

1 dB NF Input Protected Low Noise Amplifier, Operating from 10 MHz to 1 GHz with 40 dB Gain, 17 dBm P1dB and SMA

FMAM63001 is an Input Protected Low Noise RF coaxial amplifier operating in the 10 MHz to 1 GHz frequency range. The amplifier has a 1.0 dB typical noise figure and can handle up to 1 Watt CW input power without damage. Additional typical performance includes 40 dB small signal gain, 1.3:1 VSWR, and +17 dBm P1dB. The exceptional technical performance is achieved through the use of a 3 stage hybrid MIC assembly that incorporates a low loss input PIN Diode Limiter protective circuit followed by gain stages that use Enhancement Mode (Emode) GaAs pHEMT devices. The 50 Ohm SMA connectorized module is unconditionally stable, includes built-in DC voltage regulation, and supports DC blocking Capacitors on the RF ports. The Amplifier operates with a bias voltage of +12V typical and over the temperature range of -40°C to +85°C. This model is RoHS compliant and has an EAR99 export classification.

Electrical Specifications (TA = +25°C , DC Voltage = 12Vdc , DC Current = 110mA)

Description	Min	Typ	Max	Unit
Frequency Range	10		1,000	MHz
Small Signal Gain	37	40	42	dB
Gain Flatness		±1	±1.25	dB
Gain Variance at OTR*		1.25		dB
Output at 1 dB Compression Point	+16	+17		dBm
Output 3rd Intercept Point	+28	+31.5		dBm
Noise Figure		1	3	dB
Input VSWR		1.3:1	1.5:1	
Output VSWR		1.3:1	1.5:1	
Reverse Isolation	50	55		dB
Spurious			-70	dBc
Input Power (CW)			+30	dBm
Operating DC Voltage	10	12	15	Volts
Operating DC Current	100	110	125	mA
Operating Temperature Range	-40		+85	°C

*OTR= Base Plate Operating Temperature Range

Performance by Frequency

Description	Min	Typ	Max	Units
Frequency Band 1	10.0		50.0	MHz
Noise Figure		1.5	3.0	dB
Frequency Band 2	50.0		1000.0	MHz
Noise Figure		1.0	1.2	dB



Features:

- 10 MHz to 1 GHz Frequency Range
- 1 Watt CW input protection
- P1dB: 17 dBm
- High Small Signal Gain: 40 dB typical
- Gain Flatness: ±1 dB
- Noise Figure: 1.0 dB typ
- 50 Ohm Input and Output Matched
- -40 to +85°C Operating Temperature
- Single DC Positive Supply
- DC Blocking Capacitors

Applications:

- R&D Labs
- Radar Systems
- Test Instrumentation
- Communication Systems
- IF Amplifier/RF Driver Amplifier
- RF Wideband Front Ends

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Absolute Maximum Rating

Parameter	Rating	Units
Source Voltage	+15	Volts
RF input Power	+30	dBm
Operating Temperature	-40 to +75	°C
Storage Temperature	-55 to +125	°C



ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

Mechanical Specifications

Size

Length	1.2 in [30.48 mm]
Width	0.85 in [21.59 mm]
Height	0.375 in [9.53 mm]
Weight	0.053 lbs [24.04 g]
Input Connector	SMA Female
Output Connector	SMA Female

Environmental Specifications

Temperature

Operating Range	-40 to +85 deg C
Storage Range	-55 to +125 deg C

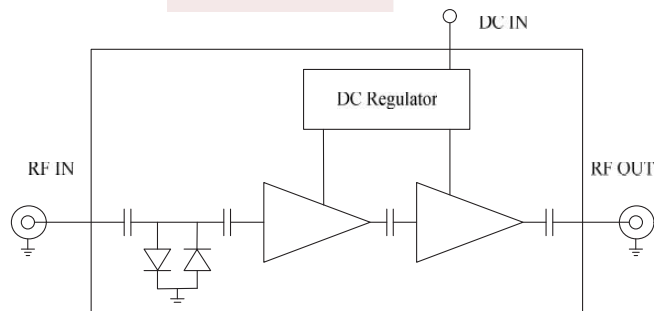
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

