

**10 MHz to 6 GHz, Broadband Amplifier with 900 mW,
13 dB Gain and SMA**

FMAM4031 is a single stage amplifier operates across a wide frequency range from 10 MHz to 6 GHz. The design utilizes GaAs PHEMT MMIC technology for high efficiency and high linearity. Typical performance includes 13 dB of small signal gain, +40 dBm output IP3, and up to +30 dBm of Saturated Power. The design exhibits a very flat gain response across a wide frequency band. Input/output ports are matched for 50 ohms and are DC blocked.

The design also incorporates integrated bias sequencing circuitry and voltage regulators to allow for flexible biasing for both the negative and positive voltage supplies. The drop-in package is hermetically sealed with field replaceable SMA connectors. And for added confidence, this rugged package assembly is designed to meet MIL-STD-883 test conditions for Hermeticity and Temperature Cycle.

This broadband low noise amplifier module is part of Fairview Microwave's expanding line of amplifier offerings. These modules offer very wide frequency range coverage and outstanding electrical performance in the band.

Electrical Specifications (TA= 25°C, VDC1 = 15 Vdc, VDC2 = -5 Vdc)

Description	Min	Typ	Max	Unit
Frequency Range	0.01		6	GHz
Gain		13		dB
P1dB		+29.5		dBm
Noise Figure		5		dB
Operating DC Voltage 1		15		Volts
Operating DC Voltage 2		-5		Volts
Operating Temperature Range (OTR)	-55		+85	°C



Features:

- Driver Amplifier
- Wide Frequency Band
- GaAs PHEMT MMIC Technology
- Spurious-Free Operation
- Gain 13 dB
- High Output IP3 +40 dBm
- Saturated Output Power up to + 30 dBm typical
- Regulated Supply and Bias Sequencing
- Hermetically Sealed Module
- Mil Spec Compliant
- Field Replaceable SMA Connectors
- -55°C to +85°C Operating Temperature

Applications:

- Electronic Warfare
- Electronic Countermeasures
- Microwave Radio
- VSAT
- Radar
- Fiber Optic
- Space Systems
- Test Instrumentation
- Telecom Infrastructure

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Performance by Frequency

Description	Min.	Typ.	Max.	Units
Frequency Range		0.01 - 6		GHz
Gain	11.5	13		dB
Gain Flatness		±0.75		dB
Gain Variation Over Temperature		0.02		dB/ °C
Input Return Loss		17		dB
Output Return Loss		17		dB
Output Power For 1 dB Compression (P1dB)	27.5	29.5		dBm
Saturated Output Power (Psat)		30		dBm
Output Third Order Intercept (IP3)		40		dBm
Noise Figure		5		dB
Supply Current (+15V)		450	500	mA
Supply Current (-5V)		5		mA

Mechanical Specifications

Size

Length	2.305 in [58.55 mm]
Width	2.6 in [66.04 mm]
Height	0.54 in [13.72 mm]

Connector Option	Field Replaceable
Input Connector	SMA Female
Output Connector	SMA Female

Environmental Specifications

Temperature

Operating Range	-55 to +85 deg C
Storage Range	-65 to +150 deg C

Temperature Cycling	MIL-STD-883, Method 101C, Cond B
Hermetic Seal	Gross Leak MIL-STD-883 Method 1014C1/Fine Leak MIL-STD-883, Method 1014A2, 5 x 10 ⁻⁸ atm cc
ESD Sensitivity	ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.

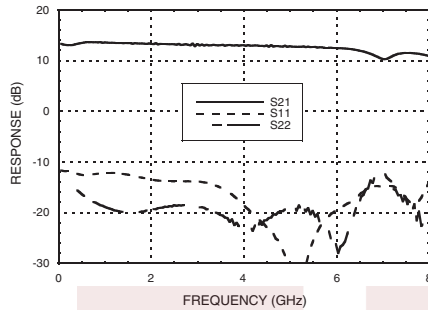


Compliance Certifications (visit www.FairviewMicrowave.com for current document)

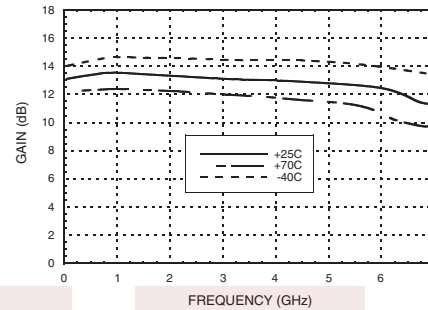
RoHS Compliant	Yes
REACH Compliant	12/17/2015

