range. The amplifier offers 40 dB typical small signal gain with the gain flatness of ± 0.5 dB typical. The amplifier has several protection circuits including load VSWR protection, low and high bias protection, 1 reverse bias protection and thermal protection. The connectorized SMA module is unconditionally stable and includes built-in voltage regulation, bias sequencing, and requires typically a +12V DC power supply. The amplifier operates over the temperature range of -10°C and +85°C.



Features:

- 1.7 GHz to 2.0 GHz Frequency Range
- P1dB 43 dBm typ
- Small Signal Gain: 50 dB min
- Gain Flatness: ± 0.5 typical
- 50 Ohms Input and Output Matched
- Unconditionally Stable
- Regulated Supply & Bias Sequencing
- Overvoltage Protection
- Thermal Protection

Electrical Specifications (TA = +25°C , DC Voltage = 12Volts)

Description	Min	Typ	Max	Unit
Frequency Range	1.7		2	GHz
Small Signal Gain		50		dB
Gain Flatness		± 0.5		dB
P1dB	+41	+43		dBm
Output 3rd Intercept Point		+60		dBm
Input Return Loss	-15	-20		dB
Operating DC Voltage		12		Volts
Quiescent Current		6,000		mA
Operating Temperature Range	-10		+85	°C

Configuration

- Connector 1 SMA Female
- Connector 2 SMA Female

Environmental Specifications

Temperature

- Operating Range -10 to +85 deg C
- Storage Range -55 to +100 deg C

- Humidity Shock 95 MIL-STD-810F Method 516.5
- Vibration MIL-STD-810F Method 516.5
- Altitude MIL-STD-810F Method 500.4

Compliance Certifications (visit www.FairviewMicrowave.com for current document)

Plotted and Other Data

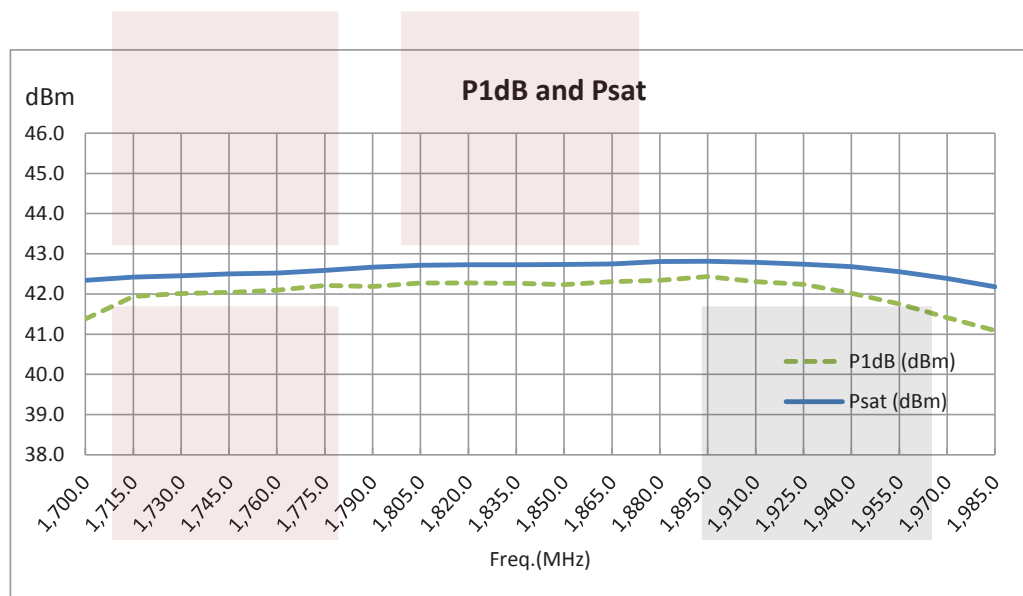
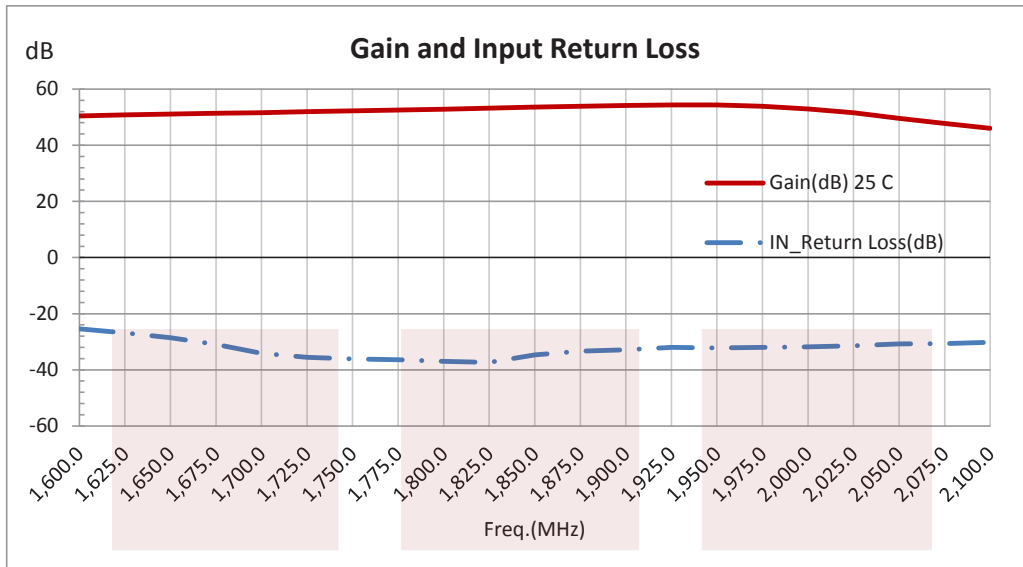
- Notes:
- Values at 25 °C, sea level
 - ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.
 - Heat Sink Required for Proper Operation, Unit is cooled by conduction to heat sink.