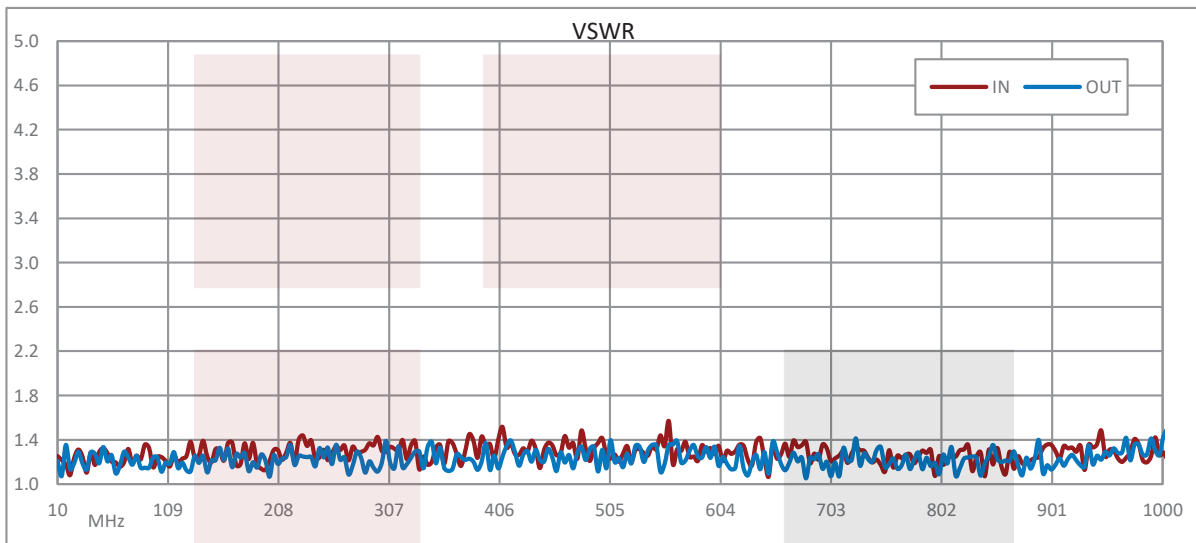
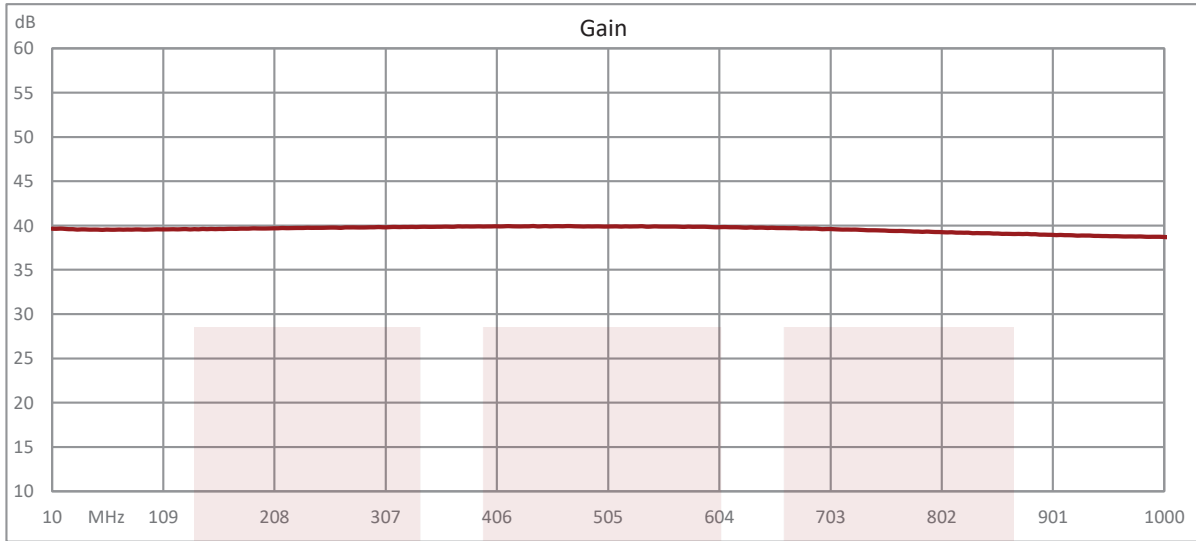
Notes:

