

**42 dB Gain, 18 dBm P1dB, 0.1 GHz to 50 GHz,
 Broadband AC Low Noise Amplifier, Bench-Top,
 110/240VAC, 5 dB Noise Figure, 2.4mm**

The FMAM63029 is an AC powered Bench-Top Low Noise Amplifier that operates across an ultra wideband frequency range from 100 MHz to 50 GHz. This 50 Ohm highly linear design exhibits impressive typical performance that includes 42 dB gain, 5 dB noise figure, +18 dBm P1dB, and +28 dBm output IP3. Maximum RF input power (CW) is -18 dBm. The rugged MIL Grade aluminium package is finished in gray paint and has 2.4mm Female connectors at the RF input and output ports, and an indicator light on the front panel. The rear panel supports an IEC 320-C14 AC power socket (IEC 320-C13 plug required) and an On/Off switch. The module supports a wide operating AC voltage range from 110VAC to 240VAC with 65 mA supply current. Designed for high reliability, the package supports an integrated heatsink and cooling fan and is suitable for outdoor operation (moisture exposure dependent on temperature and humidity conditions). The amplifier has an operational temperature range from -40°C to +85°C and meets a series of environmental test conditions including Altitude, Vibration, Humidity, and Shock.


Features:

- AC Powered Bench-Top Low Noise Amplifier/100 MHz to 50 GHz
- High Linearity
- Small Signal Gain 42 dB typ
- Low Noise Figure 5 dB typ
- VSWR 2.4:1 typ
- Output P1dB +18 dBm typ
- Output Psat +20 dBm typ
- Output IP3 +28 dBm typ
- AC Supply 110-240VAC @ 65 mA
- Max RF Input Power (CW) -18 dBm
- 50 Ohm Design
- Integrated Heatsink and Cooling Fan
- RF Input and Output 2.4mm Female Connectors
- On/Off Switch and Indicator Light
- Operational Temperature Range -40°C to +85°C
- Rugged MIL Grade Aluminum Package Design with Gray Paint finish
- Guaranteed Environmental Test Conditions Altitude, Vibration, Humidity, Shock

Electrical Specifications (TA= 25°C)

Description	Min	Typ	Max	Unit
Frequency Range	0.1		50	GHz
Gain	35	42		dB
Gain Flatness		±3.5		dB
Gain Variation over Temp.		±2.5		dB/°C
P1dB		+18		dBm
Saturation Output Power		+20		dBm
IP3		+28		dBm
Reverse Isolation		-60		dB
Noise Figure		5.5		dB
Input VSWR		2.5:1		
Output VSWR		2.2:1		
Operating AC Voltage		110 to 240		VAC
Supply Current (AC 110-220V)		65		mA
Operating Temperature Range (OTR)	-40		+85	°C

Performance by Frequency
Biasing Up Procedure

Step 1	Connect input and output with 50 Ohm source and load with in band return loss better than 10dB.
Step 2	Connect AC Plug
Step 3	Flip switch to "ON" position

Power OFF Procedure

Step 1	Flip switch to "OFF" position
Step 2	Remove AC Plug
Step 3	Remove RF Connection

Applications:

- Test & Measurement
- 5G Communication
- Wireless Infrastructure
- Military & Commercial Communications
- Military Electronic Systems
- Research & Development
- Microwave Radio
- VSAT
- Fiber Optics

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Absolute Maximum Rating

Parameter	Rating
Supply Voltage	110V to 240V AC
RF Input Power (RFIN)*	-18dBm

*Note: Maximum RF input power is defined to protect the amplifier from damage. Input power may be increased at the users ownrisk to achieve the full output power of the amplifier. Please reference gain and power curves and monitor the temperature.

Mechanical Specifications
Size

Length	6.46 in [164.08 mm]
Width	5.83 in [148.08 mm]
Height	2.28 in [57.91 mm]
Weight	2.5 lbs [1.13 kg]
Input Connector	2.4mm Female
Output Connector	2.4mm Female

Environmental Specifications
Temperature

Operating Range	-40 to +85 deg C
Storage Range	-50 to +105 deg C

Humidity	100% RH at 35°C, 95%RH at 40°C
Shock	20G for 11msec half sine wave, 3 axis both directions
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Altitude	30,000 ft.

