

**40 dB Gain High Power High Gain Amplifier at
 13 Watt P1dB Operating From 800 MHz to 2.5 GHz
 with 50 dBm IP3 and SMA**

The SPA-025-40-12-SMA is a wideband GaAs amplifier module that is ideal for wideband communications, pulsed applications including radar, and medical and laboratory applications. It produces 3 Watts of linear, 10 MHz LTE. The high gain power coaxial amplifier operating in the 0.8 to 2.5 GHz frequency range. The amplifier offers 40 dB typical small signal gain with the gain flatness of ± 2 dB typical. The amplifier has several protection circuits including load VSWR protection, low and high bias protection, 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 -40°C and $+85^{\circ}\text{C}$ and provides an RF Sample Port Output.



Features:

- 0.8 GHz to 2.5 GHz Frequency Range
- P1dB 41 dBm typ
- Small Signal Gain: 40 dB typ
- Gain Flatness: ± 2 typ
- 50 Ohms Input and Output Matched
- Unconditionally Stable
- Regulated Supply & Bias Sequencing
- Overvoltage Protection
- Thermal Protection
- RF Sample Port

Electrical Specifications (TA = $+25^{\circ}\text{C}$, DC Voltage = 12Volts)

Description	Min	Typ	Max	Unit
Frequency Range	0.8		2.5	GHz
Small Signal Gain	38	40		dB
Gain Flatness		± 2		dB
P1dB	+39	+41		dBm
RF Sample Port	+29	+30	+31	dB
Output 3rd Order Intercept Point		+50		dBm
Input Return Loss	-12	-14		dB
Rise/Fall Time		<1		usec
Operating DC Voltage	11	12	13	Volts
Standby DC Current		400		mA
Quiescent Current		5,500		mA
Operating Temperature Range	-40		+85	$^{\circ}\text{C}$

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

Protections

ENVIRONMENTAL / PROTECTIONS			
PARAMETER	MIN	MAX	UNIT
Operating Temp. (Housing Temp.)	-40	+85	$^{\circ}\text{C}$
Storage Temp Range	-60	+100	$^{\circ}\text{C}$
Humidity Range	0-100		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input	+3		dBm
Load VSWR @ P1dB	Open / Short Output Protection		--
PA Baseplate Shutoff Temperature	+ 90		$^{\circ}\text{C}$

Mechanical Specifications

Size	
Length	6 in [152.4 mm]
Width	3.5 in [88.9 mm]
Height	0.69 in [17.53 mm]
Weight	1.088 lbs [493.51 g]
Input Connector	SMA Female
Output Connector	SMA Female
Cooling	HEATSINK REQUIRED use FMAMC5013 OR FMAMC5013F

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Environmental Specifications

Temperature

Operating Range -40 to +85 deg C
Storage Range -60 to +100 deg C

Humidity 100% Non-Condensing
Shock MIL-STD-810
Vibration MIL-STD-810

Compliance Certifications (see [product page](#) for current document)

