Fairview Microwave
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FMAM5044
DATA SHEET

High Power Amplifier at 7 Watt P1dB Operating from 8.5 GHz to 10.5 GHz with 47 dBm IP3, SMA Input, SMA Output and 36 dB Gain

The FMAM5044 is a power coaxial amplifier operating in the 8.5 to 10.5 GHz frequency range. The amplifier offers 38.5 dBm typ of P1dB power and a high 36 dB typical small signal gain with the gain flatness of ±1.5 dB typ. Input/output ports are matched for 50 ohms and are AC coupled. The amplifier requires typically a +12V DC power supply. The connectorized SMA module is unconditionally stable and operates over the temperature range of -40°C and +70°C.

Features:

- 8.5 to 10.5 GHz Frequency Range
- P1dB +38.5 dBm typ
- Small Signal Gain: 36 dB typ
- Gain Flatness ±1.5 dB typ
- 50 Ohms Input and Output Matched
- Unconditionally Stable
- Regulated Supply

Applications:

- Military Radio
- Communication Systems
- High Gain Driver Power Amplifier
- High Gain Output Power Amplifier

Electrical Specifications

(TA = +25°C, DC Voltage = 12Volts , DC Current = 4A)

Description	Min	Typ	Max	Unit
Frequency Range	8.5		10.5	GHz
Small Signal Gain	33	36		dB
Gain Flatness		±1.5	±1.8	dB
P1dB	+37.5	+38.5		dBm
Output 3rd Order Intercept Point		+47		dBm
Impedance (Input)		50		Ohms
Impedance (Output)		50		Ohms
Input VSWR			2:1	
Output VSWR			2:1	
Operating DC Voltage	11	12	13	Volts
Operating DC Current		4		A
Operating Temperature Range	-40		+70	°C

Mechanical Specifications

Size	
Length	2.36 in [59.94 mm]
Width	2.91 in [73.91 mm]
Height	0.63 in [16 mm]
Weight	0.349 lbs [158.3 g]
Input Connector	SMA Female
Output Connector	SMA Female

Environmental Specifications

Temperature	
Operating Range	-40 to +70 deg C

Fairview Microwave
301 Leora Ln., Suite 100
Lewisville, TX 75056
Tel: 1-800-715-4396 / (972) 649-6678
Fax: (972) 649-6689
www.fairviewmicrowave.com
sales@fairviewmicrowave.com

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.

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.

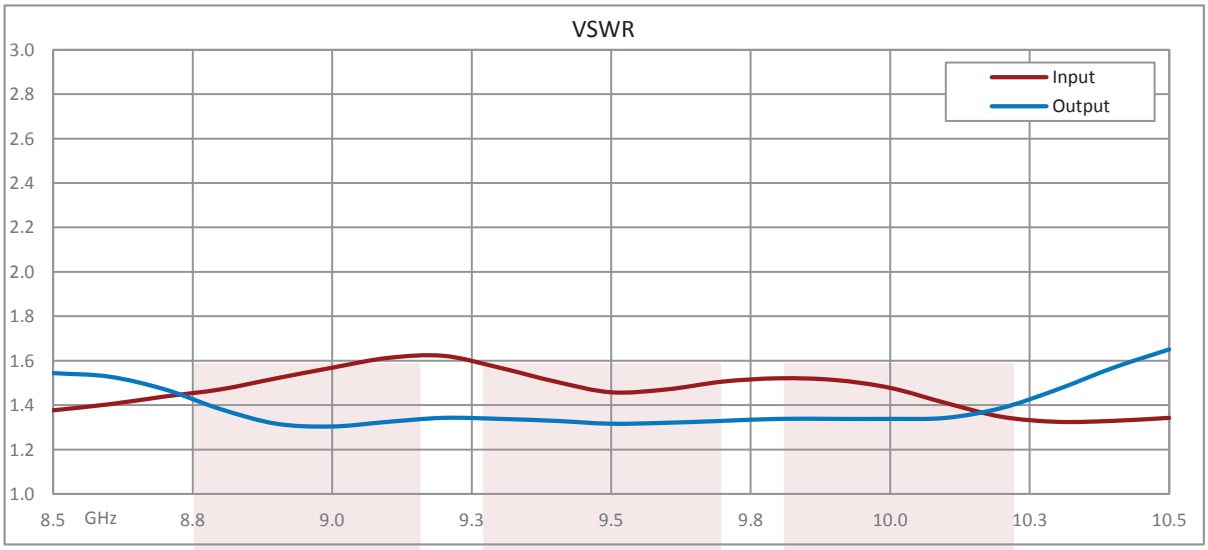
11.) As long as the input and output ports of the amplifier are connected to a 50Ohm load and RF signal power is applied, the Amplifier can be powered up with DC voltage.