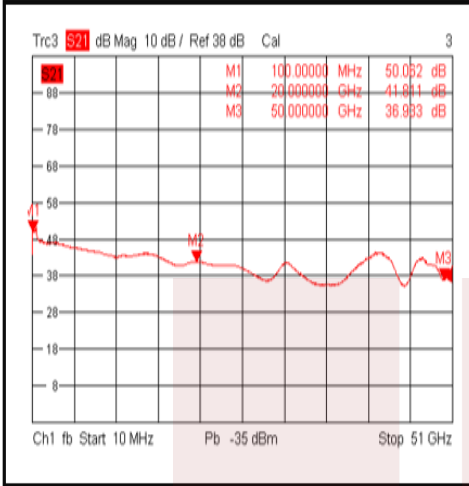
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

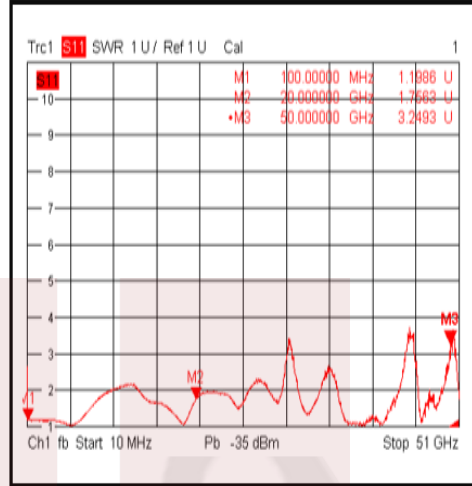
Notes:

