

## 110 MHz to 10 GHz, Medium Power Broadband Amplifier with 1 Watt, 12.5 dB Gain and SMA

SDA-100-12-01-SMA is a broadband multi-octave GaAs PHEMT MMIC-based 1W coaxial power amplifier, operating in the 110 MHz to 10 GHz frequency range. The amplifier offers +30 dBm of output saturated power at 10 GHz, and 12 dB minimum small signal gain, along with the excellent gain flatness of  $\pm 1.0$  dB max and outstanding IP3 performance of +38 dBm. This performance is achieved through the use of advanced GaAs PHEMT MMIC circuitry. This power amplifier requires only a single positive DC supply, unconditionally stable, and operates over the temperature range of -40°C to +85°C, and characterized by a light weight (21 g) and small size (1.55"x1.37"x0.55").

### Electrical Specifications (TA= 25°C, VDC1 = 12 Vdc)

Description	Min	Typ	Max	Unit
Frequency Range	0.11		10	GHz
Gain	12	12.5		dB
Gain Flatness		$\pm 1$	$\pm 1.3$	dB
Gain Variation over Temp.		0.005	0.01	dB/°C
Saturation Output Power		+30.5		dBm
IP3		+38		dBm
Noise Figure		6.5		dB
Input VSWR		1.3:1	1.7:1	
Output VSWR		1.3:1	1.7:1	
Operating DC Voltage 1		12		Volts
Operating DC Current		300		mA
Operating Temperature Range (OTR)	-40		+85	°C

### Absolute Maximum Rating

Parameter	Rating	Units
Source Voltage	+14	Volts
RF input Power	+20	dBm
Operating Temperature (base-plate)	-40 to +85	°C
Storage Temperature	-55 to +100	°C



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

### Mechanical Specifications

Weight	0.071 lbs [32.21 g]
Input Connector	SMA Female
Output Connector	SMA Female



### Features:

- 110 MHz to 10 GHz Frequency Range
- Psat: +30 dBm min
- Small Signal Gain: 12 dB min @10GHz
- Gain Flatness:  $\pm 1$  dB
- Gain Variation Over Temperature: 0.005 dB/°C
- High Output IP3: +38 dBm
- Noise Figure: 6.5 dB
- 50 Ohm Input and Output Matched
- -40 to +85°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
- Microwave Radio Systems
- Power Amplifier
- General Purpose Amplification
- RF Front Ends

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## Environmental Specifications

