

2 GHz to 18 GHz, Medium Power Broadband Amplifier with 1 Watt, 37 dB Gain and SMA

SPA-180-37-01-SMA-B is a broadband GaAs PHEMT MMIC-based coaxial power amplifier, operating in the 2 to 18 GHz frequency range. The amplifier offers 30.5 dBm typ of P1dB and 37 dB typ small signal gain, with the gain flatness of ± 1.5 dB typ along with an outstanding 42 dBm typ 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 $+75^{\circ}\text{C}$.

Electrical Specifications (TA= 25°C, VDC1 = 15 Vdc)

Description	Min	Typ	Max	Unit
Frequency Range	2		18	GHz
Gain	34	37	40	dB
Gain Flatness		± 1.5	± 2.5	dB
Gain Variance at OTR*		± 2		dB
P1dB	+29.5	+30.5		dBm
Input Power			+15	dBm
IP3		+42		dBm
Reverse Isolation		60		dB
Spurious		-60		dBc
Noise Figure at 2 to 15 GHz		2.5	3	dB
Noise Figure at 15 to 18 GHz		3	3.5	dB
Input VSWR		1.8:1	2.2:1	
Output VSWR		1.8:1	2.2:1	
Operating DC Voltage 1	14.5	15	16.5	Volts
Operating DC Current	700	850	1,200	mA
Operating Temperature Range (OTR)	-40		+75	$^{\circ}\text{C}$

*OTR= Base Plate Operating Temperature Range

Absolute Maximum Rating

Parameter	Rating	Units
Source Voltage	+18	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.

Mechanical Specifications

Size	
Length	1.9 in [48.26 mm]
Width	1.5 in [38.1 mm]
Height	0.5 in [12.7 mm]
Input Connector	SMA Female
Output Connector	SMA Female



Features:

- 2 to 18 GHz Frequency Range
- P1dB: 30.5 dBm typ
- Small Signal Gain: 37 dB typ
- Gain Flatness: ± 1.5 dB typ
- Output IP3: 42 dBm typ
- Noise Figure Range: 2.5-3.5 dB typ
- 50 Ohm Input and Output Matched
- Unconditionally Stable
- Single DC Positive Supply with built-in DC Voltage Regulator
- Small Size & Light Weight

Applications:

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

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Environmental Specifications

Temperature

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

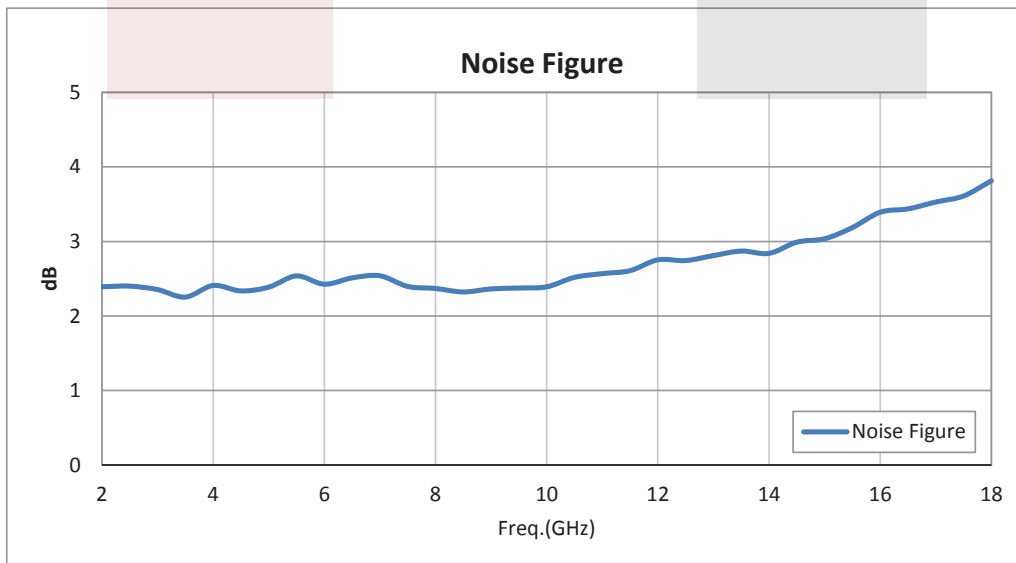
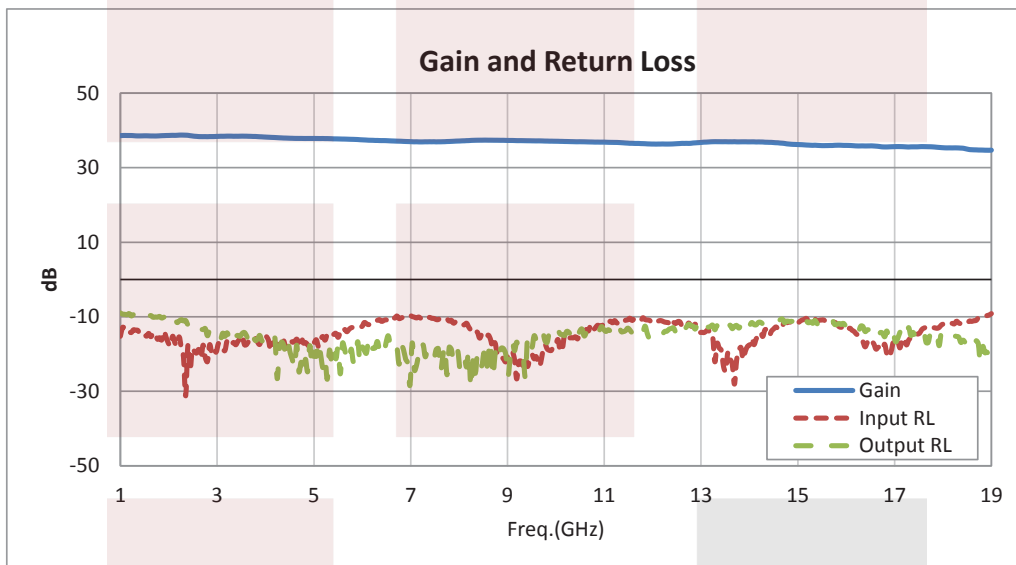
Compliance Certifications (see [product page](#) for current document)

