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Fairview Microwave
an INFINITE brand

FMAM4065
DATA SHEET

Medium Power Amplifier at 23 dBm P1dB Operating from 18 GHz to 40 GHz with 2.92mm



The FMAM4065 is a medium power amplifier, operating from 18 to 40 GHz and desgined for use in a wide range of general purpose applications. Typical performance includes 23 dBm of output P1dB min. and 35 dB small signal gain. This power amplifier requires a +12V DC supply, is unconditionally stable, and operates over the temperature range of 0°C to 50°C. The thin film assembly features rugged stripline construction with select GaAs FET devices. The package supports field replaceable 2.92mm connectors and is desgined for high reliablilty meeting MIL-STD-202 environmental test conditions for Humidity, Shock, Vibration, and altitude.

Features:

- 18 to 40 GHz Frequency Range
- P1dB 23 dBm min.
- Small Signal Gain: 35 dB min.
- Gain Flatness: ±4.0 dB max.
- 50 Ohm Input and Output Matched
- 0 to 50°C Operating Temperature
- Unconditionally Stable
- Single DC Positive Supply
- Built-in DC Voltage Regulator
- Field Replaceable 2.92mm Female connectors

Applications:

- Electronic Warfare
- Electronic Countermeasures
- Radar Systems
- Telecom Infrastructure
- Test Instrumentation
- Communication Systems
- Satellite Communications
- Microwave Radio Systems
- Driver Amplifier
- High Power Output Amplifier

Electrical Specifications

(TA = +25°C, DC Voltage = 12Volts , DC Current = 1A)

Description	Min	Typ	Max	Unit
Frequency Range	18		40	GHz
Small Signal Gain	35			dB
Gain Flatness			±4	dB
P1dB	+23			dBm
Noise Figure			9	dB
Impedance (Input)		50		Ohms
Impedance (Output)		50		Ohms
Input VSWR		2.5:1		
Output VSWR		2.5:1		
Operating DC Voltage		12		Volts
Operating DC Current		1		A
Operating Temperature Range	0		+50	°C

Mechanical Specifications

Size	
Length	1.05 in [26.67 mm]
Width	1.48 in [37.59 mm]
Height	0.35 in [8.89 mm]
Weight	0.0715 lbs [32.43 g]
Input Connector	2.92mm Female
Output Connector	2.92mm Female
Bias Connector	Solder Pin

Environmental Specifications

Temperature	
Operating Range	0 to +50 deg C
Storage Range	-40 to +100 deg C
Humidity	MIL-STD-202F, Method 103B, Condition B
Shock	MIL-STD-202F, Method 213B, Condition B
Vibration	MIL-STD-202F, Method 204D, Condition B
Altitude	MIL-STD-202F, Method 105C, Condition B

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Compliance Certifications (see product page for current document)

Plotted and Other Data

Notes:

- Values at 25 °C, sea level
- The following precautions for the FMAM4065 must be noted:
  1. Max Pin = 0 dBm
  2. DC Bias @ RF input may damage the amplifier
  3. Heat Sink Required for Proper Operation

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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.

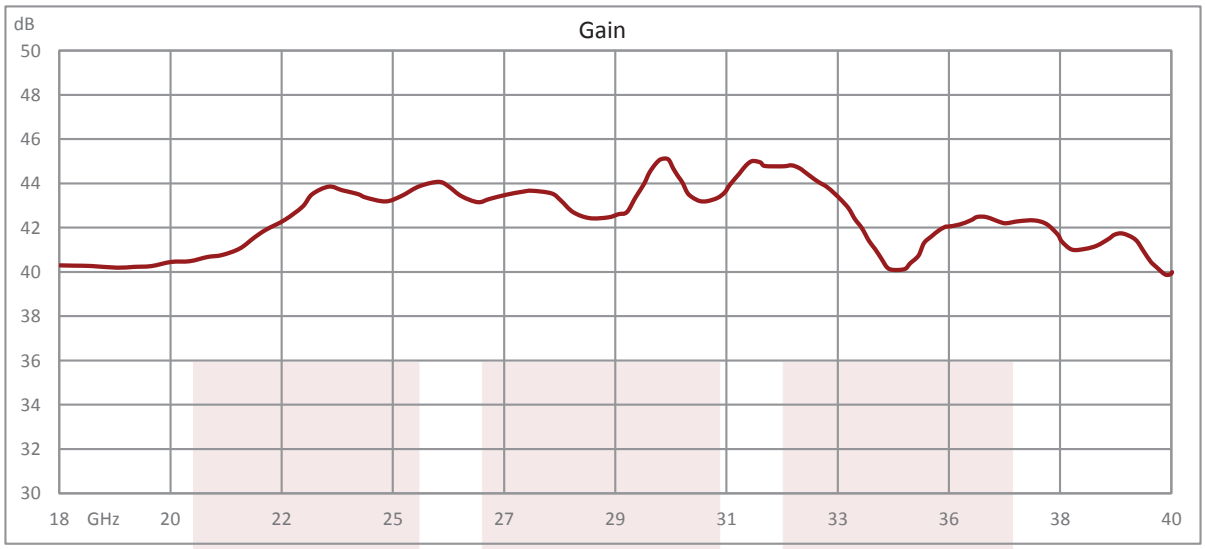
12.) Confirm the Amplifier output load is matched for a 50 Ohm impedance and will not exceed the maximum rated VSWR or Return Loss limit for the Amplifier. Exceeding the maximum rated VSWR or Return Loss limit will result in reflected signal power that could damage the Amplifier and void the warranty.

