

500 MHz to 18 GHz, Medium Power Broadband Amplifier with 23 dBm, 27 dB Gain and SMA

SPA-180-27-002-SMA is a broadband GaAs PHEMT MMIC-based coaxial power amplifier, operating in the 0.5 to 18 GHz frequency range. The amplifier offers 23 dBm of P1dB and 32 dB small signal gain, with the excellent gain flatness of ± 1 dB along with an outstanding 35 dBm of IP3 performance. This power amplifier requires only a single positive DC supply, is unconditionally stable, operates over the temperature range of -40°C to 75°C , and characterized by a light weight (28 g) and small size (1.5"x1.0"x0.4").

Electrical Specifications (TA = $+25^{\circ}\text{C}$, DC Voltage = 12Volts, DC Current = 330mA)

Description	Min	Typ	Max	Unit
Frequency Range	0.5		18	GHz
Gain	24	27	29.5	dB
Gain Flatness		± 2.3	± 2.5	dB
Gain Variance at OTR*		± 2		dB
P1dB	+20	+23		dBm
IP3	+30	+35		dBm
Spurious			-60	dBc
Noise Figure at 500 to 700 MHz		4	4.5	dB
Noise Figure at 0.7 to 18 GHz		2.5	3.5	dB
Input VSWR		2:1	2.5:1	
Output VSWR		2:1	2.5:1	
Operating DC Voltage		12		Volts
Operating DC Current	300	330	500	mA
Operating Temperature Range (OTR)	-40		+75	$^{\circ}\text{C}$

*OTR= Base Plate Operating Temperature Range

Absolute Maximum Rating

Parameter	Rating	Units
Source Voltage	+13	Volts
RF input Power	+15	dBm
Operating Temperature (base-plate)	-40 to +75	$^{\circ}\text{C}$
Storage Temperature	-55 to +125	$^{\circ}\text{C}$



ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.



Features:

- 0.5 to 18 GHz Frequency Range
- P1dB: 23 dBm
- Small Signal Gain: 27 dB
- Gain Flatness: ± 2.3 dB
- Gain Variation Over the Temperature Range: ± 2 dB
- Output IP3: 35 dBm
- Noise Figure Range: 2.5-4 dB
- 50 Ohm Input and Output Matched
- -40 to $+75^{\circ}\text{C}$ Operating Temperature
- Unconditionally Stable
- Single DC Positive Supply
- Built-in DC Voltage Regulator
- Small Size & Light Weight

Applications:

- Laboratory Applications
- R&D Labs
- Radar Systems
- Electronic Warfare
- Telecom Infrastructure
- Test Instrumentation
- Military & Space
- Communication Systems
- Satellite Communications
- Wireless Communications
- Unmanned Systems
- Microwave Radio Systems
- Power Amplifier
- Low Noise Amplifier
- General Purpose Amplification
- RF Front Ends

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Configuration

- Connector 1 SMA Female
- Connector 2 SMA Female

Environmental Specifications

Temperature

- Operating Range -40 to +75 deg C
- Storage Range -45 to +125 deg C

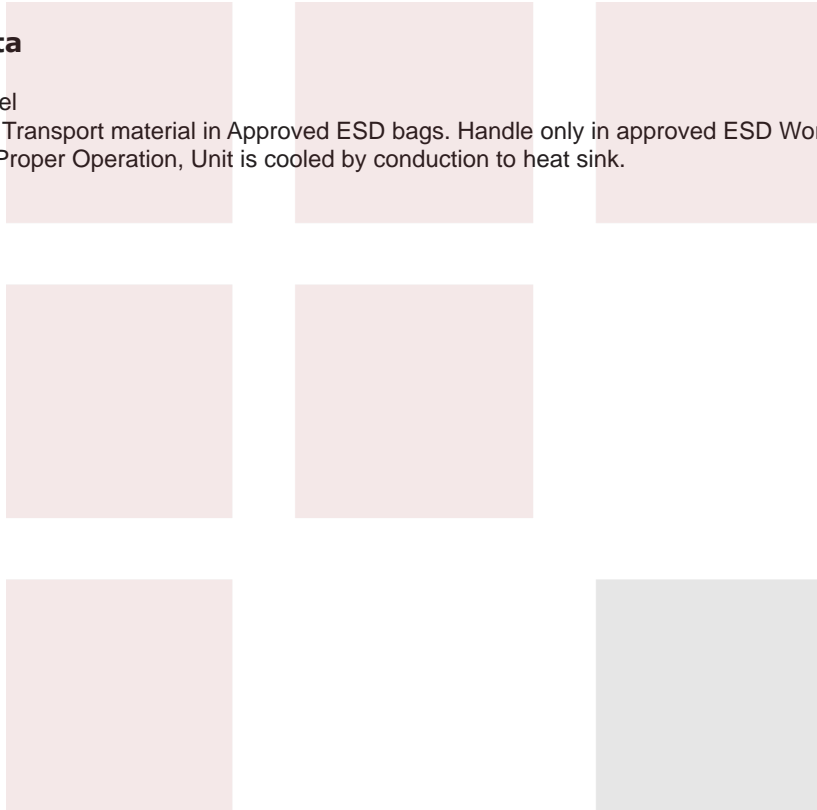
Compliance Certifications (visit www.FairviewMicrowave.com for current document)

