

IP3 37 dBm Linear Amplifier Linear Low Noise with 1.5 dB NF Operating from 50 MHz to 1 GHz, 15 dB Gain, 23 dBm P1dB and SMA

The SLIA-010-18-39-SMA is a High OIP3 Amplifier operating in the 50 MHz to 1000 MHz Frequency Range. The coaxial amplifier is unconditionally stable and can operate from 5 VDC to 12 VDC. This amplifier design utilizes GaAs E-pHEMT technology for high linearity and high efficiency. Output P1dB is +23 dBm typical and output IP3 is +37 dBm typical. The connectorized SMA module incorporates built-in voltage regulation and bias sequencing.

Electrical Specifications (TA = +25°C, DC Voltage = 12Volts, DC Current = 85mA)

Description	Min	Typ	Max	Unit
Frequency Range	50		1,000	MHz
Small Signal Gain		15		dB
Gain Flatness		±0.7		dB
Output at 1 dB Compression Point		+23		dBm
Output 3rd Intercept Point		+37		dBm
Noise Figure		1.5		dB
Input VSWR		1.45:1		
Output VSWR		1.45:1		
Operating DC Voltage	5		12	Volts
Operating DC Current		85		mA
Operating Temperature Range	-40		+60	°C

RF Characteristic

Description	F1	F2	F3	Units
Frequency Range	0.05 to 0.5	0.5 to 1		GHz
Small Signal Gain	14.5	15		dB
Output 3rd Intercept Point	+38	+37		dBm

Mechanical Specifications

Size	
Length	1.38 in [35.05 mm]
Width	0.5 in [12.7 mm]
Height	1.18 in [29.97 mm]
Weight	0.079 lbs [35.83 g]
Input Connector	SMA Female
Output Connector	SMA Female



Features:

- 50 MHz to 1000 MHz Frequency Range
- Noise Figure 1.5 dB typ
- Gain 15 dB typ
- GaAs E-pHEMT Technology
- Unconditionally Stable
- Gain Flatness +/- 0.7 dB typ
- OIP3 37 dBm typ
- Compact Aluminum Case
- 50 Ohm SMA Female Connectors
- Single DC Passive Supply with EMI Filter
- Built-in Voltage Regulation

Applications:

- Low Noise Amp
- Cellular Communicaitons
- GSM
- UMTS
- Wireless Data
- RFID
- Satellite

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

Plotted and Other Data

Notes:

