

2 GHz to 20 GHz, Broadband Amplifier with 26 dBm, 15 dB Gain and SMA

FMAM4027 is a distributed amplifier that operates across a wide frequency range from 2 GHz to 20 GHz. The design utilizes GaAs PHEMT MMIC technology for high efficiency and high linearity. Typical performance at 2-6 GHz includes 15 dB of small signal gain, 4.0 dB noise figure, +34 dBm output IP3, and up to +27 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 the positive voltage supply. 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 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, DC Voltage = 12Volts)

Description	Min	Typ	Max	Unit
Frequency Range	2		20	GHz
Gain		15		dB
P1dB		+26		dBm
Operating DC Voltage 1		12		Volts
Operating Temperature Range (OTR)	-55		+85	°C



Features:

- Driver Amplifier
- Wide Frequency Band
- GaAs PHEMT MMIC Technology
- Spurious-Free Operation
- Gain 15 dB
- High Output IP3 +34 dBm
- Saturated Output Power up to + 27 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.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	2.0 - 6.0			6.0 - 18.0			18.0 - 20.0			GHz
Gain	13	15		11	14		9	12		dB
Gain Flatness	±.025			±0.75			±1.0			dB
Gain Variation Over Temperature		0.02	0.03		0.02	0.03		0.02	0.03	dB/ °C
Noise Figure	4.0			4.0			6.0			dB
Input Return Loss	17			18			10			dB
Output Return Loss	12			10			12			dB
Output Power For 1 dB Compression (P1dB)	23	26		20	24		19	22		dBm
Saturated Output Power (Psat)	27			25			23			dBm
Output Third Order Intercept (IP3)	34			30			25			dBm
Spurious Response	-50			-60			-60			dBc
Supply Current	310		350	310		350	310		350	mA

Mechanical Specifications

Size

Length	1.5 in [38.1 mm]
Width	0.7 in [17.78 mm]
Height	0.29 in [7.37 mm]
Weight	0.055 lbs [24.95 g]
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

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

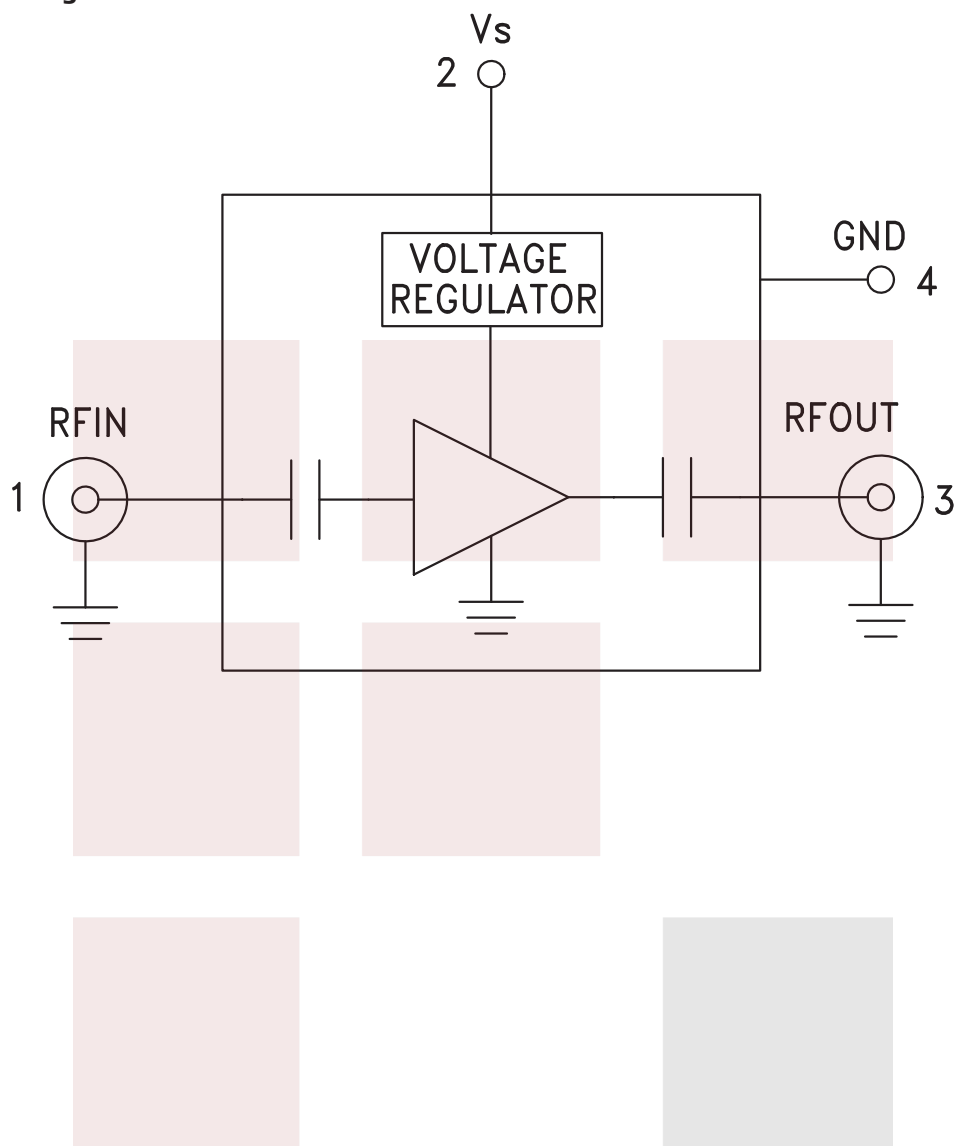
RoHS Compliant	Yes
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Plotted and Other Data