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.

Typical Performance Data



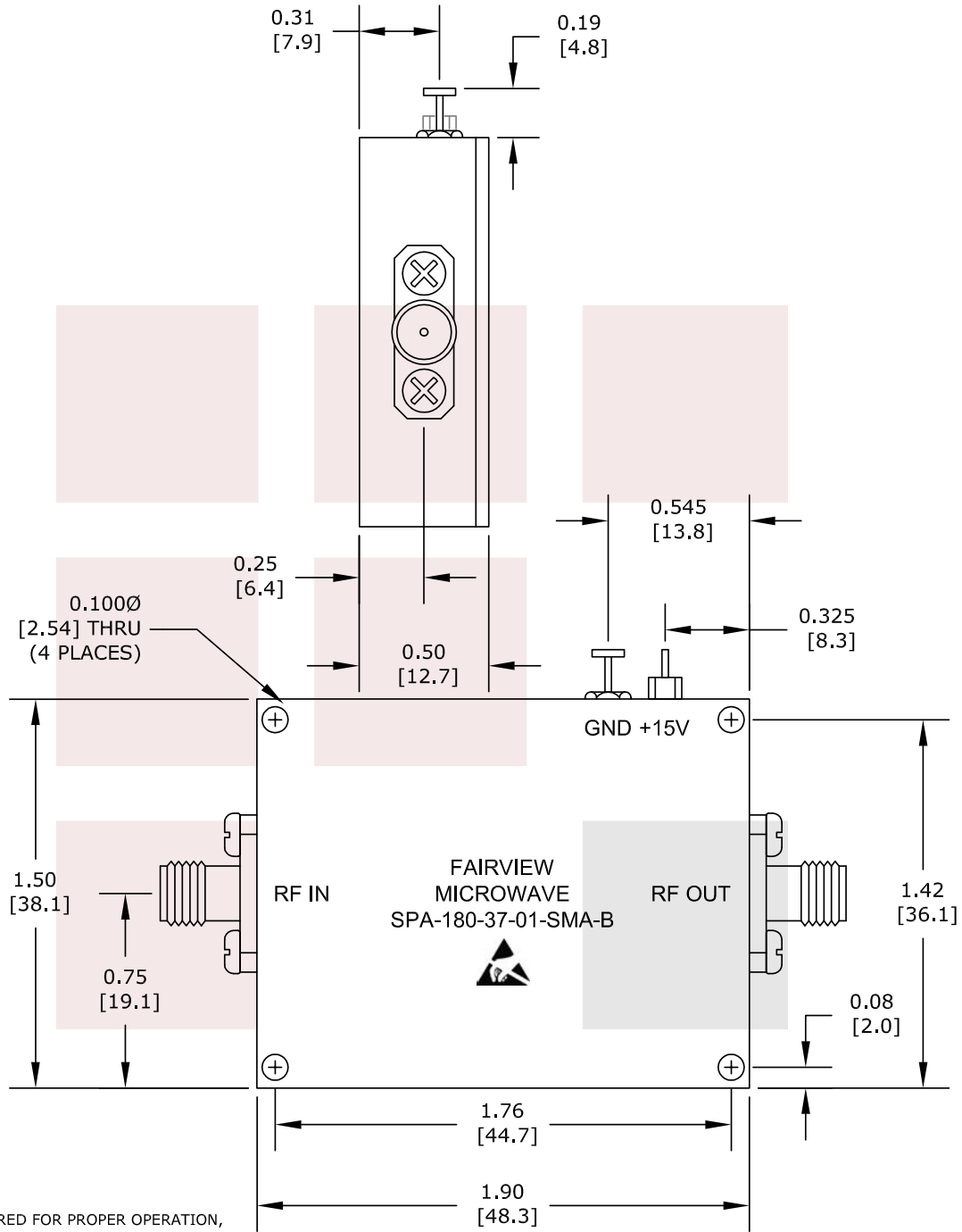
2 GHz to 18 GHz, Medium Power Broadband Amplifier with 1 Watt, 37 dB Gain and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [2 GHz to 18 GHz, Medium Power Broadband Amplifier with 1 Watt, 37 dB Gain and SMA SPA-180-37-01-SMA-B](#)

URL: <https://www.fairviewmicrowave.com/2-18-ghz-medium-power-broadband-amplifier-spa-180-37-01-sma-b-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.

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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
 2 GHz to 18 GHz, Medium Power Broadband Amplifier
 with 1 Watt, 37 dB Gain and SMA

DWG NO SPA-180-37-01-SMA-B CAGE CODE 3FKR5

CAD FILE	070214	SHEET	SCALE	N/A	SIZE	A	150
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