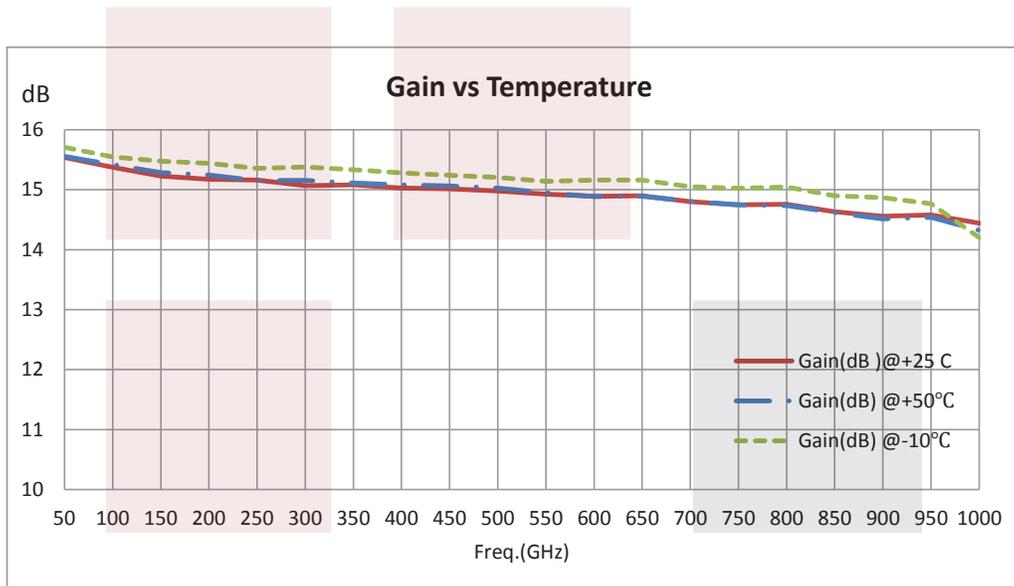
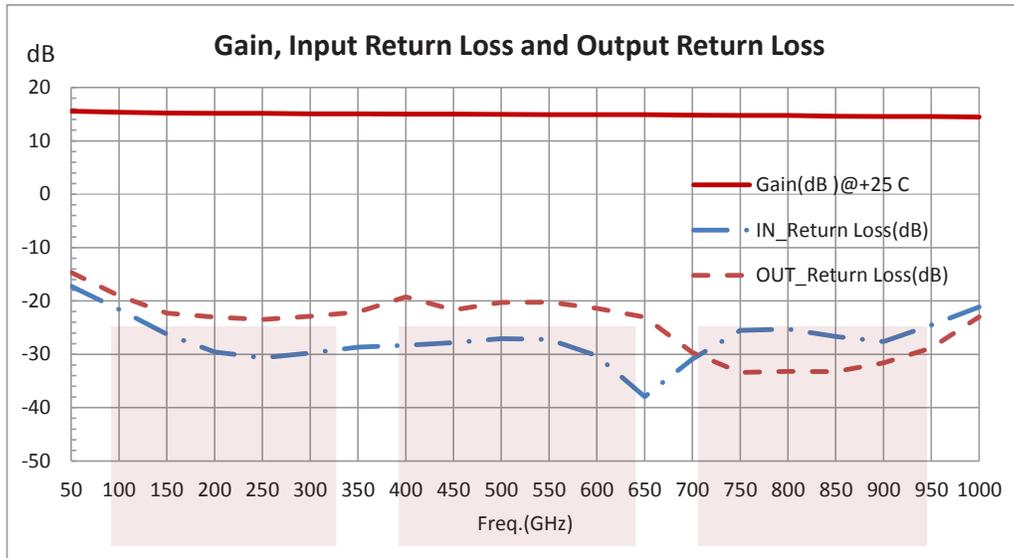
- Values at 25 °C, sea level
- ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

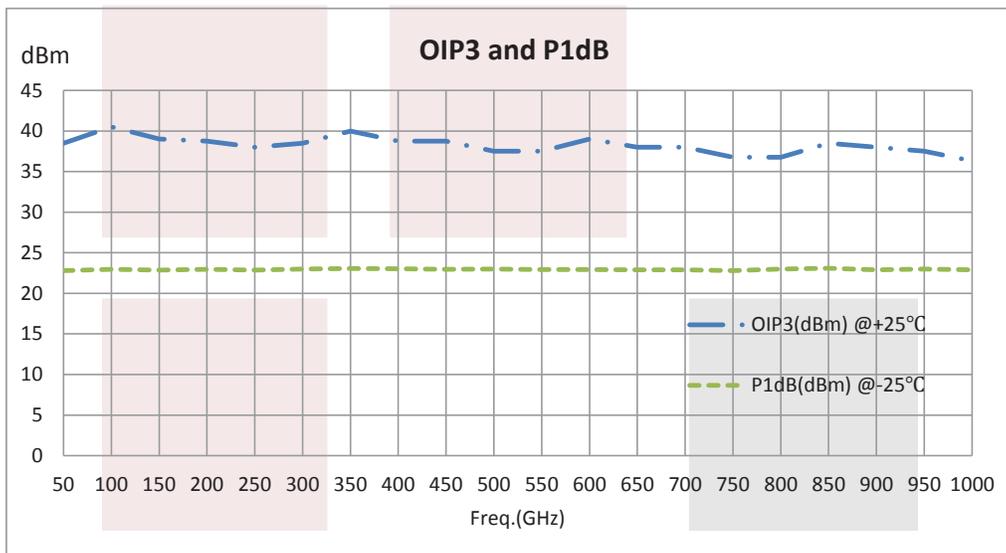
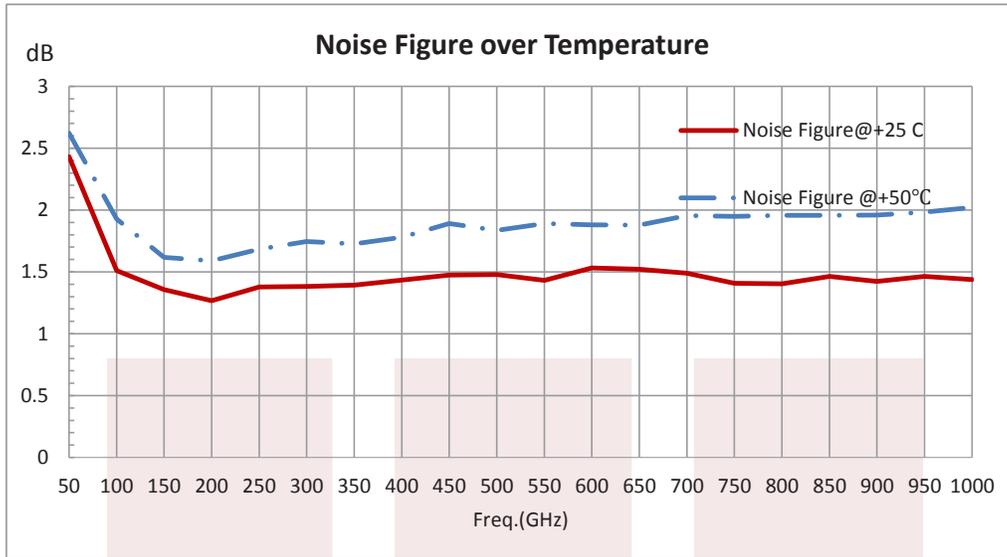