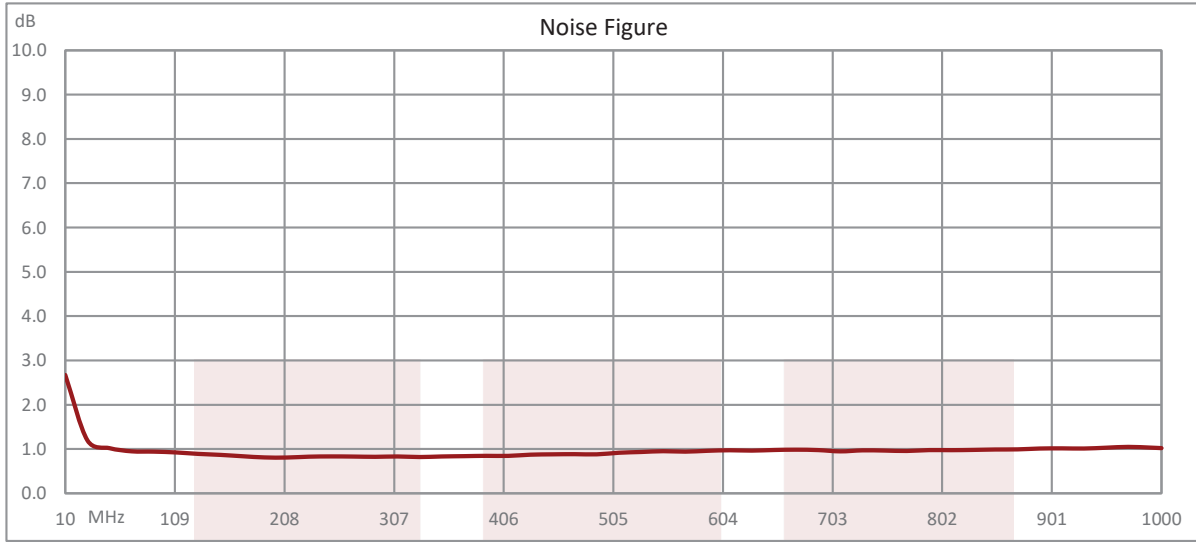
- Values at 25 °C, sea level
- ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