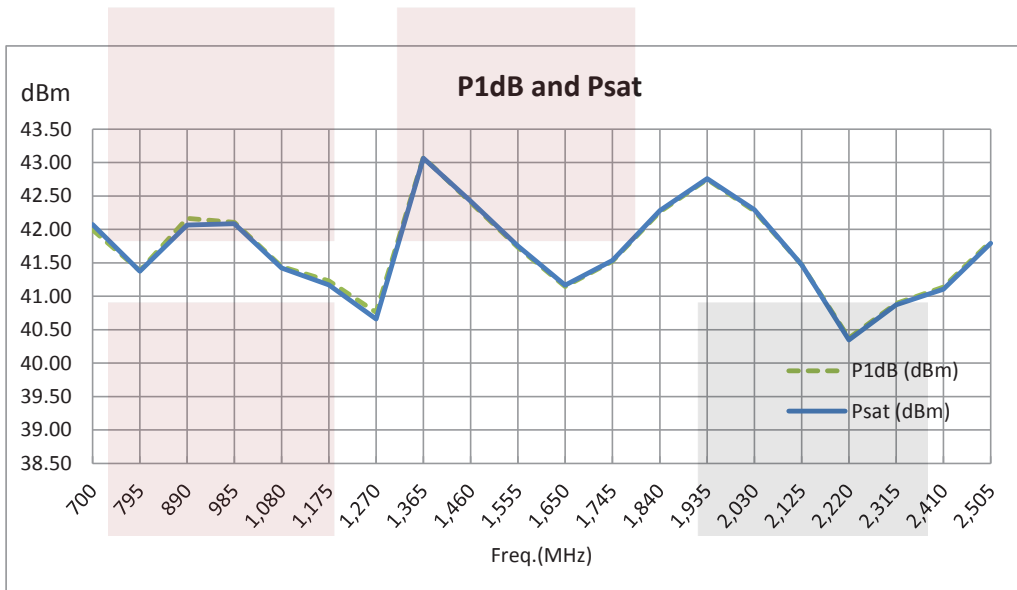
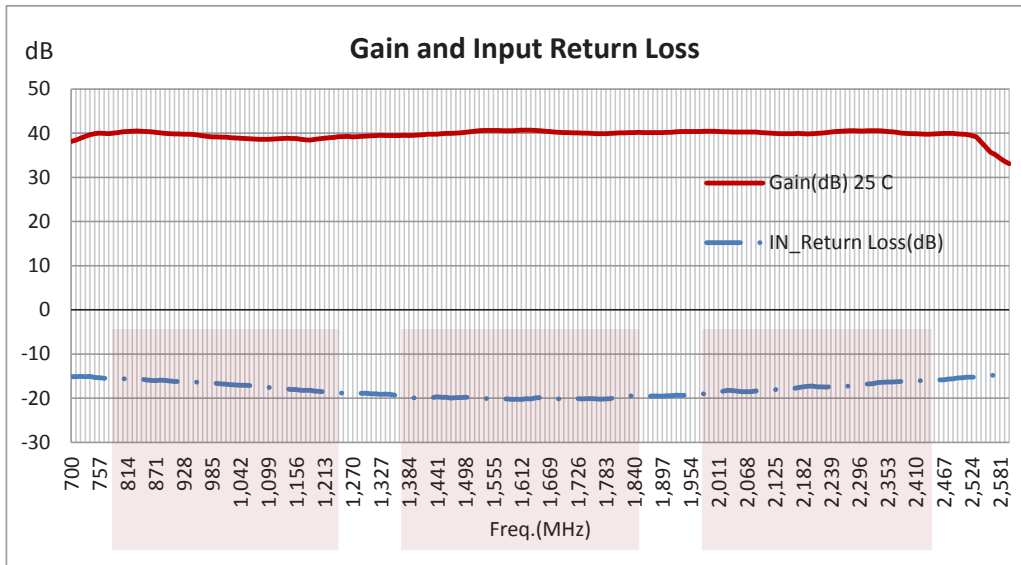
Plotted and Other Data