Typical Performance Data

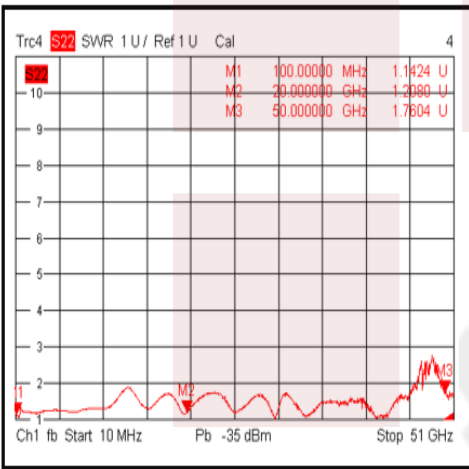
Gain @+25°C



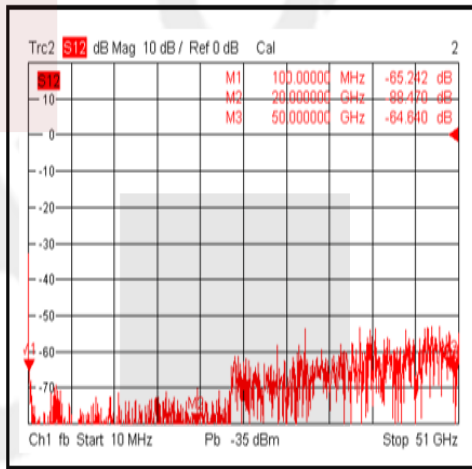
Input VSWR @+25°C



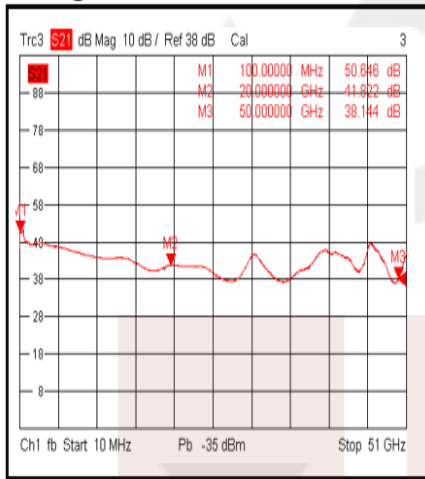
Output VSWR @+25°C



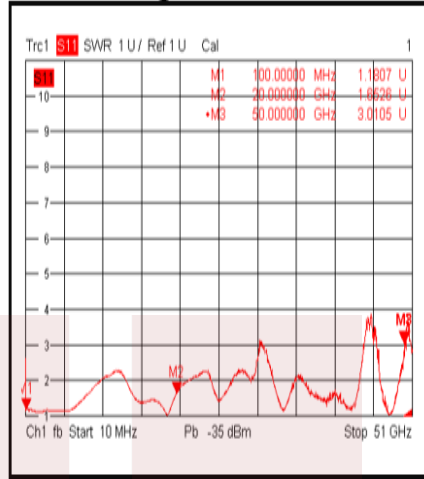
Isolation @+25°C



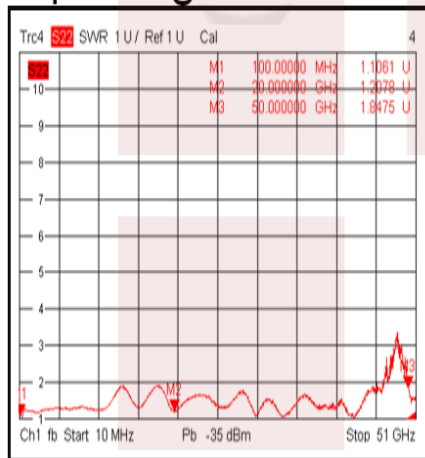
Gain @-40°C



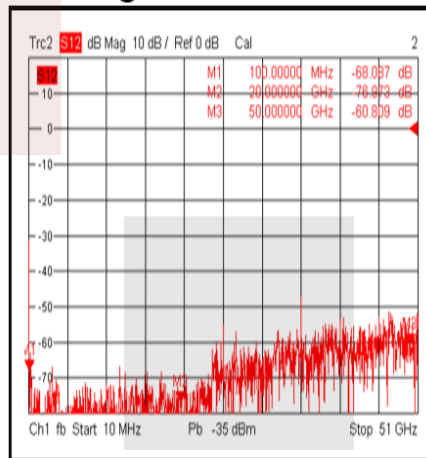
Input VSWR @-40°C



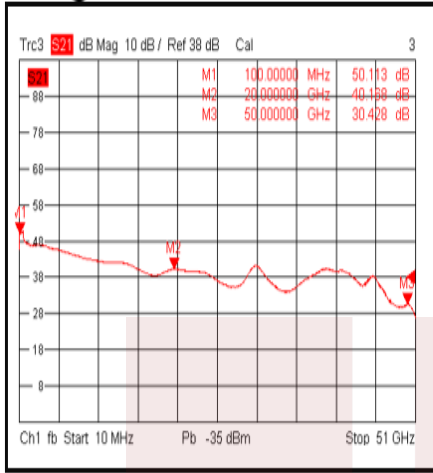
Output VSWR @-40°C



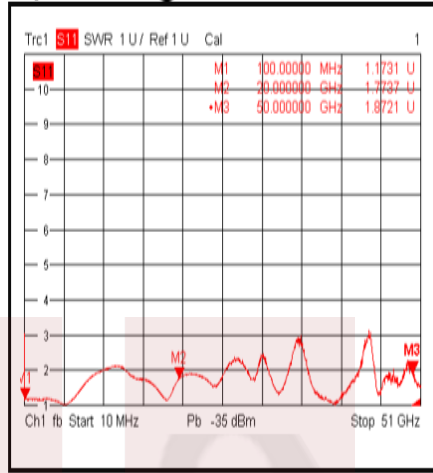