Functional Block Diagram



Typical Performance Data



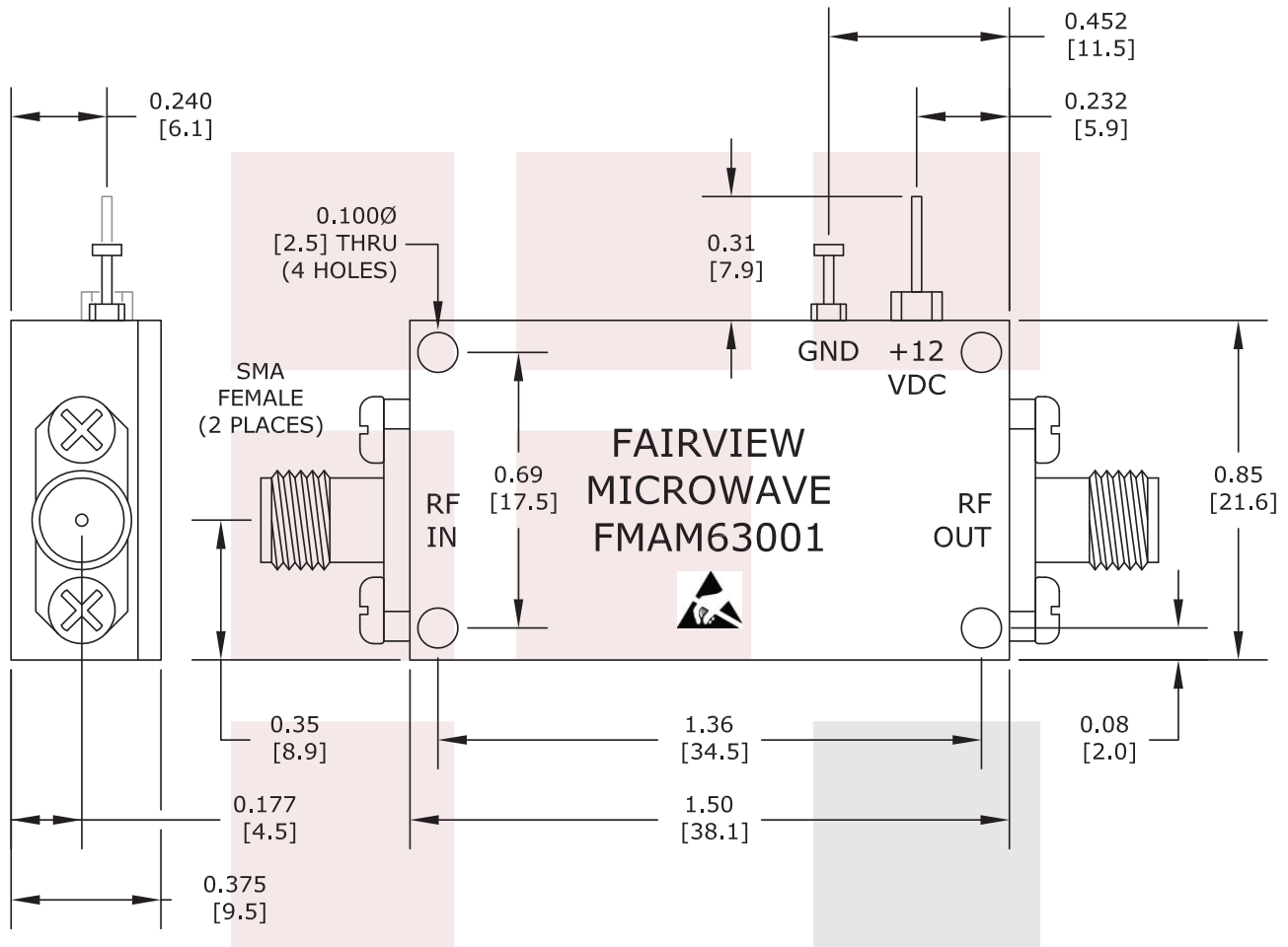


1 dB NF Input Protected Low Noise Amplifier, Operating from 10 MHz to 1 GHz with 40 dB Gain, 17 dBm P1dB and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [1 dB NF Input Protected Low Noise Amplifier, Operating from 10 MHz to 1 GHz with 40 dB Gain, 17 dBm P1dB and SMA FMAM63001](https://www.fairviewmicrowave.com/1db-nf-low-noise-amplifier-40db-fmam63001-p.aspx)

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The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.



STANDARD TOLERANCES	
.X	±0.2
.XX	±0.1
.XXX	±0.05

*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES

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TITLE 1 dB NF Input Protected Low Noise Amplifier, Operating from 10 MHz to 1 GHz with 40 dB Gain, 17 dBm P1dB and SMA		DWG NO FMAM63001		CAGE CODE 3FKR5	
CAD FILE	101716	SHEET	SCALE	N/A	SIZE A 2233