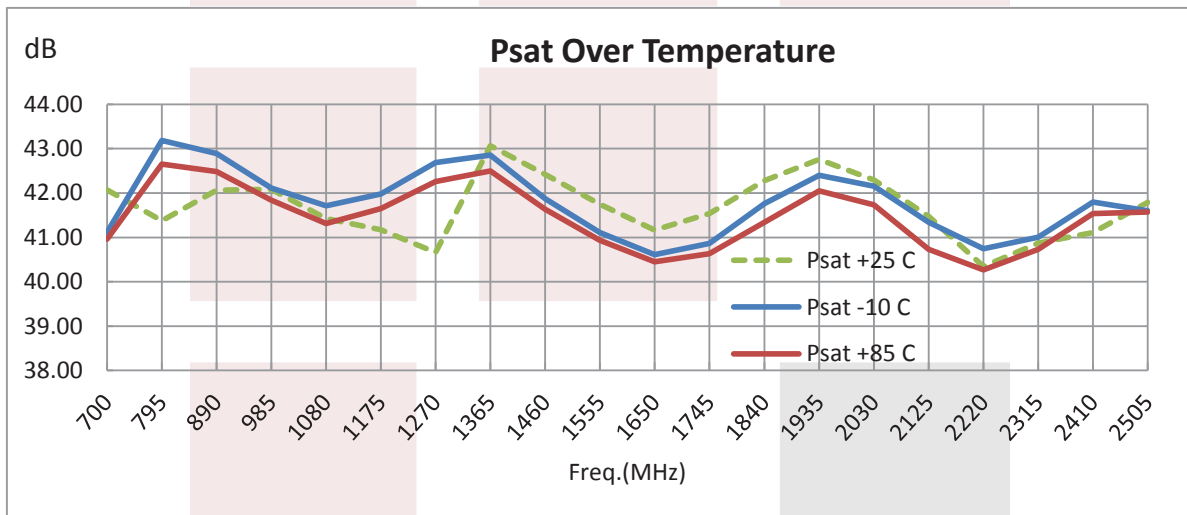
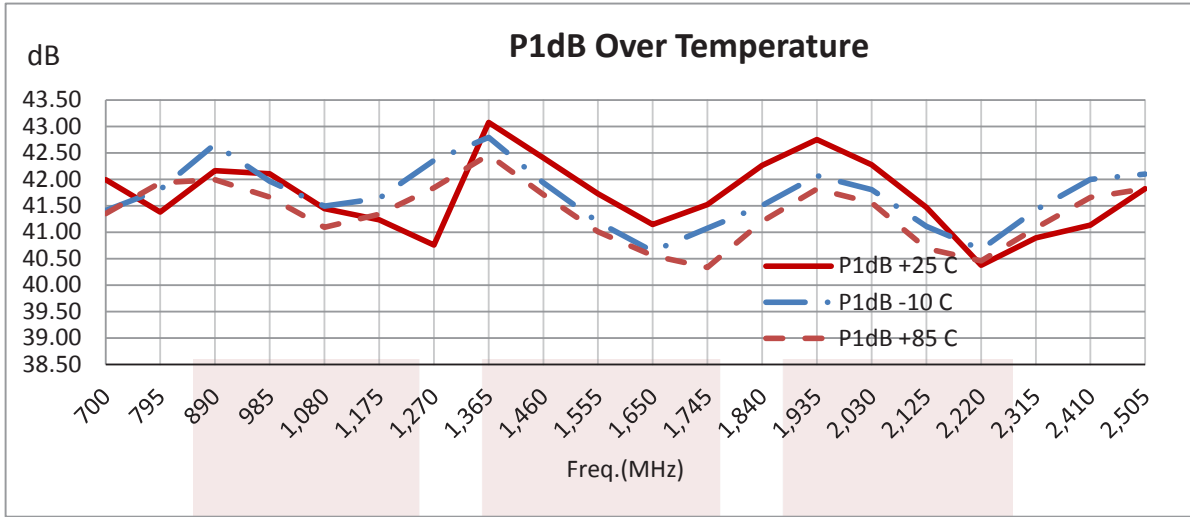
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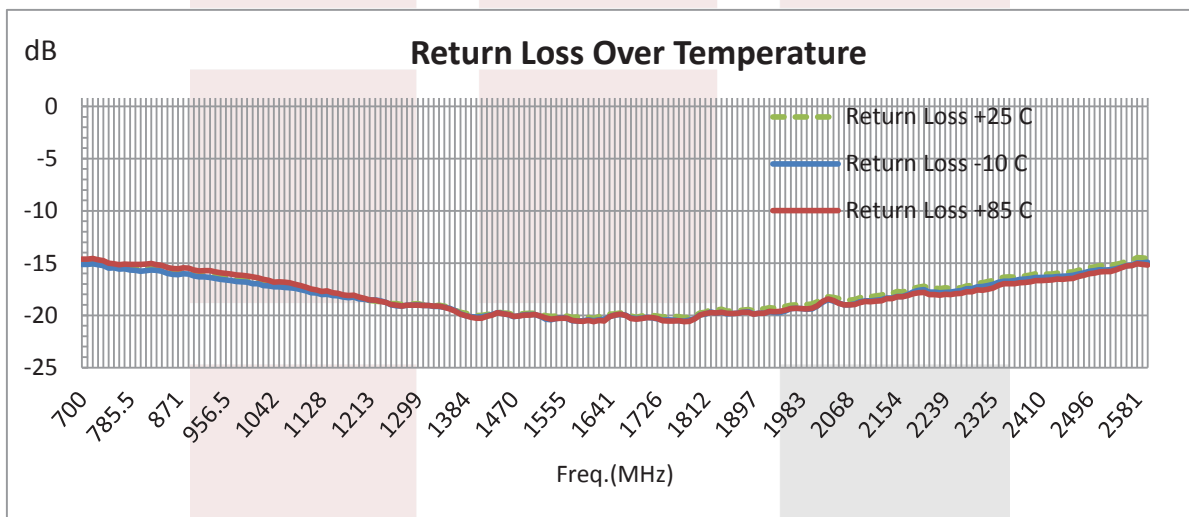