Typical Performance Data

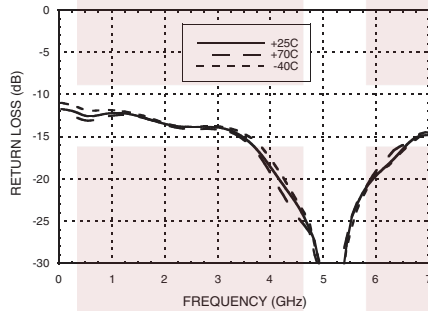
Gain & Return Loss



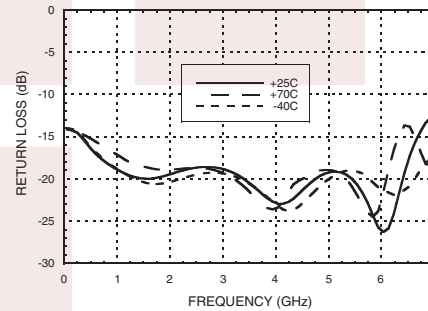
Gain vs. Temperature



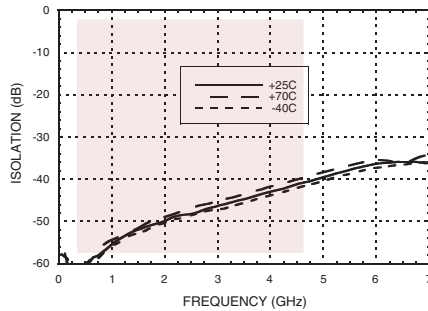
Input Return Loss vs. Temperature



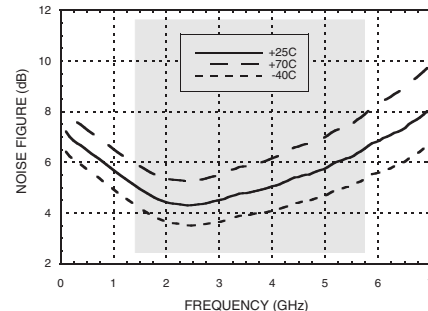
Output Return Loss vs. Temperature



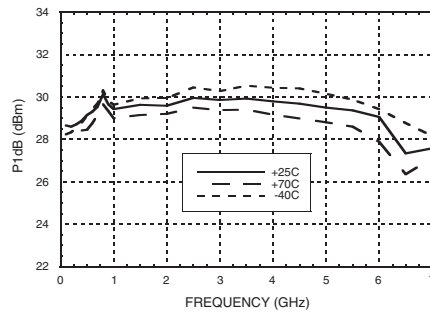
Reverse Isolation vs. Temperature



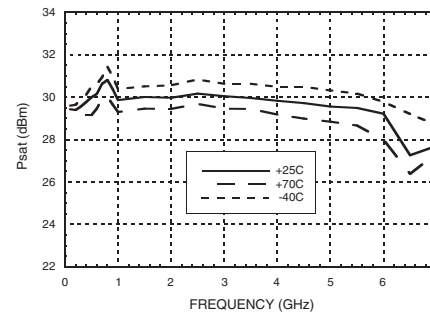
Noise Figure vs. Temperature



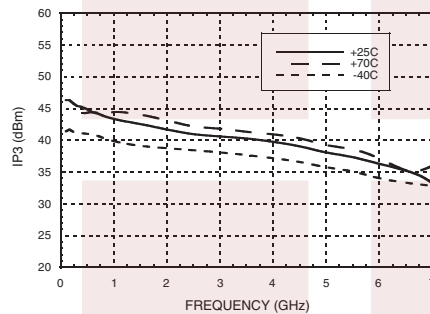
Output P1dB vs. Temperature



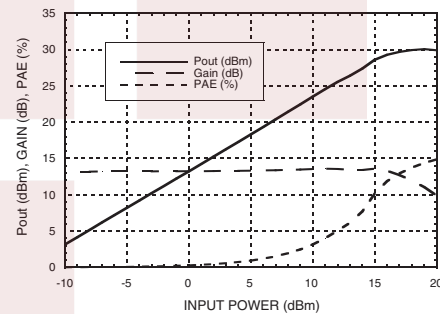
Output Psat vs. Temperature



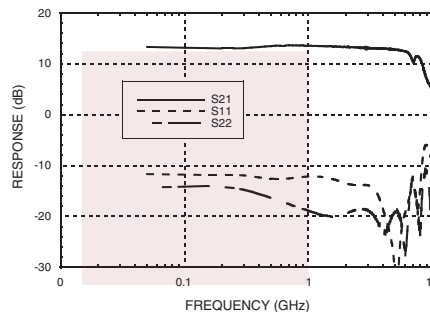
Output IP3 vs. Temperature



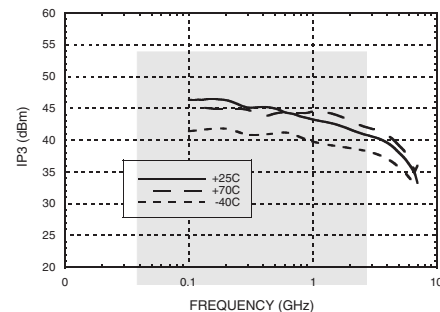
Power Compression @ 3 GHz