Amplifier Power-up Precautions

- 1.) Confirm that proper ESD precautions and controls are always in place before handling any Amplifier module.
- 2.) Confirm adequate thermal management is in place to effectively dissipate heat away from the Amplifier package. The Amplifier operational baseplate temperature must be within the operational temperature range stated in the Amplifier datasheet. Depending on the design and thermal requirements, using a heatsink with cooling fan is always recommended for safe reliable operation. A heat sink without a cooling fan may also be used. Damage caused from overheating will void the warranty.
- 3.) Confirm adequate system grounding is established. The DC power supply and Amplifier must have a common ground in order to operate properly.
- 4.) Power Amplifiers may require additional DC Current when initially powered-up. Depending on the design, the input current draw could range from an additional 10% to 100% above the maximum rated DC current of the Amplifier. This varies based on product part number.
- 5.) Confirm the DC power supply, if limited, is set to allow for additional start-up current that's rated for the Power Amplifier.
- 6.) Confirm the system is designed and calibrated for 50 ohms. Any impedance mismatch may cause performance issues.
- 7.) Perform a CALIBRATION (if required) with the loads before connecting the Amplifier to the Network Analyzer to ensure proper performance.
- 8.) Use a fixed attenuator between the signal source and input port of the Amplifier to optimize the input VSWR match.
- 9.) Confirm the input power level at the input port of the amplifier does not exceed the maximum rated limit for input power (as stated in the Amplifier datasheet).
 P_{in} for Small Signal Gain = P1dB-SSG-10 dB
 P_{in} for P1dB = P1dB-SSG+1 dB
- 10.) Confirm the Network Analyzer is always connected to the Amplifier first before DC power is applied to the Amplifier.
- 11.) As long as the input and output ports of the amplifier are connected to a 50Ohm load and RF signal power is applied, the Amplifier can be powered up with DC voltage.
- 12.) Confirm the Amplifier output load is matched for a 50 Ohm impedance and will not exceed the maximum rated VSWR or Return Loss limit for the Amplifier. Exceeding the maximum rated VSWR or Return Loss limit will result in reflected signal power that could damage the Amplifier and void the warranty.
- 13.) **Power Amplifier connected to an Antenna for signal transmission** - It's strongly recommended to use a high power fixed attenuator pad or an Isolator between the output port of the Amplifier and input port to the antenna. Any reflected signal power due to impedance mismatch will likely damage the Amplifier and void the warranty.
- 14.) The attenuator or isolator used at the output port of the Amplifier must be rated to handle the output power level and operational frequency band of the amplifier.