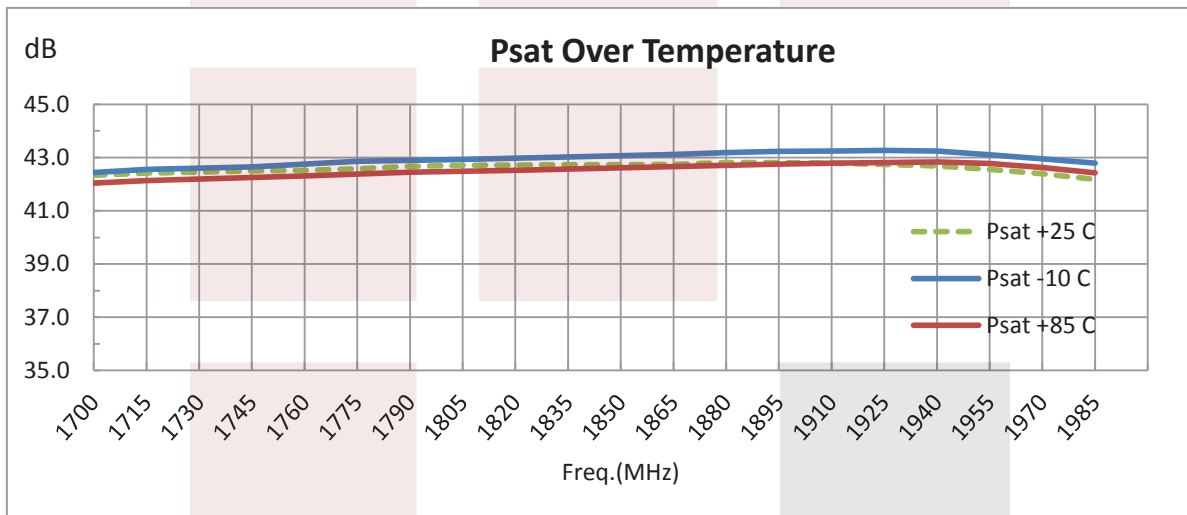
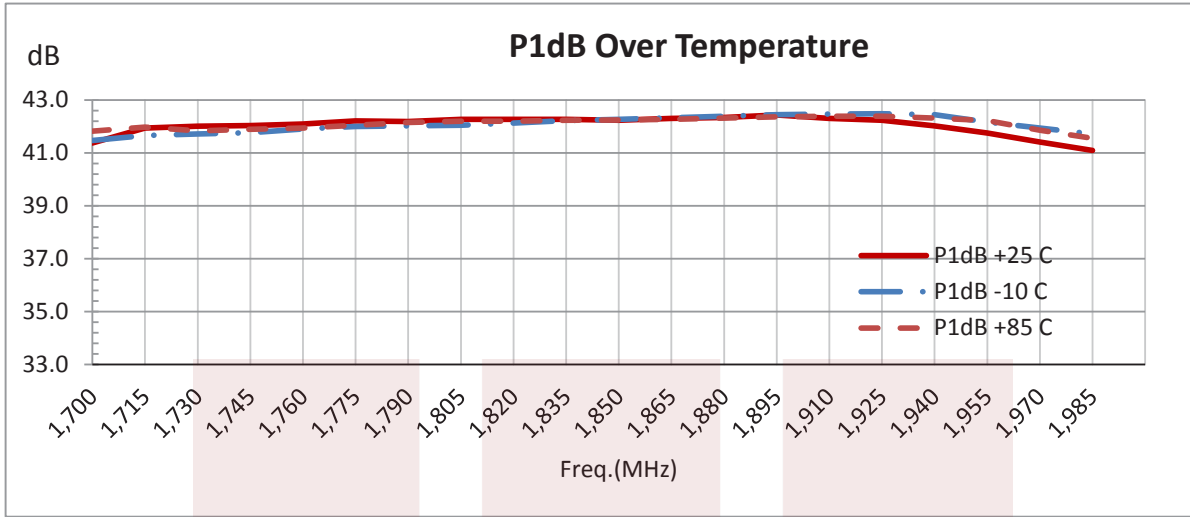
Applications:

