

## Variable Gain Control Amplifier, 4 GHz to 12 GHz, GaAs FET, 40 dB Gain, 20 dB Variable Gain, +15 dBm P1dB, SMA

The FMAM7005 is an RF amplifier with voltage variable gain control that covers a broadband frequency from 4 GHz to 12 GHz. The module provides a continuously variable gain control of 20 dB over the entire frequency band which gives the Designer increased dynamic range and the ability to set signal levels. The low control current (typically less than 10 mA) simplifies control driver requirements. The design incorporates the use of GaAs FET and MMIC fixed-gain modules to provide low noise figure and medium power output over the entire frequency band. Typical performance for the 50 ohm design with 0V gain control includes 47 dB small signal gain, 3.5 dB noise figure, and +16.5 dBm output P1dB. DC Bias Voltage ranges from +12V to +15V with 360 mA current, and variable gain control voltage ranges from 0V for maximum gain to +5V for minimum gain. The rugged Mil Grade aluminum package supports SMA female connectors, has an operational temperature range of 0°C to +50°C, and is designed to meet a series of environmental conditions including Altitude, Vibration, Humidity, and Shock.

**Electrical Specifications** (TA = +25°C, DC Voltage = 15Volts, DC Current = 360mA)

Description	Minimum	Typical	Maximum	Units
Frequency Range	4		12	GHz
Small Signal Gain	40	47		dB
Gain Flatness			±2.75	dB
Gain Control Range		20		dB
Output at P1dB*	+15	+16.5		dBm
P1dB at +5V Gain Control		15		dBm
Noise Figure*		3.5	4	dB
Input VSWR		1.3:1	2:1	
Output VSWR		1.5:1	2:1	
Operating DC Voltage	12	15	16	Volts
Control Voltage DC	0		5	Volts
Control DC Current		10		mA
Operating DC Current		360		mA

### Mechanical Specifications

Size	
Length	1.4 in [35.56 mm]
Width	1.39 in [35.31 mm]
Height	0.4 in [10.16 mm]
Weight	0.21 lbs [95.25 g]
Input Connector	SMA Female
Output Connector	SMA Female

### Environmental Specifications

Temperature	
Operating Range	0 to +50 deg C
Storage Range	-40 to +100 deg C



### Features:

- Variable Gain Amplifier
- Frequency Range 4 GHz to 12 GHz
- GaAs FET Semiconductor Technology
- Small Signal Gain 47 dB Typ
- Variable Gain 20 dB
- Output P1dB +16.5 dBm Typ
- Noise Figure 3.5 dB Typ
- DC Voltage +12 to +15 Vdc
- DC Current 360 mA
- DC Control Voltage 0V to +5V
- DC Control Current < 10 mA
- 50 Ohm Design
- 0°C to +50°C Operating Temperature
- SMA Female Connectors
- Rugged Mil Grade Aluminum Package Design

### Applications:

- Aerospace & Defense
- Test & Measurement
- Microwave Radio Systems
- Military & Commercial Communication Systems
- Research & Development
- RF Front Ends
- SATCOM
- Wireless Communications
- Unmanned Systems

