Fairview Microwave
an INFINITE brand

FMAM23
DATA SHEET

22 dB Gain Block Amplifier Operating From 6 GHz to 18 GHz with 13 dBm P1dB and SMA

The FMAM23 is wideband general purpose RF coaxial gain block amplifier operating in the 6 GHz to 18 GHz frequency range. The amplifier offers 13 dBm of P1dB, 22 dB of Gain. This exceptional technical performance is achieved through the use of hybrid MIC design . This gain block amplifier requires only a single positive supply, typically a +12V DC power supply.

Features:

- 6 GHz to 18 GHz Frequency Range
- P1dB: 13 dBm
- High Small Signal Gain: 22 dB
- 50 Ohm Input and Output Matched
- Unconditionally Stable
- Single DC Positive Supply

Electrical Specifications

(TA = +25°C, DC Voltage = +12 Volts, DC Current = 150mA)

Description	Minimum	Typical	Maximum	Units
Frequency Range	6		18	GHz
Small Signal Gain		22		dB
P1dB	12	13		dBm
Gain Flatness		±1	±1.5	dB
Noise Figure			4.5	dB
Input VSWR			2:1	
Output VSWR			2:1	
Operating DC Voltage			+12	Volts
Operating DC Current			150	mA
Quiescent Current		180		mA
Operating Temperature	-30		+70	°C

Mechanical Specifications

Size	
Length	1.45 in [36.83 mm]
Width	0.39 in [9.91 mm]
Height	0.78 in [19.81 mm]
Weight	0.063 lbs [28.58 g]
Input Connector	SMA Female
Output Connector	SMA Female

Environmental Specifications

Temperature	
Operating Range	-30 to +70 deg C

Compliance Certifications (see product page for current document)

Plotted and Other Data

Notes:

- Values at +25 °C, sea level

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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.) Preform 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.

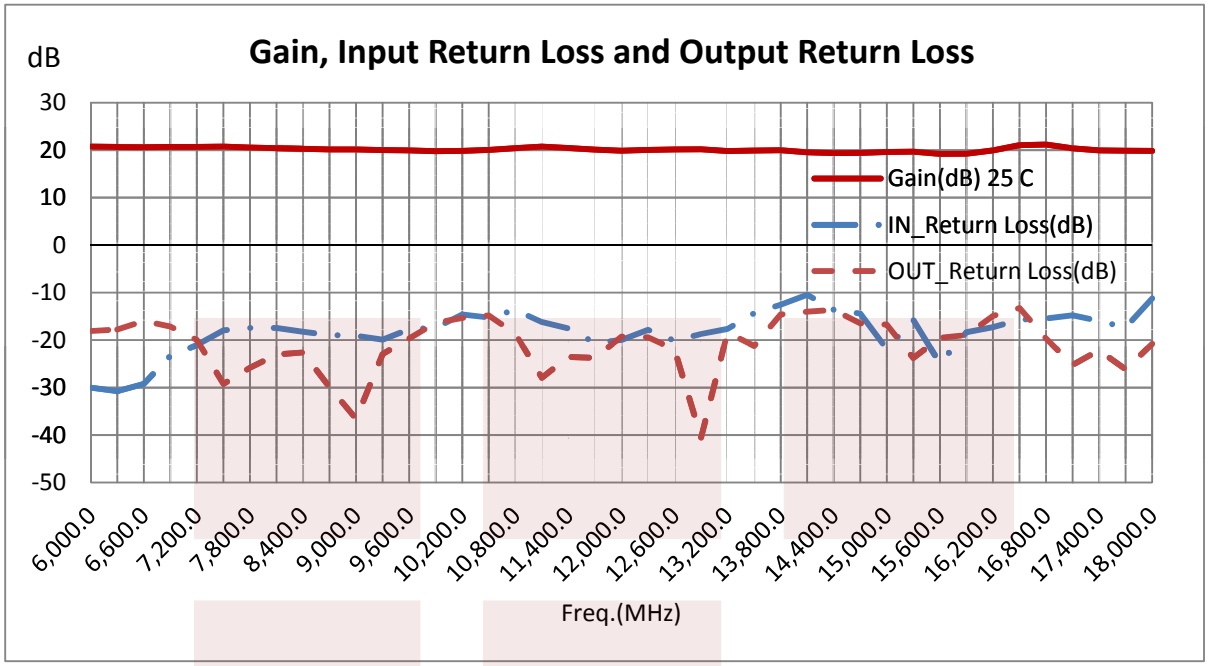
11.) As long as the input and output ports of the amplifier are connected to a 50Ohm load and RF signal power is applied, the Amplifier can be powered up with DC voltage.

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



22 dB Gain Block Amplifier Operating From 6 GHz to 18 GHz with 13 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: 22 dB Gain Block Amplifier Operating From 6 GHz to 18 GHz with 13 dBm P1dB and SMA FMAM23

URL: https://www.fairviewmicrowave.com/22-db-gain-block-amplifier-18-ghz-fmam23-p.aspx