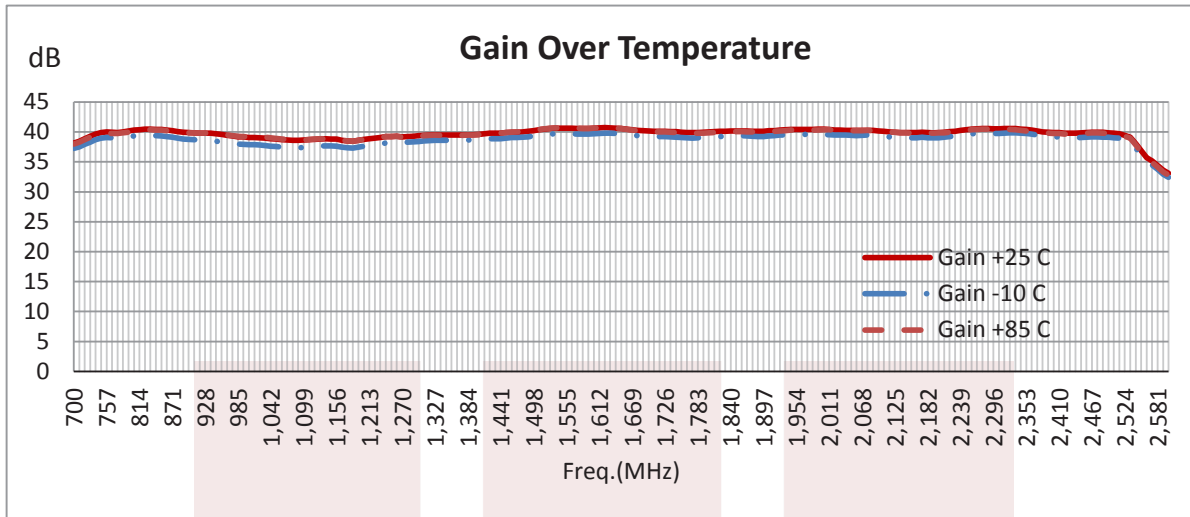
- Values at 25 °C, sea level
- ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.
- Heat Sink Required for Proper Operation, Unit is cooled by conduction to heat sink.