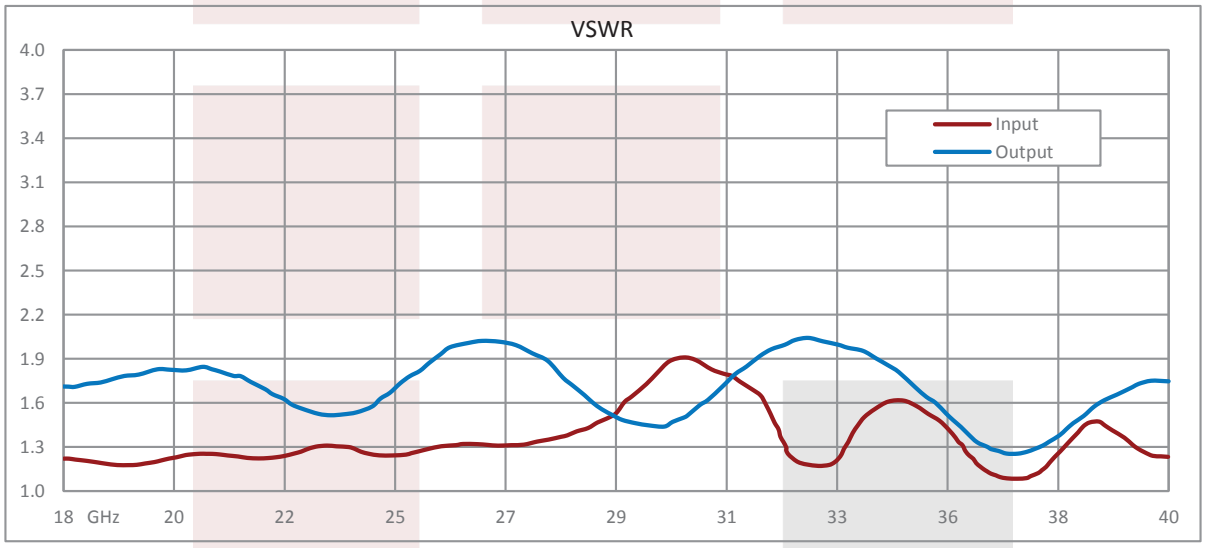
13.) **Power Amplifier connected to an Antenna for signal transmission** - It's strongly recommended to use a high power fixed attenuator pad or an Isolator between the output port of the Amplifier and input port to the antenna. Any reflected signal power due to impedance mismatch will likely damage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