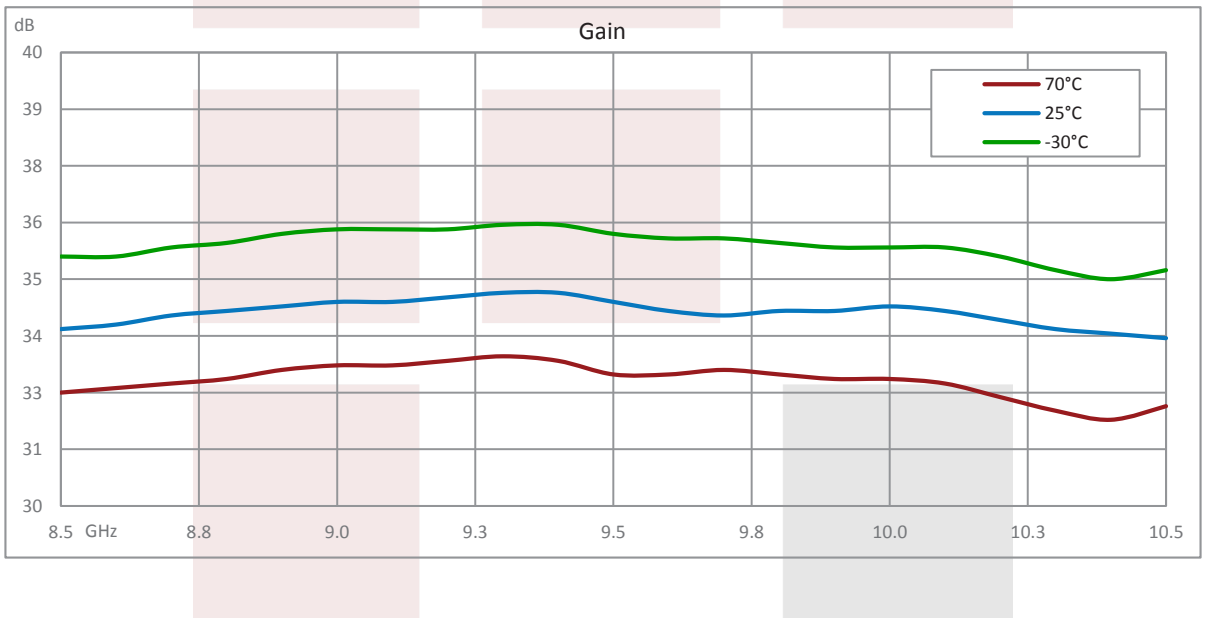
12.) Confirm the Amplifier output load is matched for a 50 Ohm impedance and will not exceed the maximum rated VSWR or Return Loss limit for the Amplifier. Exceeding the maximum rated VSWR or Return Loss limit will result in reflected signal power that could damage the Amplifier and void the warranty.