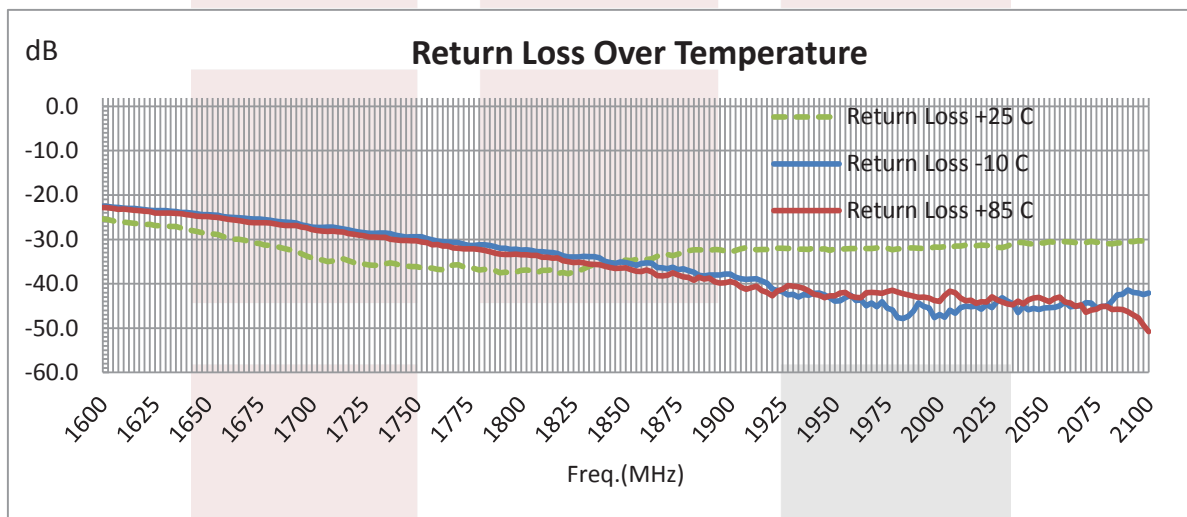
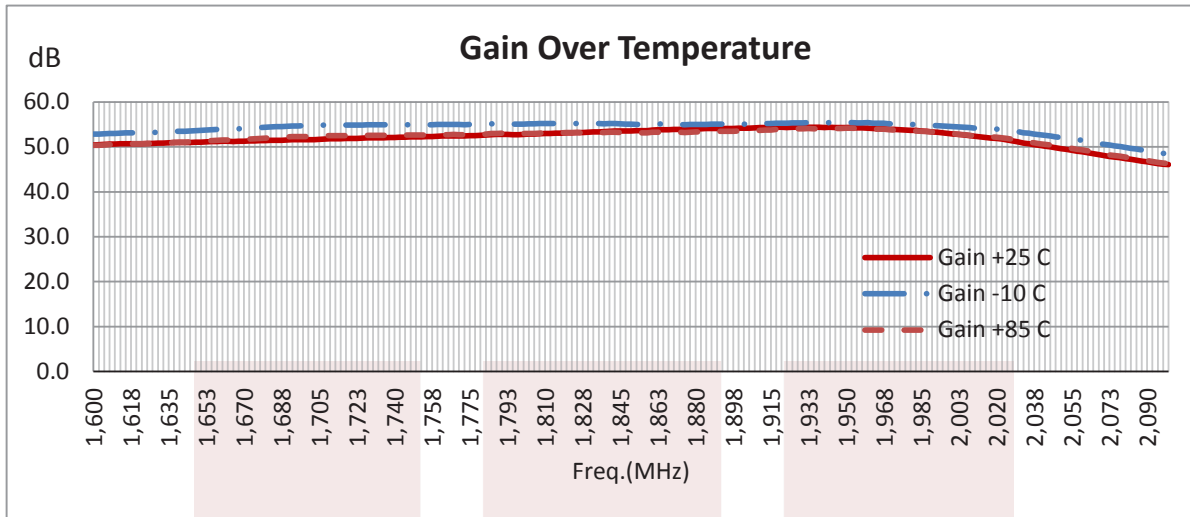
- L-band Military Radar
- Commercial Air Traffic Control
- Weather & Earth Observation Satellites
- Radar & Communication Systems
- High Gain Driver Power Amplifier
- High Gain Output Power Amplifier