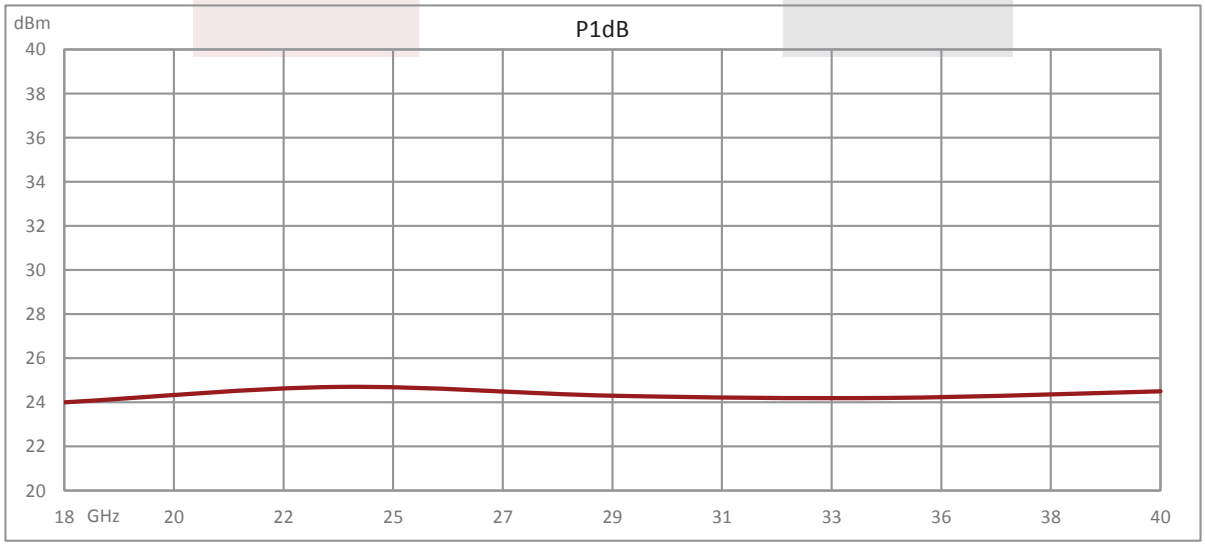
14.) The attenuator or isolator used at the output port of the Amplifier must be rated to handle the output power level and operational frequency band of the amplifier.

Typical Performance Data

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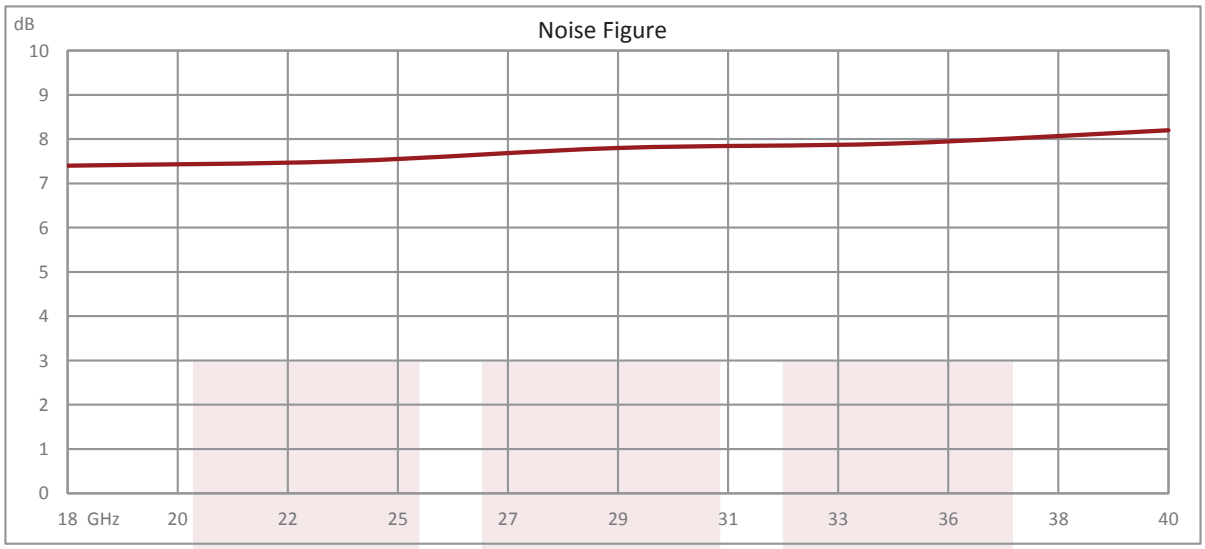