Typical Performance Data



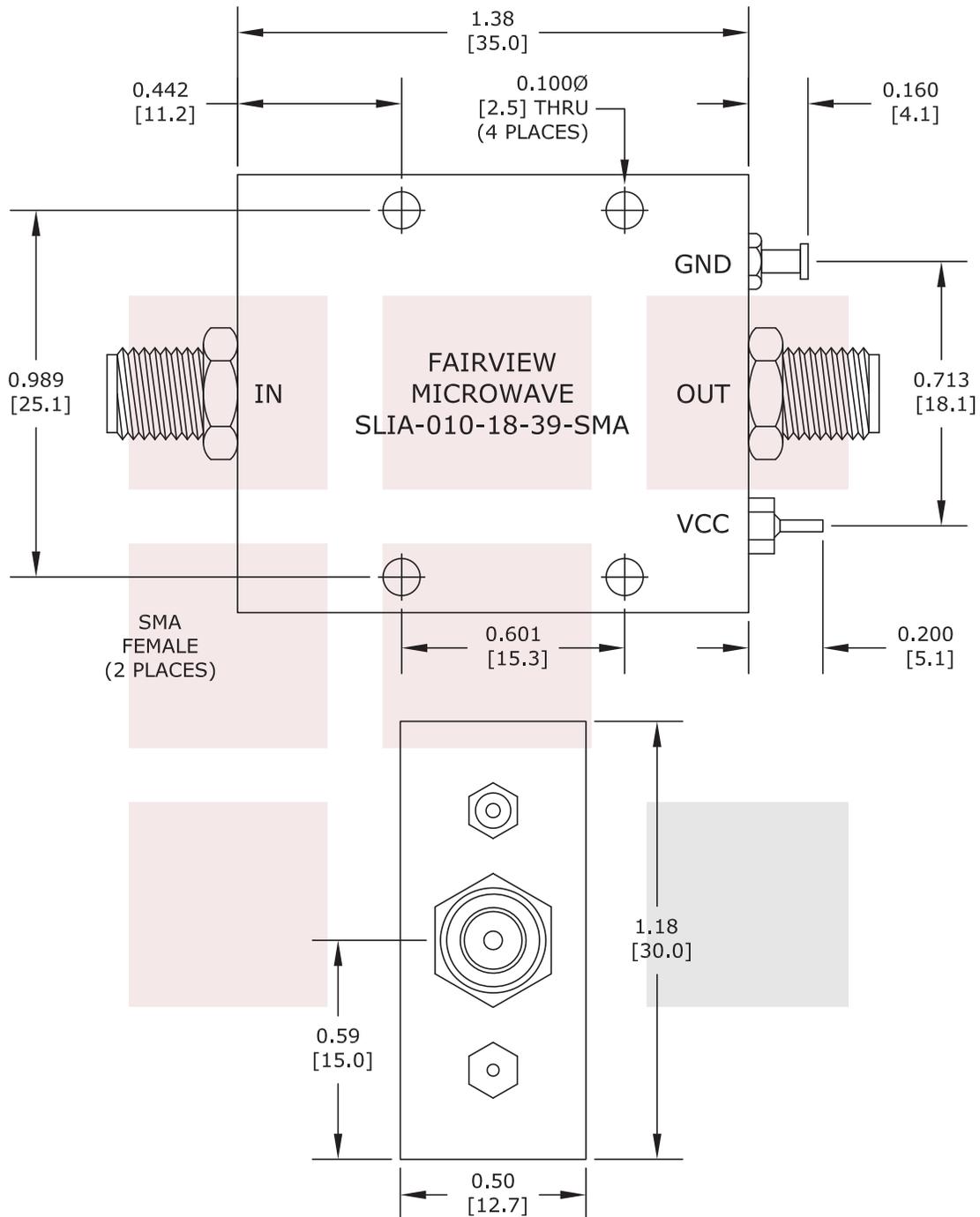


IP3 37 dBm Linear Amplifier Linear Low Noise with 1.5 dB NF Operating from 50 MHz to 1 GHz, 15 dB Gain, 23 dBm P1dB and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [IP3 37 dBm Linear Amplifier Linear Low Noise with 1.5 dB NF Operating from 50 MHz to 1 GHz, 15 dB Gain, 23 dBm P1dB and SMA SLIA-010-18-39-SMA](#)

URL: <https://www.fairviewmicrowave.com/ip3-37-dbm-linear-amplifier-1.5-db-nf-slia-010-18-39-sma-p.aspx>

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TITLE IP3 37 dBm Linear Amplifier Linear Low Noise with 1.5 dB NF Operating from 50 MHz to 1 GHz, 15 dB Gain, 23 dBm P1dB and SMA		DWG NO SLIA-010-18-39-SMA		CAGE CODE 3FKR5	
CAD FILE	043015	SHEET	SCALE	N/A	SIZE A 2233