Notes:

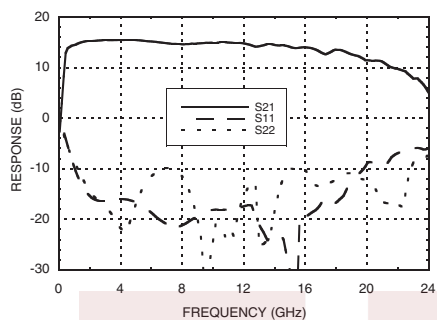
- Values at 25 °C, sea level
- ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

Functional Block Diagram

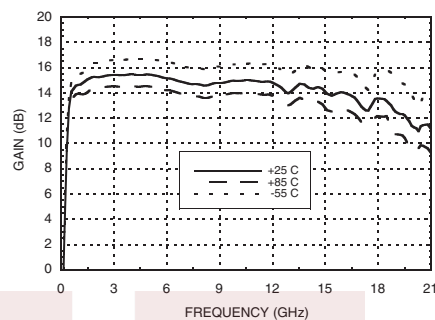


Typical Performance Data

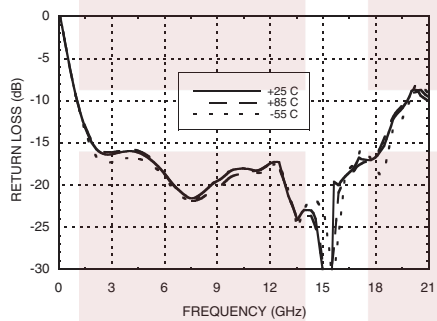
Gain & Return Loss



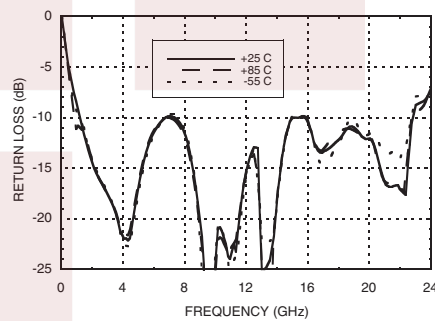
Gain vs. Temperature



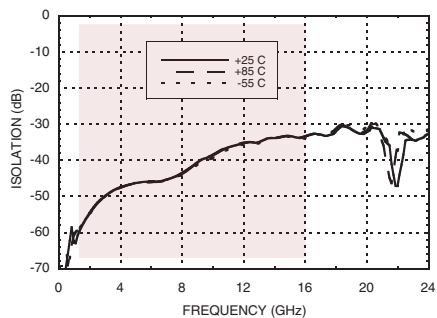
Input Return Loss vs. Temperature



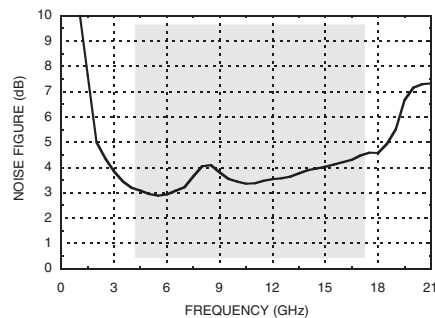