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Shock  
Vibration

MIL-STD-202F, Method 213B, Condition B  
MIL-STD-202F, Method 204D, Condition B

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

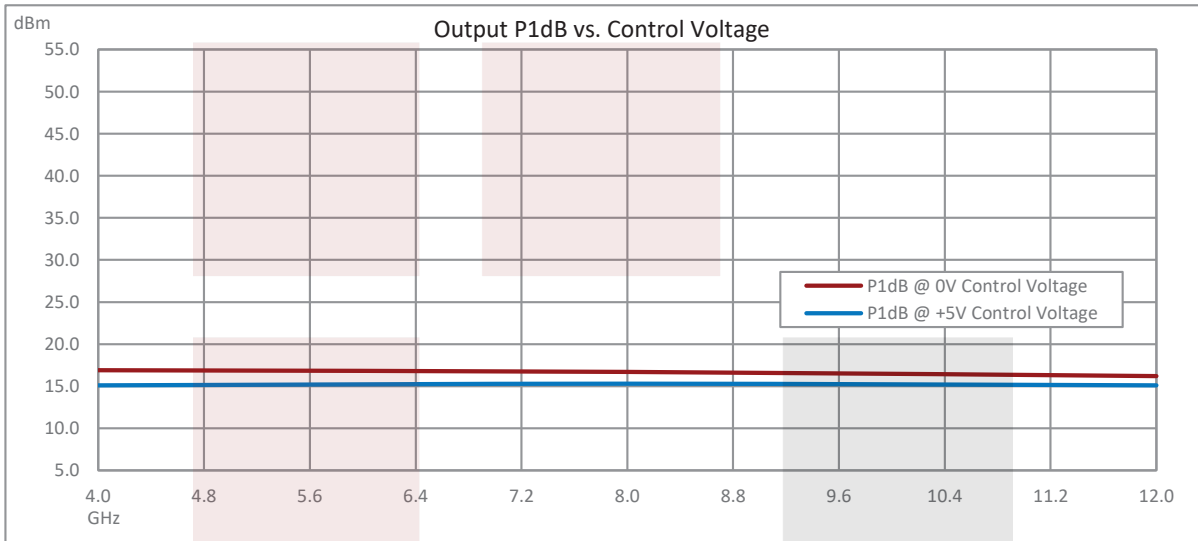
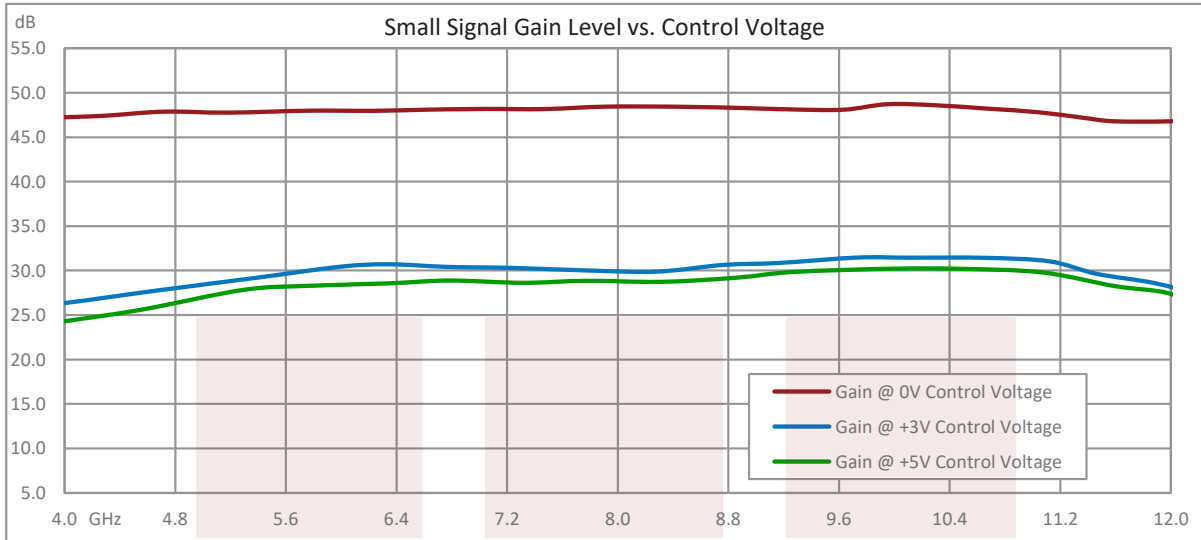
**Plotted and Other Data**

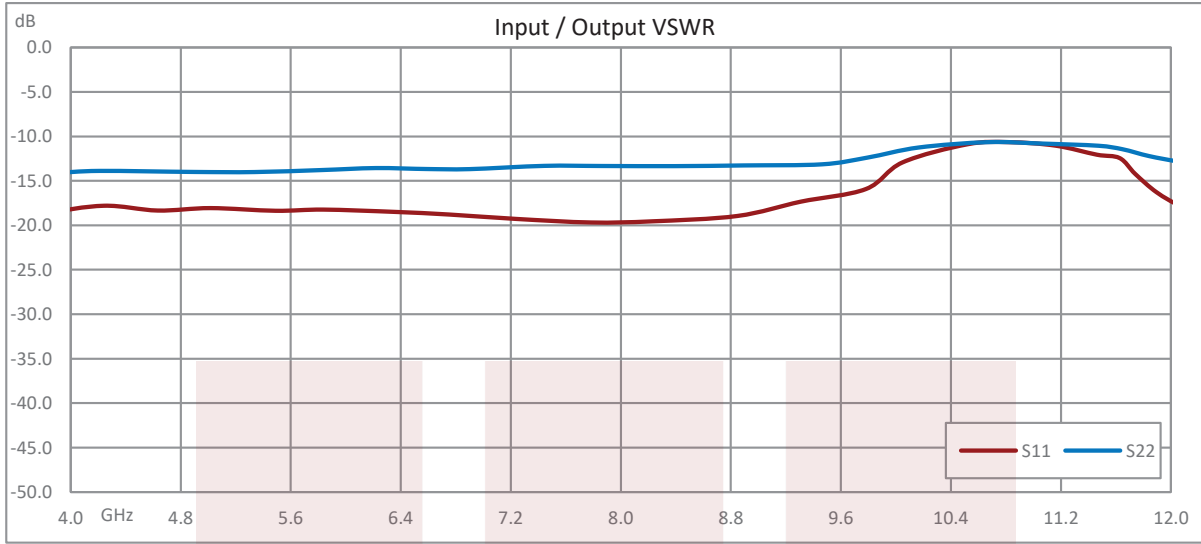
Notes:

- Values at +25 °C, sea level
- \*At 0V Gain Control
- DC Bias to the RF input may damage the Amplifier