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Typical Performance Data





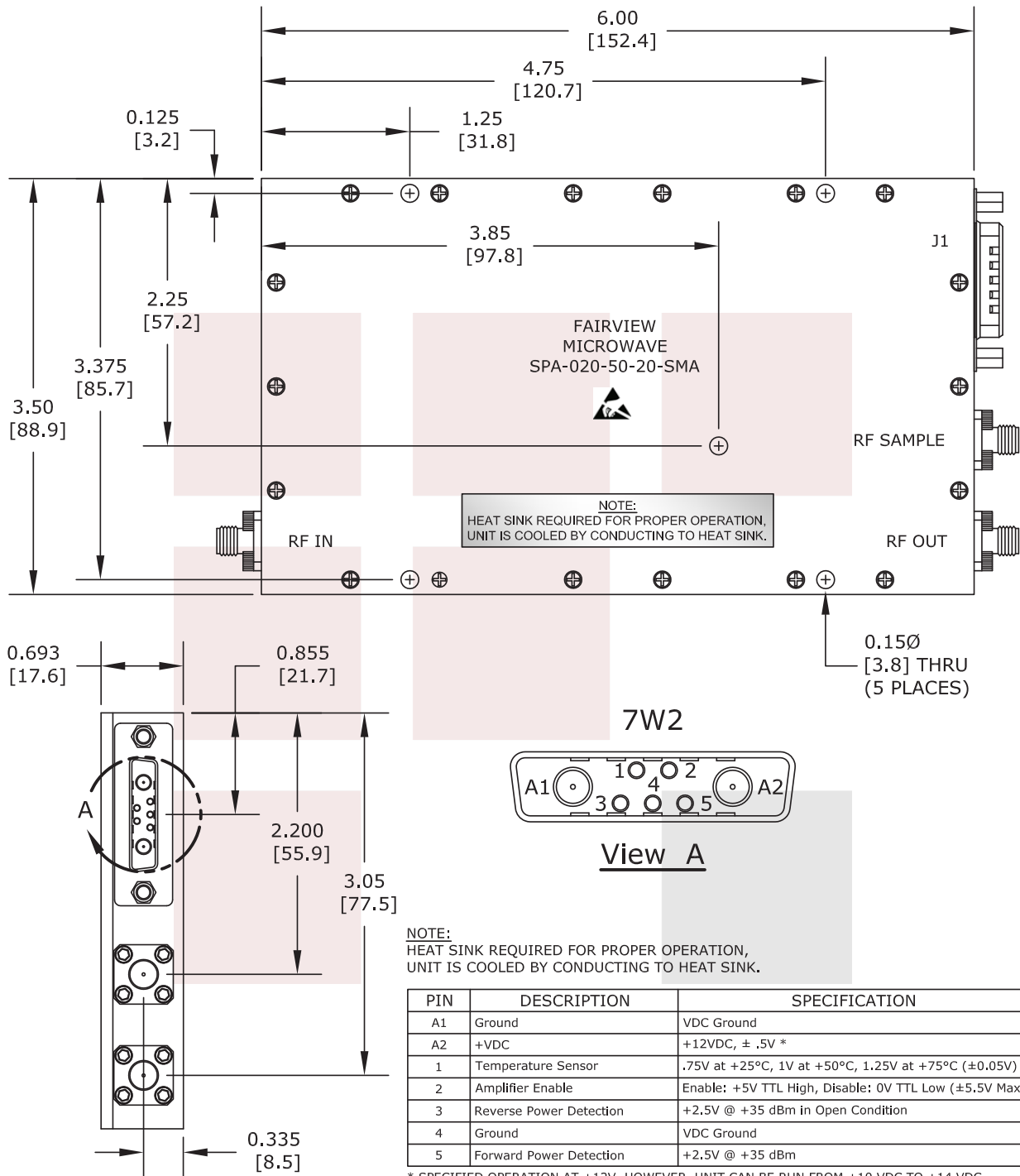


50 dB Gain High Power High Gain Amplifier at 20 Watt P1dB Operating From 1.7 GHz to 2 GHz with 60 dBm IP3 and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [50 dB Gain High Power High Gain Amplifier at 20 Watt P1dB Operating From 1.7 GHz to 2 GHz with 60 dBm IP3 and SMA SPA-020-50-20-SMA](http://www.fairviewmicrowave.com/50db-high-power-high-gain-amplifier-20watt-spa-020-50-20-sma)

URL: <http://www.fairviewmicrowave.com/50db-high-power-high-gain-amplifier-20watt-spa-020-50-20-sma-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.



NOTE:
HEAT SINK REQUIRED FOR PROPER OPERATION,
UNIT IS COOLED BY CONDUCTING TO HEAT SINK.

PIN	DESCRIPTION	SPECIFICATION
A1	Ground	VDC Ground
A2	+VDC	+12VDC, ± .5V *
1	Temperature Sensor	.75V at +25°C, 1V at +50°C, 1.25V at +75°C (±0.05V)
2	Amplifier Enable	Enable: +5V TTL High, Disable: 0V TTL Low (±5.5V Max)
3	Reverse Power Detection	+2.5V @ +35 dBm in Open Condition
4	Ground	VDC Ground
5	Forward Power Detection	+2.5V @ +35 dBm

* SPECIFIED OPERATION AT +12V, HOWEVER, UNIT CAN BE RUN FROM +10 VDC TO +14 VDC.

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NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.
2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.
3. DIMENSIONS ARE IN INCHES [mm].

TITLE
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P1dB Operating From 1.7 GHz to 2 GHz with 60 dBm
IP3 and SMA

DWG NO	SPA-020-50-20-SMA	CAGE CODE	3FKR5
CAD FILE	091814	SHEET	SCALE N/A SIZE A 2233