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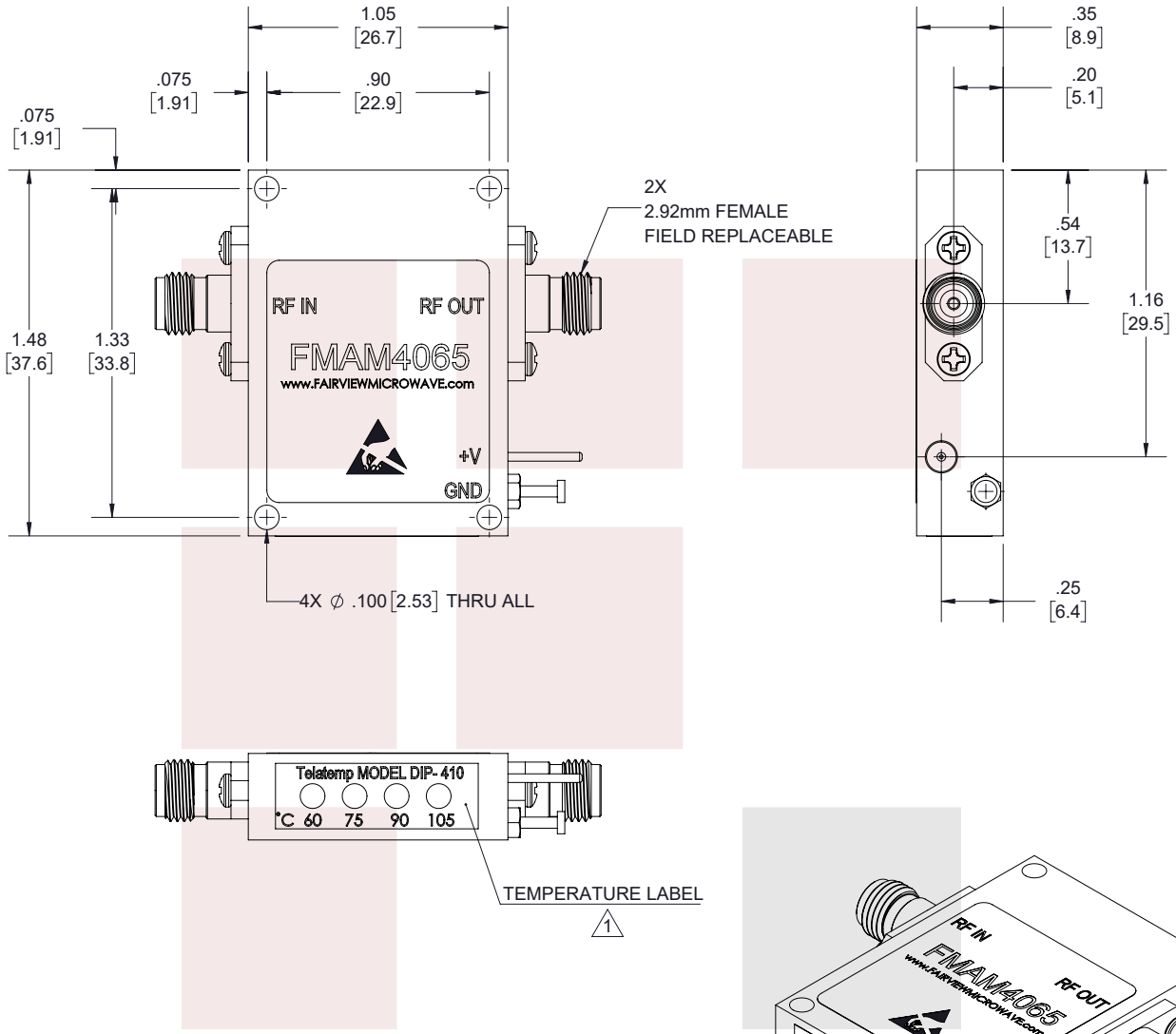


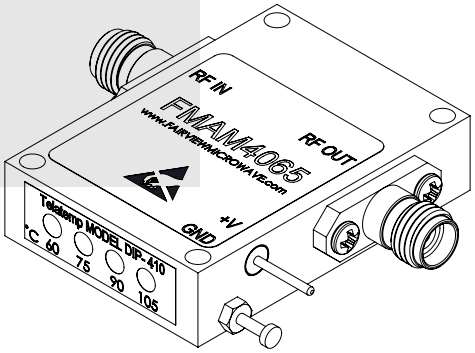
Medium Power Amplifier at 23 dBm P1dB Operating from 18 GHz to 40 GHz with 2.92mm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: Medium Power Amplifier at 23 dBm P1dB Operating from 18 GHz to 40 GHz with 2.92mm FMAM4065

URL: https://www.fairviewmicrowave.com/medium-power-amplifier-23dbm-35db-fmam4065-p.aspx

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NOTE:
1. WARRANTY VOID IF REMOVED.

STANDARD TOLERANCES	
.X	±0.2
.XX	±0.01
.XXX	±0.005

*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES

Fairview Microwave RF COMPONENTS ON DEMAND. Done!

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	DWG NO	CAGE CODE
Medium Power Amplifier at 23 dBm P1dB Operating from 18 GHz to 40 GHz with 2.92mm	FMAM4065	3FKR5

CAD FILE	05/15/18	SHEET	1 OF 1	SCALE	N/A	SIZE	A	7361

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FMAM4065

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