### Temperature

Operating Range

-40 to +85 deg C

Storage Range

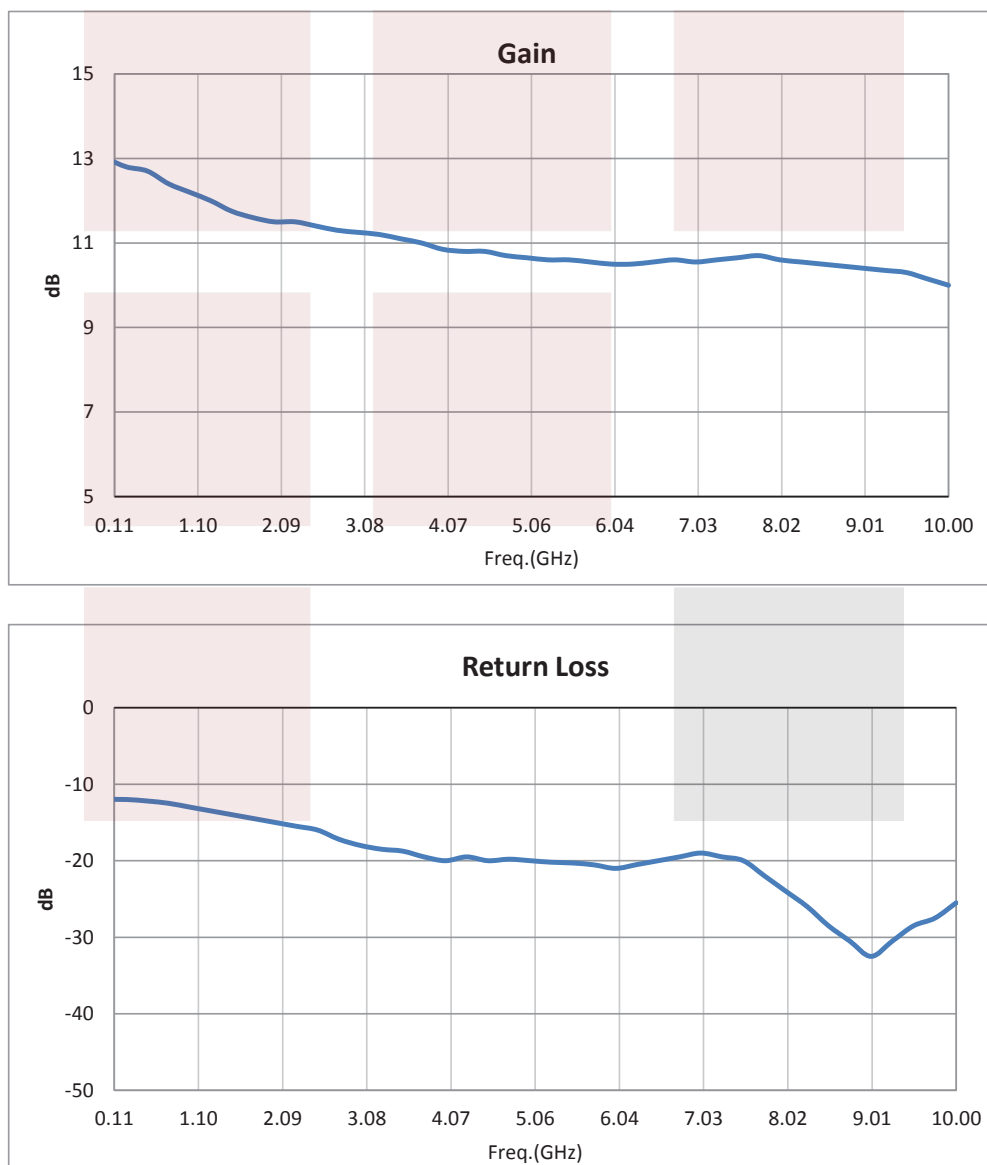
-55 to +150 deg C

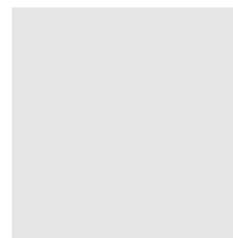
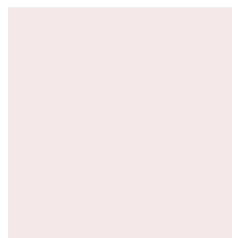
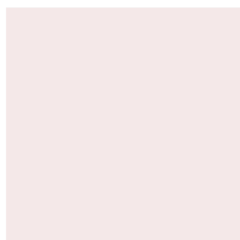
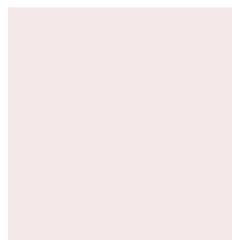
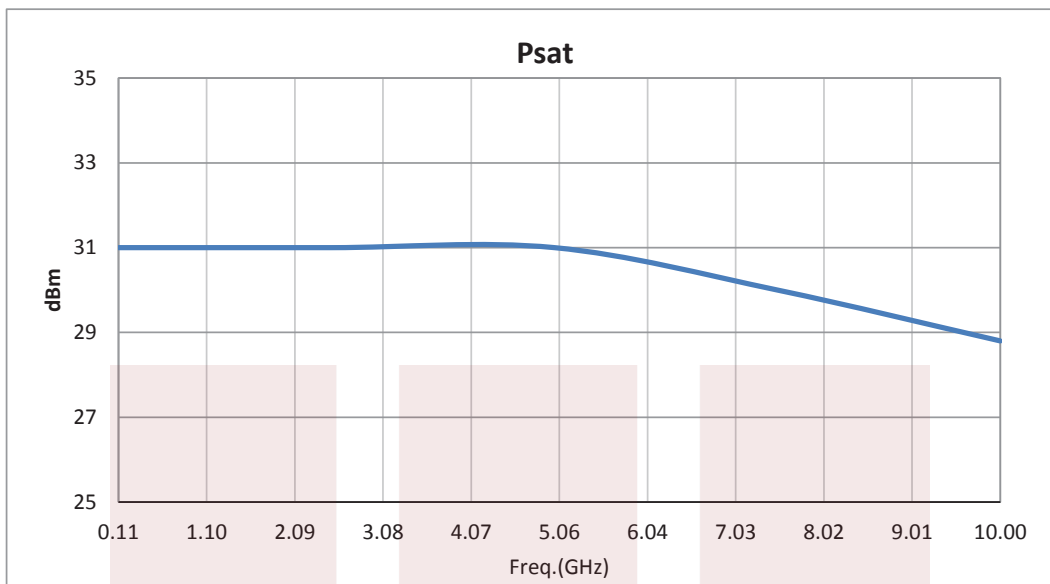
**Compliance Certifications** (see [product page](#) for current document)