**Typical Performance Data**





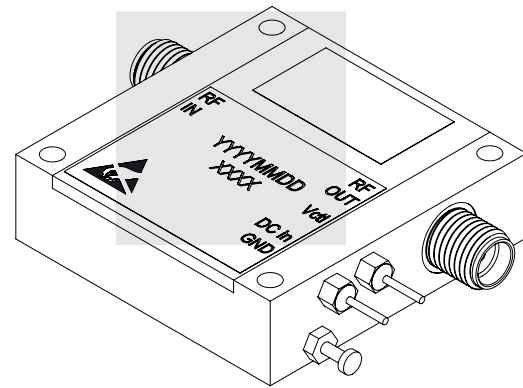
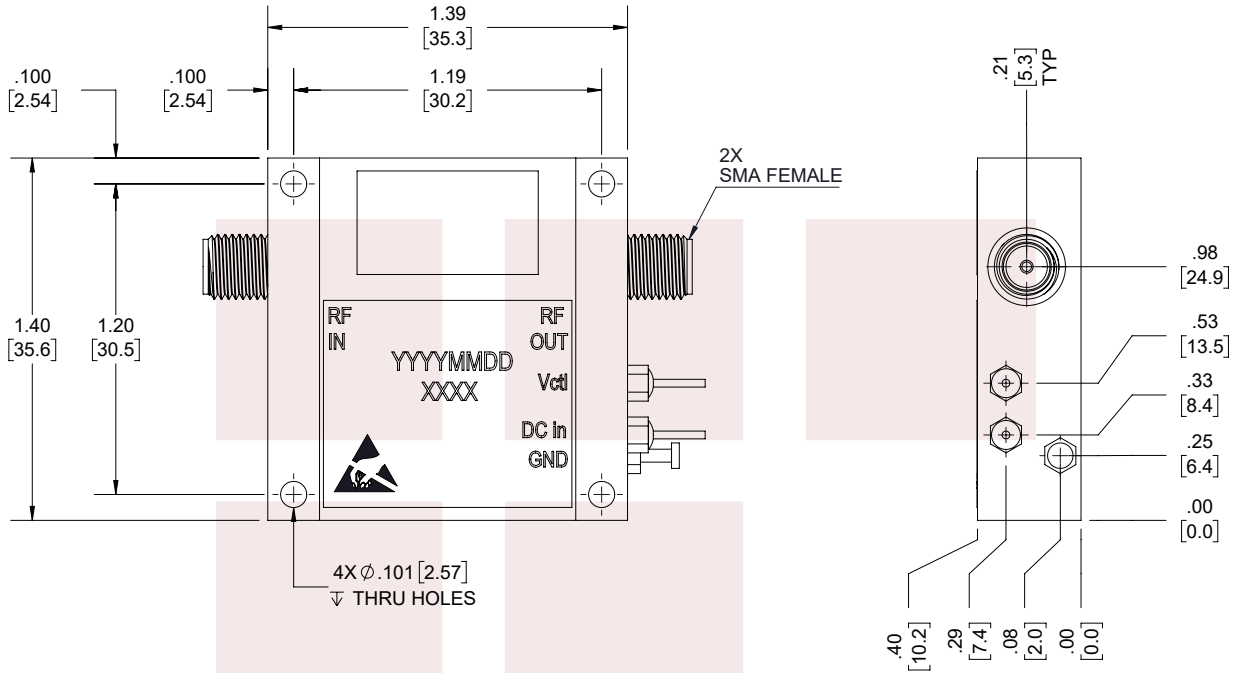
Variable Gain Control Amplifier, 4 GHz to 12 GHz, GaAs FET, 40 dB Gain, 20 dB Variable Gain, +15 dBm P1dB, SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [Variable Gain Control Amplifier, 4 GHz to 12 GHz, GaAs FET, 40 dB Gain, 20 dB Variable Gain, +15 dBm P1dB, SMA FMAM7005](https://www.fairviewmicrowave.com/40-db-gain-variable-gain-amplifier-sma-fmam7005-p.aspx)

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	9/3/2020	T.GALLA



**LABEL**



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**TITLE**  
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GaAs FET, 40 dB Gain, 20 dB Variable Gain, +15 dBm  
P1dB, SMA

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

TOLERANCES: FRACTIONS CABLE LENGTH (L) TOLERANCES:

.X = ±.2 [5.08] FRACTIONS L ≤ 12 [305] = +1 [25] / -0  
 .XX = ±.02 [.51] ± 1/32 12 [305] < L ≤ 60 [1524] = +2 [51] / -0  
 .XXX = ±.005 [.13] ANGLES ± 1° 60 [1524] < L ≤ 120 [3048] = +4 [102] / -0  
 120 [3048] < L ≤ 300 [7620] = +6 [152] / -0  
 300 [7620] < L = +5%L / -0

THIRD-ANGLE PROJECTION



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SHEET 1 OF 1

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

SCALE N/A

SIZE A	CAGE CODE 3FKR5	DRAWN BY K.DANG	ITEM NO. FMAM7005	REV A
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T-Rev.D