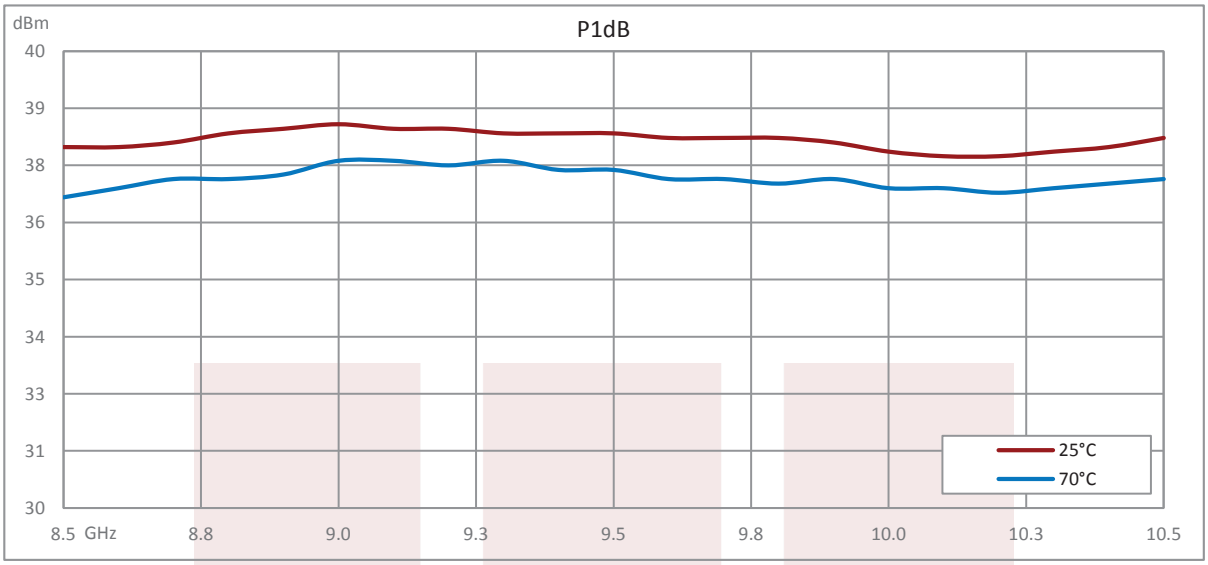
13.) **Power Amplifier connected to an Antenna for signal transmission** - It's strongly recommended to use a high power fixed attenuator pad or an Isolator between the output port of the Amplifier and input port to the antenna. Any reflected signal power due to impedance mismatch will likely damage the Amplifier and void the warranty.

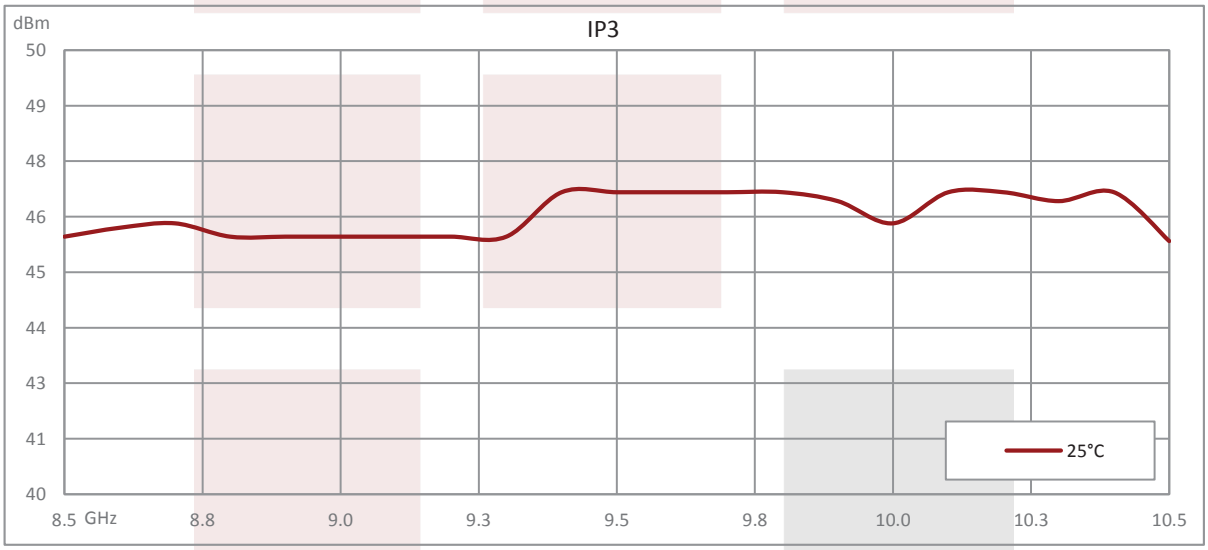
14.) The attenuator or isolator used at the output port of the Amplifier must be rated to handle the output power level and operational frequency band of the amplifier.