## Plotted and Other Data

Notes:

### Typical Performance Data



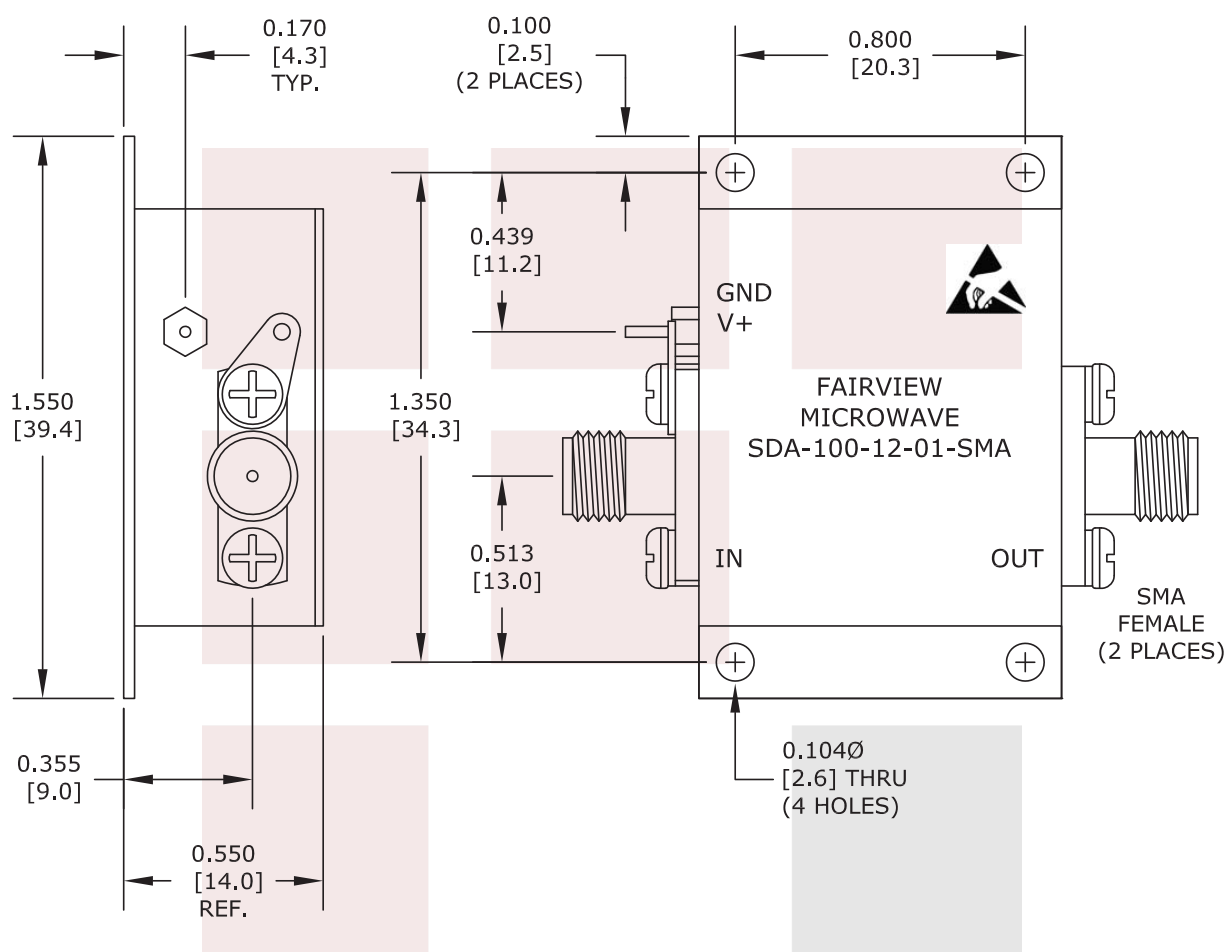


110 MHz to 10 GHz, Medium Power Broadband Amplifier with 1 Watt, 12.5 dB Gain and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [110 MHz to 10 GHz, Medium Power Broadband Amplifier with 1 Watt, 12.5 dB Gain and SMA SDA-100-12-01-SMA](#)

URL: <https://www.fairviewmicrowave.com/dc-10-ghz-medium-power-broadband-amplifier-sda-100-12-01-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.

## FAIRVIEW MICROWAVE INC.

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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

110 MHz to 10 GHz, Medium Power Broadband  
Amplifier with 1 Watt, 12.5 dB Gain and SMA

### DWG NO

SDA-100-12-01-SMA

### CAGE CODE

3FKR5

### CAD FILE

081814

### SHEET

SCALE

N/A

### SIZE

A

2233