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

SPA-180-37-01-SMA-A

Features

- 0.3 to 18 GHz Frequency Range
- P1dB: 30.5 dBm
- Small Signal Gain: 37 dB
- Gain Flatness: ±2.0 dB
- Gain Variation Over the Temperature Range: ±2 dB
- Output IP3: 42 dBm
- Noise Figure Range: 3-5 dB
- 50 Ohm Input and Output Matched
- -40 to +75°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
- Communication Systems
- Satellite Communications
- Wireless Communications
- Unmanned Systems
- Microwave Radio Systems
- Power Amplifier
- Low Noise Amplifier
- General Purpose Amplification
- RF Front Ends

Description

The SPA-180-37-01-SMA-A is a broadband GaAs PHEMT MMIC-based coaxial power amplifier, operating in the 0.3 to 18 GHz frequency range. The amplifier offers 30.5 dBm of P1dB and 37 dB small signal gain, with the gain flatness of ±2 dB along with an outstanding 42 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 (36 g) and small size (1.9"x1.5"x0.5").

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

Description	Min	Typ	Max	Unit
Frequency Range	0.3		18	GHz
Gain	34	37	41	dB
Gain Flatness		±2	±2.5	dB
Gain Variation over OTR*		±2		dB
P1dB	+29.5	+30.5		dBm
IP3		+42		dBm
Reverse Isolation		60		dB
Spurious			-60	dBc
Noise Figure at 0.3 to 2.5 GHz		3.5	5	dB
Noise Figure at 2.5 to 14 GHz		3	3.5	dB
Noise Figure at 14 to 18 GHz		3.5	4	dB
Input VSWR		1.8:1	2.2:1	
Output VSWR		1.8:1	2.2:1	
Operating DC Voltage	14.5	15	18	Vdc

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

Description	Min	Typ	Max	Unit
Operating DC Current	600	750	1000	mA
Operating Temperature Range (OTR)	-40		+75	°C

Absolute Maximum Rating

Parameter	Rating	Units
Source Voltage	+18	Volts
RF input Power	+15	dBm
Operating Temperature (base-plate)	-40 to +75	°C
Storage Temperature	-55 to +125	°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]
Weight	0.1885 lbs [85.5 g]
Input Connector	SMA Female
Output Connector	SMA Female
Cooling	ADEQUATE HEATSINK REQUIRED

Mechanical Specification Notes:
External Heatsink required for proper operation

Environmental Specifications

Temperature

Operating Range	-40 to +75 deg C
Storage Range	-55 to +125 deg C

Compliance Certifications (see product page for current document)

CE Certification

Plotted and Other Data

Notes:

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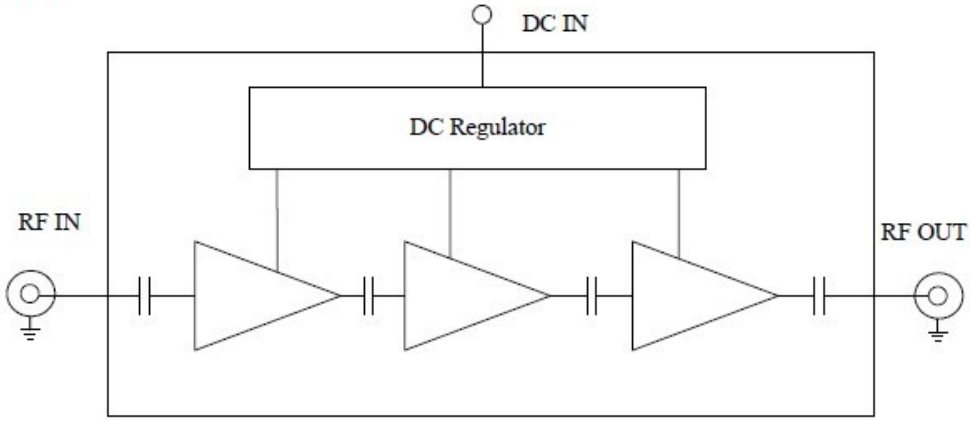
Functional Block Diagram

Functional Diagram



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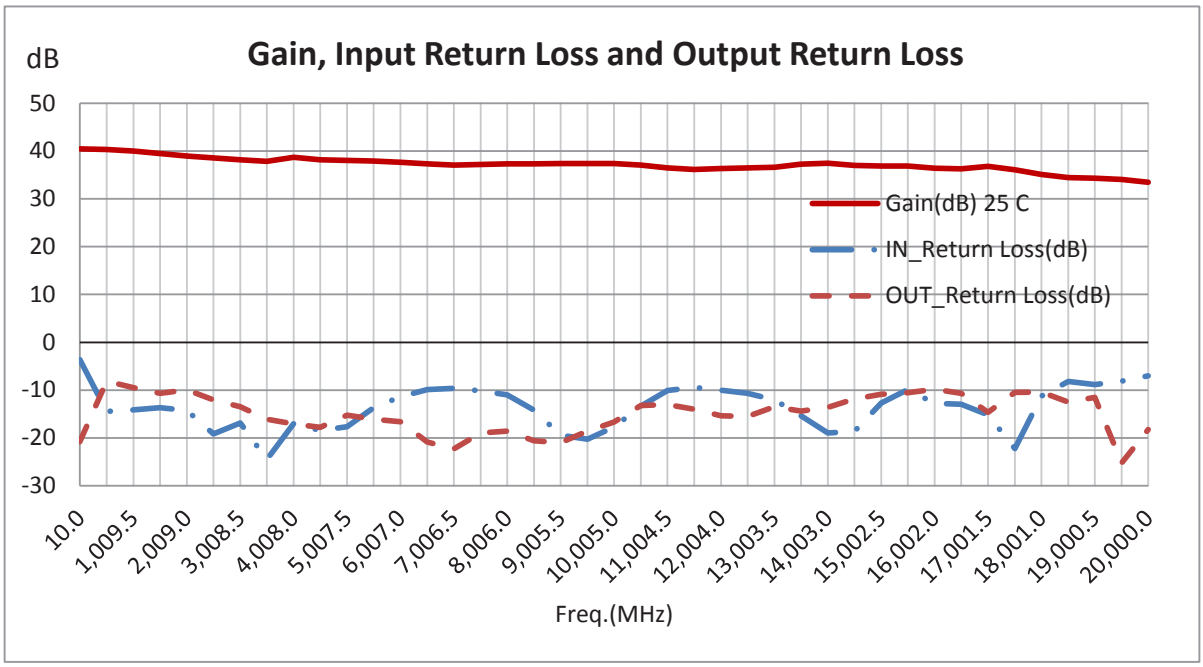
Typical Performance Data Parameter, Typ Performance



300 MHz 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 Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: 300 MHz to 18 GHz, Medium Power Broadband Amplifier with 1 Watt, 37 dB Gain and SMA SPA-180-37-01-SMA-A

URL: https://www.fairviewmicrowave.com/300-mhz-18-ghz-medium-power-broadband-amplifier-spa-180-37-01-sma-a-p.aspx

SPA-180-37-01-SMA-A CAD Drawing

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