Output Return Loss vs. Temperature



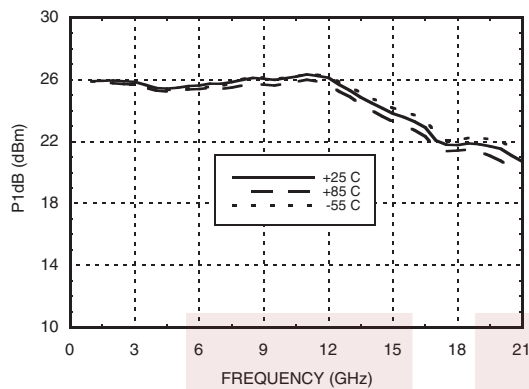
Reverse Isolation vs. Temperature



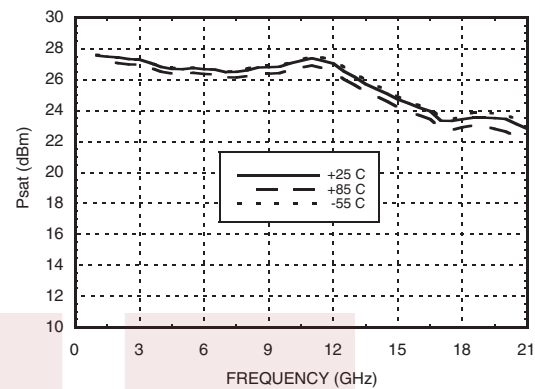
Noise Figure



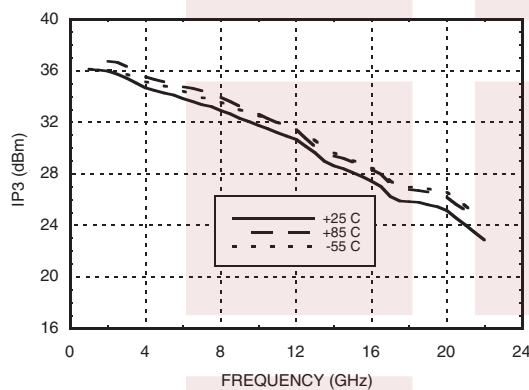
P1dB vs. Temperature



Psat vs. Temperature



Output IP3 vs. Temperature

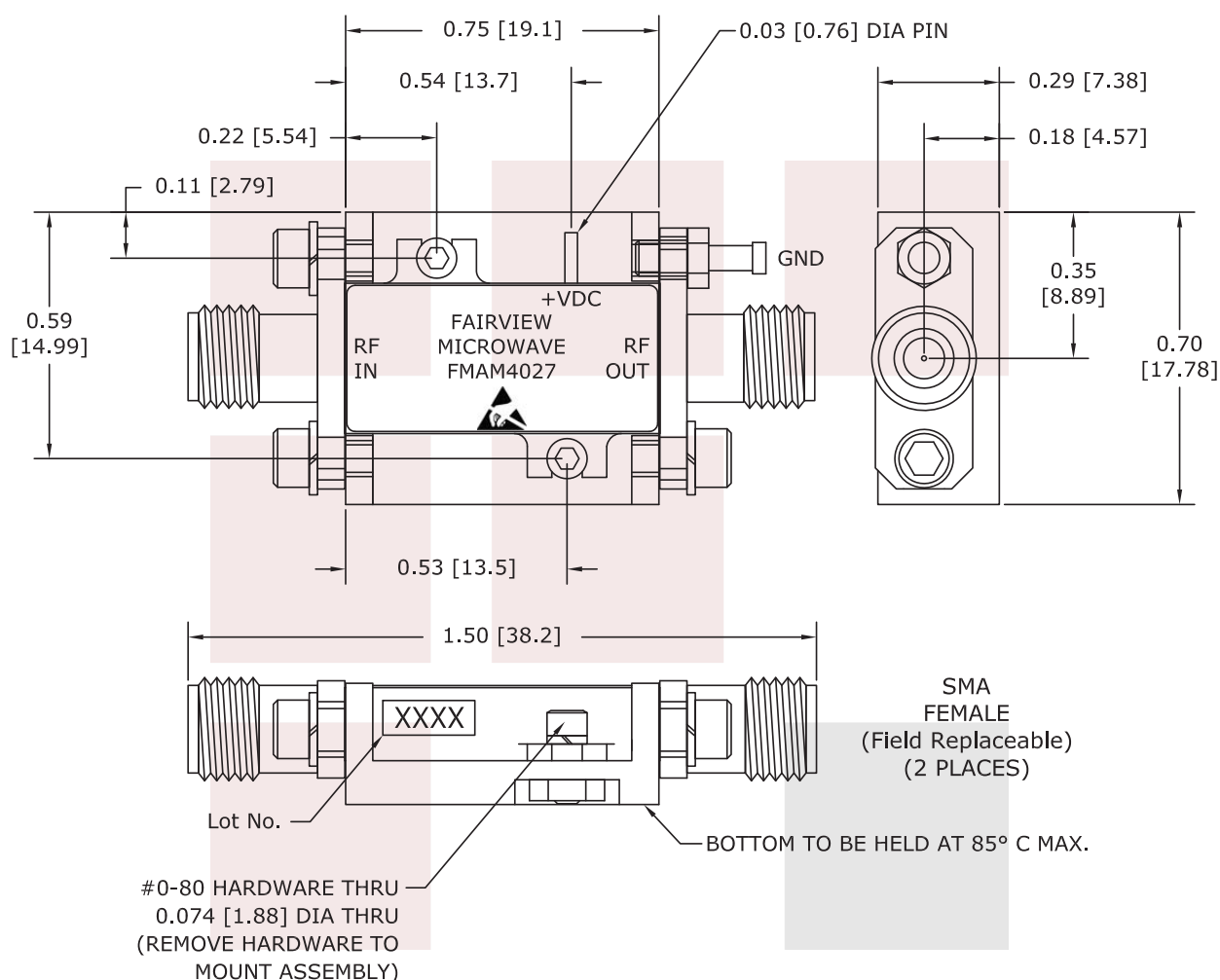


2 GHz to 20 GHz, Broadband Amplifier with 26 dBm, 15 dB Gain and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [2 GHz to 20 GHz, Broadband Amplifier with 26 dBm, 15 dB Gain and SMA FMAM4027](http://www.fairviewmicrowave.com/2-20-ghz-broadband-amplifier-fmam4027-p.aspx)

URL: <http://www.fairviewmicrowave.com/2-20-ghz-broadband-amplifier-fmam4027-p.aspx>

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

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TITLE 2 GHz to 20 GHz, Broadband Amplifier with 26 dBm, 15 dB Gain and SMA		DWG NO FMAM4027		CAGE CODE 3FKR5	
CAD FILE	050316	SHEET	SCALE	N/A	SIZE A 2233