Typical Performance Data





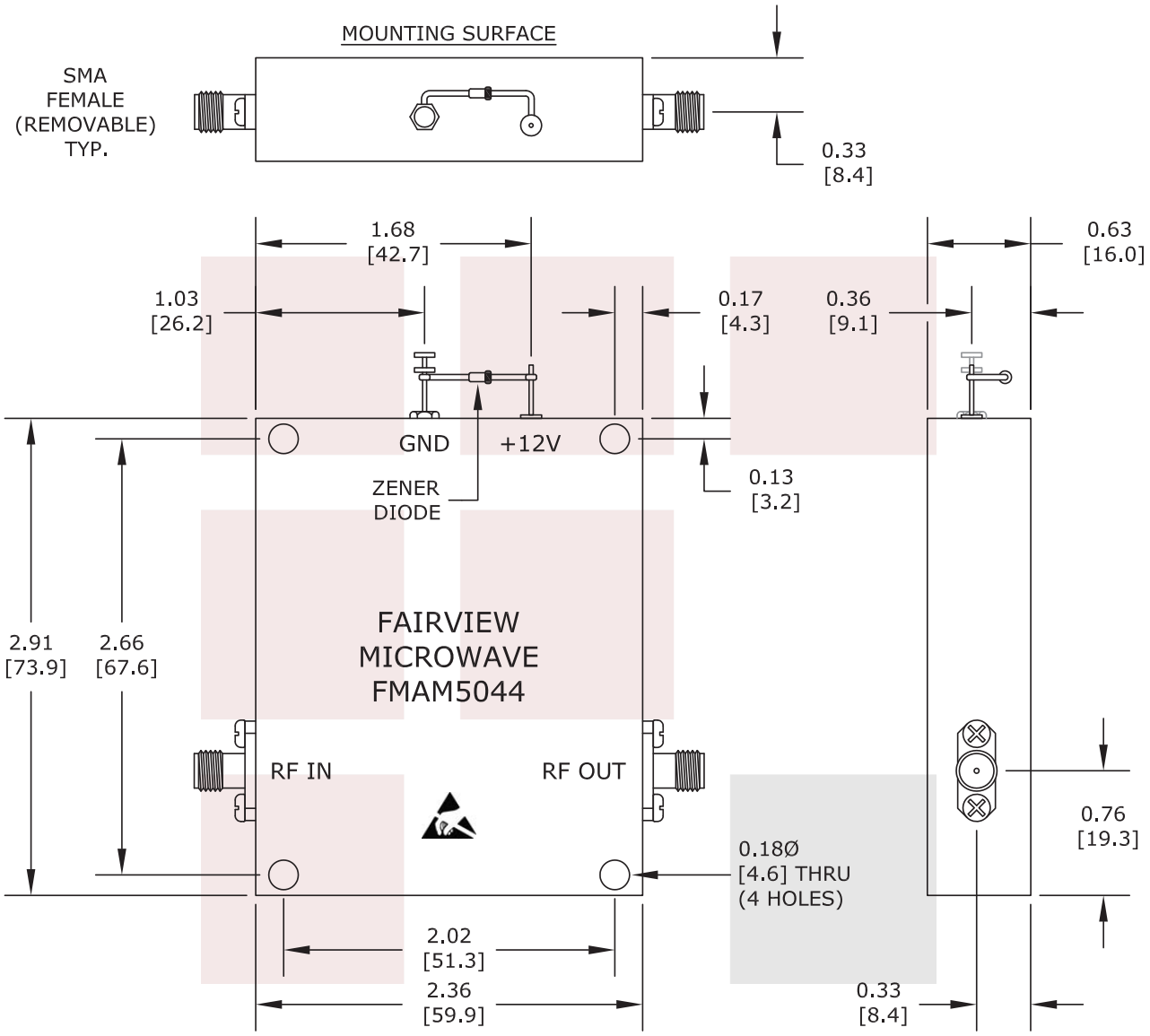




High Power Amplifier at 7 Watt P1dB Operating from 8.5 GHz to 10.5 GHz with 47 dBm IP3, SMA Input, SMA Output and 36 dB Gain from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: High Power Amplifier at 7 Watt P1dB Operating from 8.5 GHz to 10.5 GHz with 47 dBm IP3, SMA Input, SMA Output and 36 dB Gain FMAM5044

URL: https://www.fairviewmicrowave.com/high-power-amplifier-7watt-36db-fmam5044-p.aspx



NOTE:
HEAT SINK REQUIRED FOR PROPER OPERATION,
UNIT IS COOLED BY CONDUCTING TO HEAT SINK.

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TITLE High Power Amplifier at 7 Watt P1dB Operating from 8.5 GHz to 10.5 GHz with 47 dBm IP3, SMA Input, SMA Output and 36 dB Gain	DWG NO FMAM5044 / CAGE CODE 3FKR5 CAD FILE 032416 / SHEET / SCALE N/A / SIZE A / 2233