Gain & Return Loss vs. Frequency Log Scale



Output IP3 vs. Temperature Log Scale

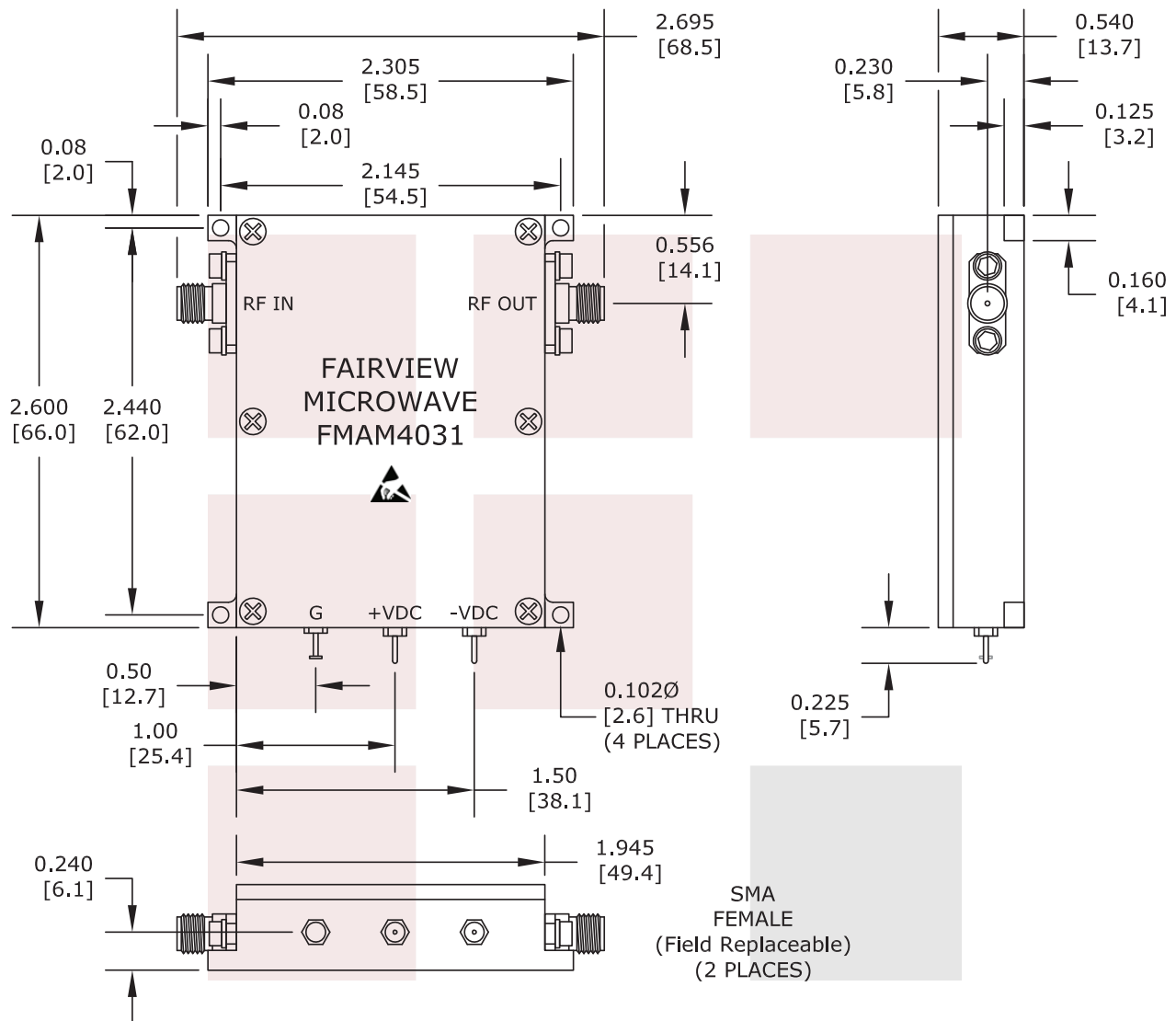


10 MHz to 6 GHz, Broadband Amplifier with 900 mW, 13 dB Gain and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [10 MHz to 6 GHz, Broadband Amplifier with 900 mW, 13 dB Gain and SMA FMAM4031](https://www.fairviewmicrowave.com/10-mhz-6-ghz-broadband-amplifier-fmam4031-p.aspx)

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

FAIRVIEW MICROWAVE INC. ALLEN, TX 75013 WWW.FAIRVIEWMICROWAVE.COM		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 10 MHz to 6 GHz, Broadband Amplifier with 900 mW, 13 dB Gain and SMA		DWG NO FMAM4031		CAGE CODE 3FKR5	
CAD FILE	051816	SHEET	SCALE	N/A	SIZE A 2233