Isolation @-40°C



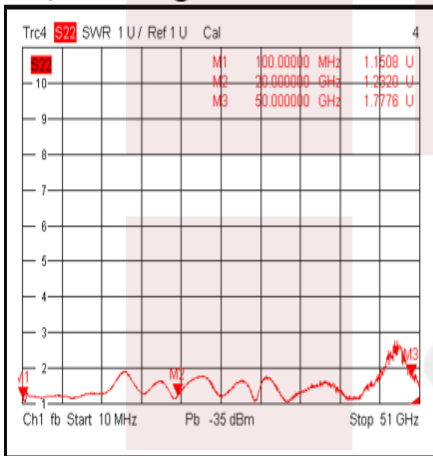
Gain @+85°C



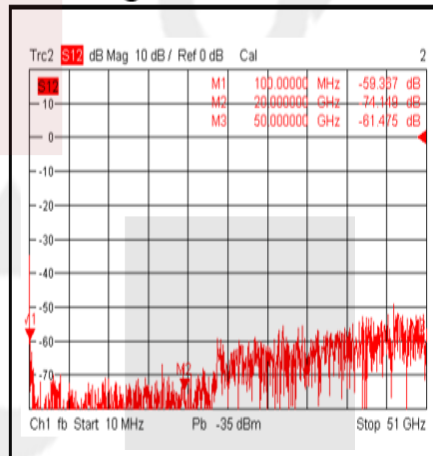
Input VSWR @+85°C



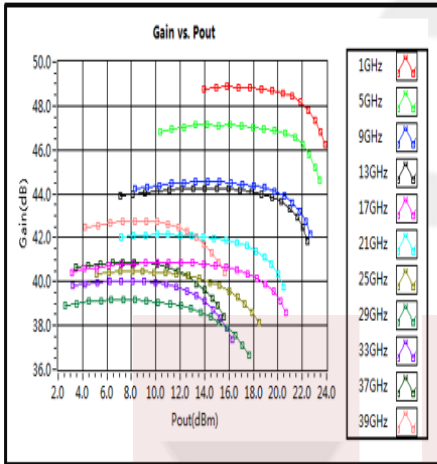
Output VSWR @+85°C



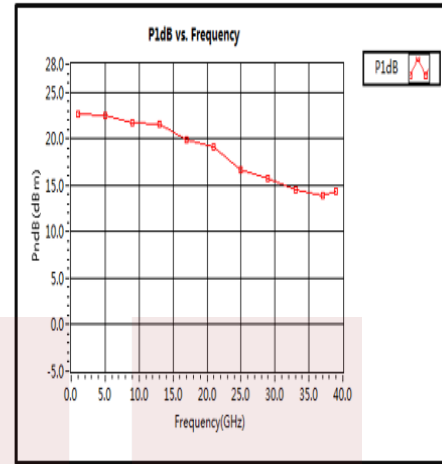
Isolation @+85°C



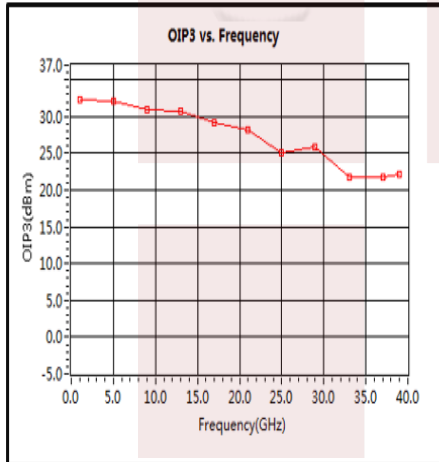
Gain vs. Output Power



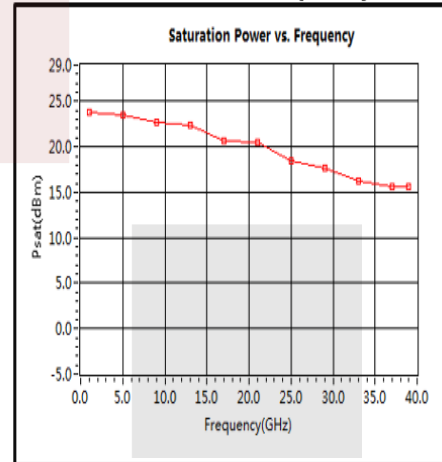
P1dB vs. Frequency



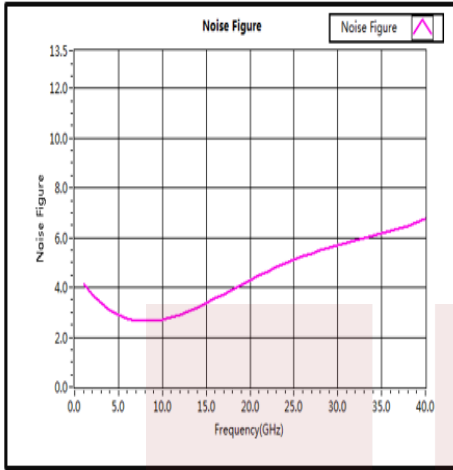
Output Third Order Intercept (OIP3)