- RoHS Compliant Yes

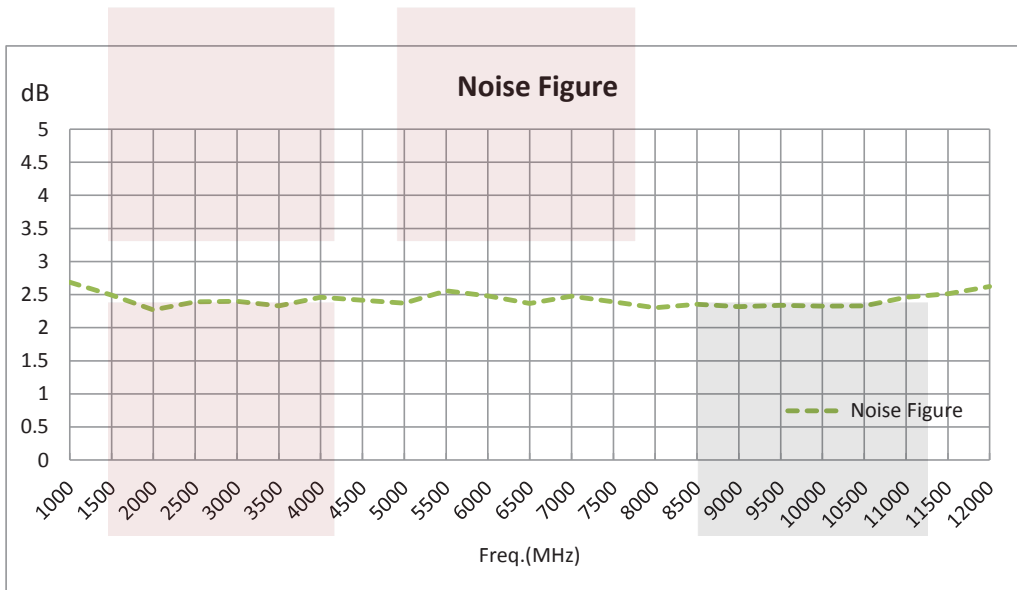
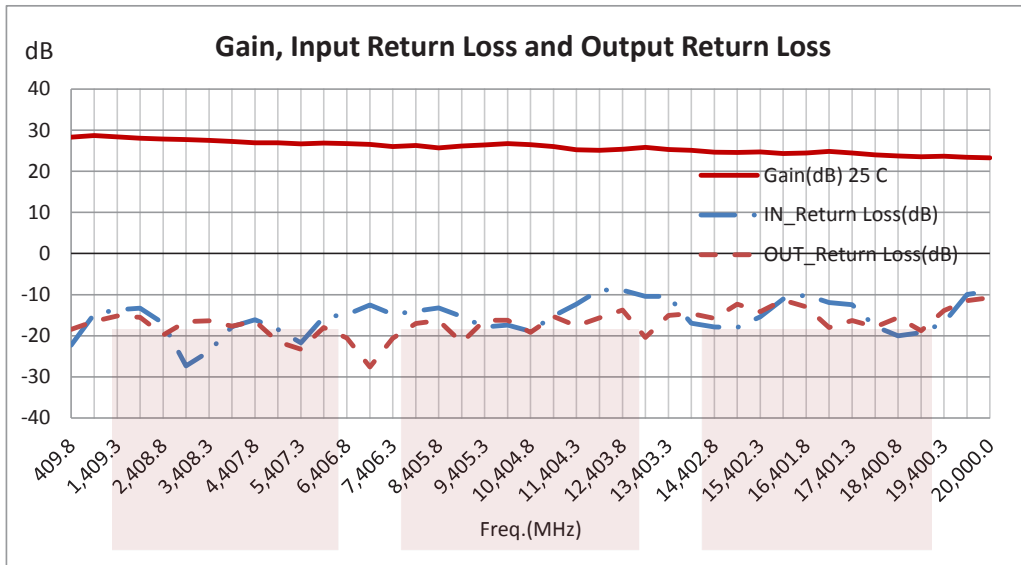
Plotted and Other Data

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.