Typical Performance Data





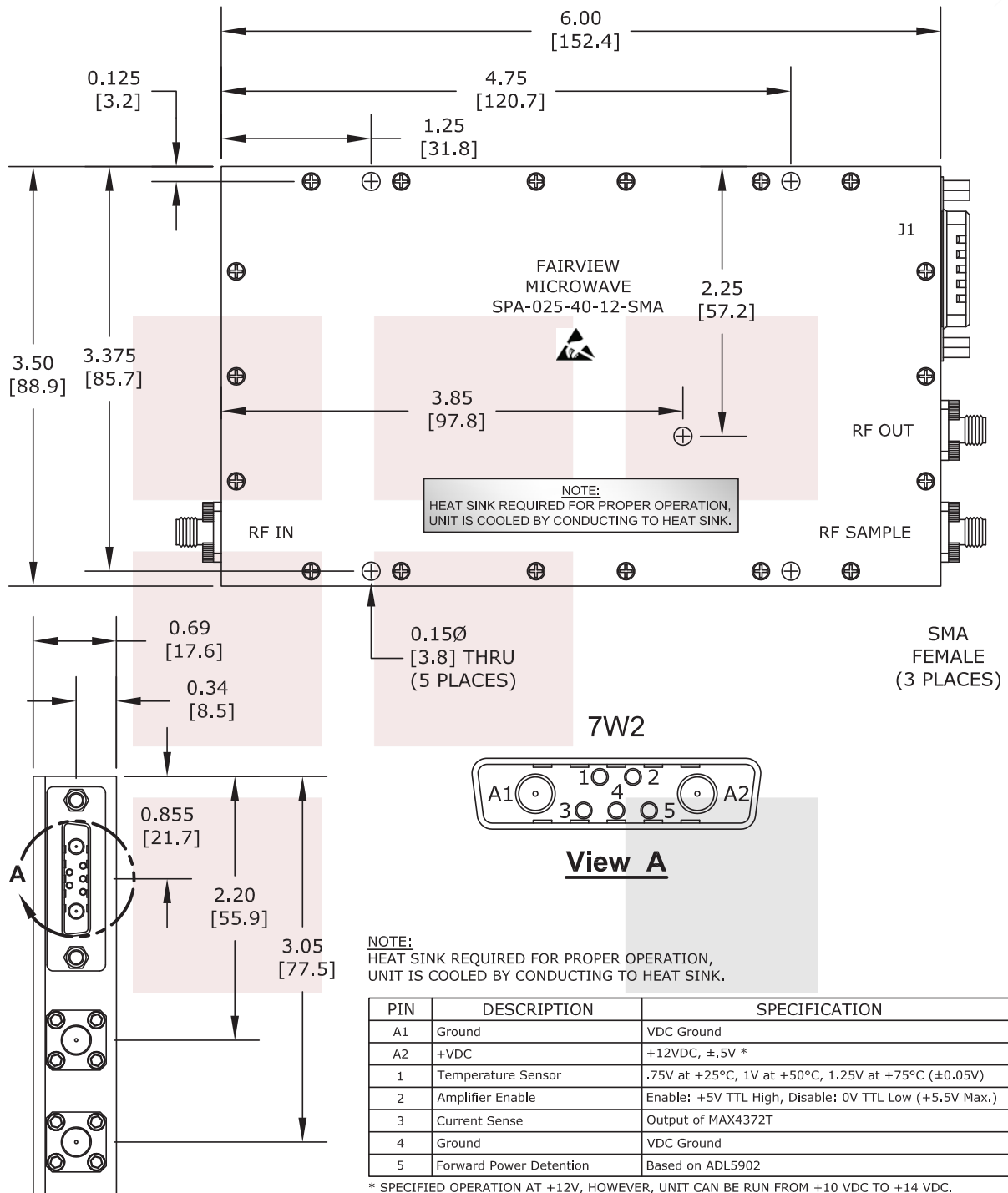


40 dB Gain High Power High Gain Amplifier at 13 Watt P1dB Operating From 800 MHz to 2.5 GHz with 50 dBm IP3 and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [40 dB Gain High Power High Gain Amplifier at 13 Watt P1dB Operating From 800 MHz to 2.5 GHz with 50 dBm IP3 and SMA SPA-025-40-12-SMA](https://www.fairviewmicrowave.com/40db-high-power-high-gain-amplifier-13watt-spa-025-40-12-sma)

URL: <https://www.fairviewmicrowave.com/40db-high-power-high-gain-amplifier-13watt-spa-025-40-12-sma-p.aspx>

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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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DWG NO SPA-025-40-12-SMA CAGE CODE 3FKR5
CAD FILE 051915 SHEET SCALE N/A SIZE A 2233