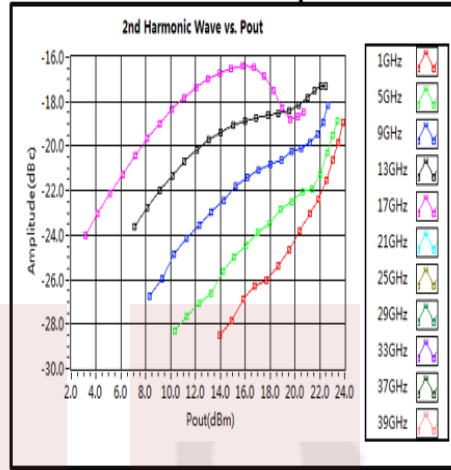
Saturation Power vs. Frequency



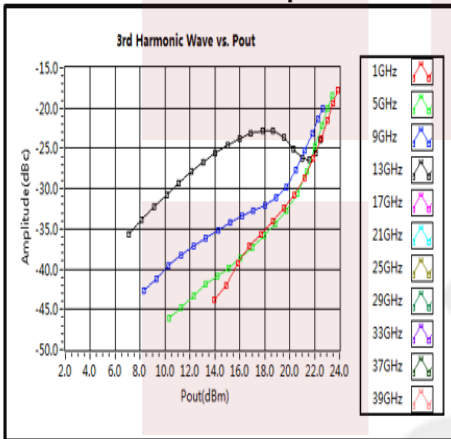
Noise Figure



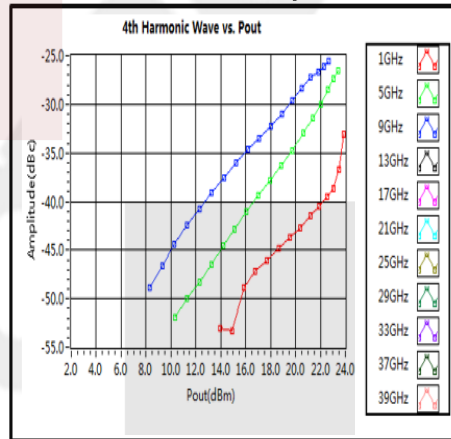
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power