Typical Performance Data



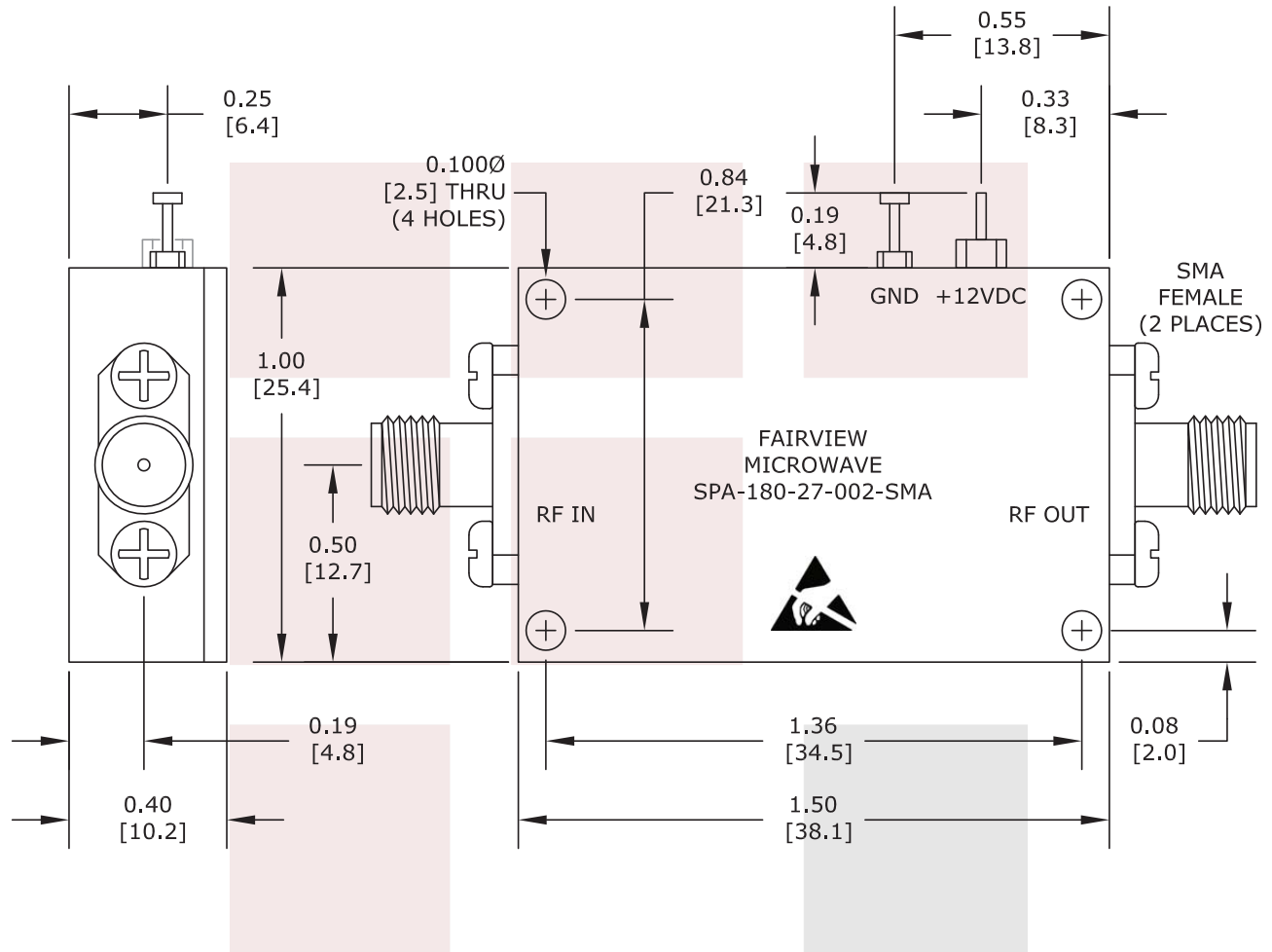
500 MHz to 18 GHz, Medium Power Broadband Amplifier with 23 dBm, 27 dB Gain and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [500 MHz to 18 GHz, Medium Power Broadband Amplifier with 23 dBm, 27 dB Gain and SMA SPA-180-27-002-SMA](#)

URL: <http://www.fairviewmicrowave.com/500-mhz-18-ghz-medium-power-broadband-amplifier-spa-180-27-002-sma-p.aspx>

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

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TITLE 500 MHz to 18 GHz, Medium Power Broadband Amplifier with 23 dBm, 27 dB Gain and SMA		DWG NO SPA-180-27-002-SMA		CAGE CODE 3FKR5	
CAD FILE 082914		SHEET	SCALE N/A	SIZE A	2233