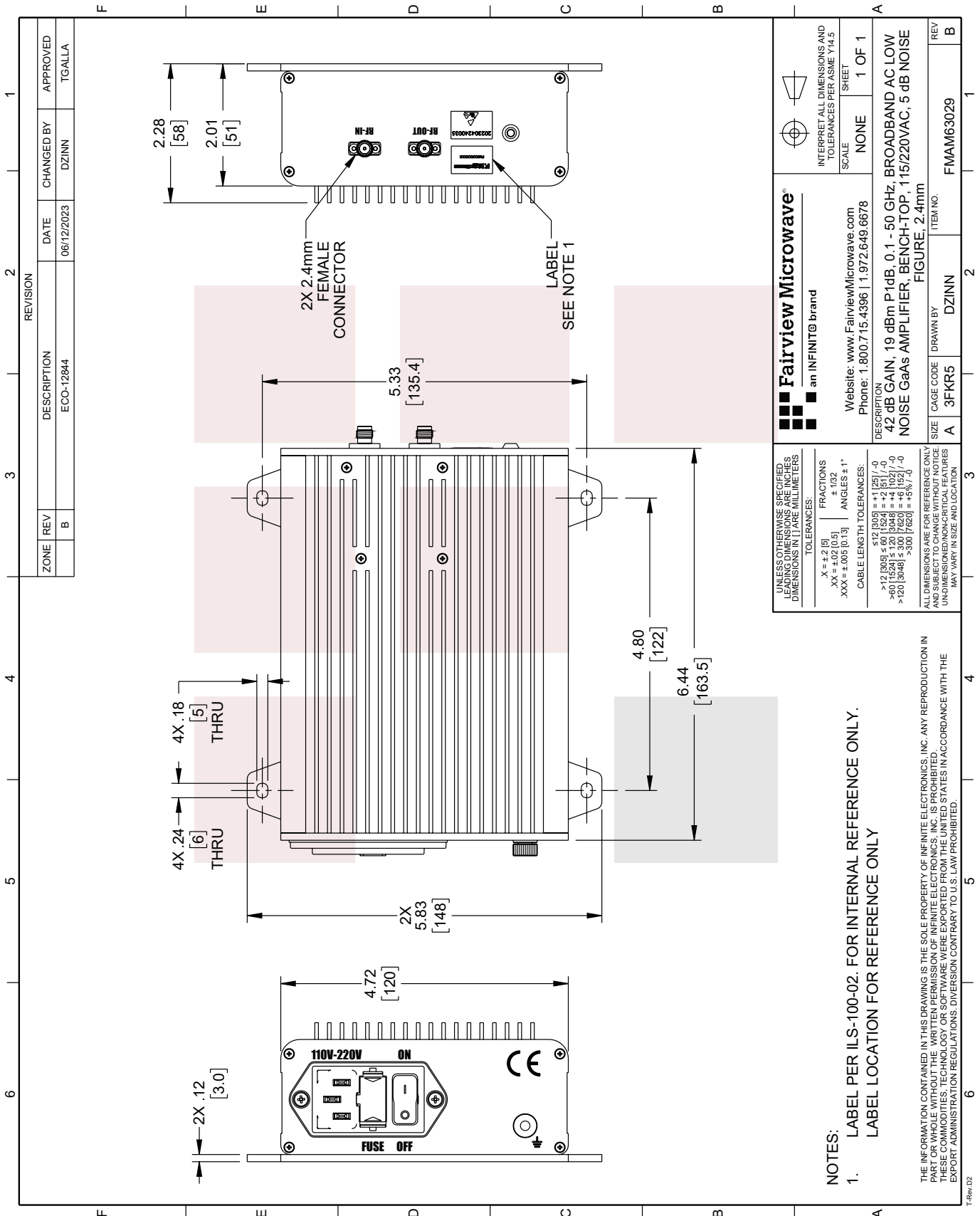


42 dB Gain, 18 dBm P1dB, 0.1 GHz to 50 GHz, Broadband AC Low Noise Amplifier, Bench-Top, 110/240VAC, 5 dB Noise Figure, 2.4mm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [42 dB Gain, 18 dBm P1dB, 0.1 GHz to 50 GHz, Broadband AC Low Noise Amplifier, Bench-Top, 110/240VAC, 5 dB Noise Figure, 2.4mm FMAM63029](#)

URL: <https://www.fairviewmicrowave.com/100-mhz-50-ghz-low-noise-broadband-amplifier-fmam63029-p.aspx>

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B		ECO-12844		06/12/2023	DZINN		TGALLA		

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UNLESS OTHERWISE SPECIFIED, LEADING DIMENSIONS ARE IN INCHES. DIMENSIONS IN [] ARE MILLIMETERS.

TOLERANCES:
 X = ±.2 [5]
 .XX = ±.02 [0.5]
 .XXX = ±.005 [0.13]
 ANGLES ± 1°

FRACTIONS ± 1/32

CABLE LENGTH TOLERANCES:
 0-12 [305] ≤ ±.125 [-0
 12-60 [3048] ≤ ±.120 [3048]
 60-120 [3048] ≤ ±.300 [7620] = +6 [-52] / -0
 >120 [3048] ≤ ±.300 [7620] = +6 [-52] / -0
 >300 [7620] = +5% / -0

ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE. UNDIMENSIONED/NON-CRITICAL FEATURES MAY VARY IN SIZE AND LOCATION.

INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5

SCALE NONE

SHEET 1 OF 1

DESCRIPTION
42 dB GAIN, 19 dBm P1dB, 0.1 - 50 GHz, BROADBAND AC LOW NOISE GaAs AMPLIFIER, BENCH-TOP, 115/220VAC, 5 dB NOISE FIGURE, 2.4mm

REV	B
ITEM NO.	FMAM63029
SIZE	A
CAGE CODE	3FKR5
DRAWN BY	DZINN

NOTES:

1. LABEL PER ILS-100-02. FOR INTERNAL REFERENCE ONLY.
 LABEL LOCATION FOR REFERENCE ONLY

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