

VCO (Voltage Controlled Oscillator) Frequency of 18 MHz to 30 MHz, Phase Noise -120 dBc/Hz and SMA

The FMVC31000 is a High Reliability Low Noise Voltage Controlled Oscillator (VCO) which covers a 18 MHz to 30 MHz frequency band with a voltage tuning range from 0.5V to 12V. This design features exceptional phase noise performance of -120 dBc/Hz @ 10 kHz offset. Supply Voltage is +12V with a generated output power level of +12 dBm and 2nd harmonic output of -13 dBc typical. The assembly is RoHS compliant and available in a compact sized rugged metal housing with supports a field replaceable SMA female connector, RFI Voltage and ground pins. The VCO operates over a temperature range of -40°C to +85°C and is designed to meet a variety of MIL-STD-202 test conditions including Humidity, Shock, and Vibration.



Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	18		30	MHz
Tuning Voltage	0.5		12	Vdc
Supply Voltage (DC)	11	12	13	Vdc
Supply Current (DC)		16	19	mA
Phase Noise @1kHz Offset		-95	-92	dBc/Hz
Phase Noise @10kHz Offset		-120	-118	dBc/Hz
Phase Noise @100kHz Offset		-140	-138	dBc/Hz
Output Power	+10	+12	+13.5	dBm
Tuning Sensitivity (Kvco)	0.9		1.8	MHz/V
Pushing		0.03	0.05	MHz/V
Pulling (pk-pk)		70	100	KHz
Tuning Port Capacitance		100		pF
Load Impedance		50		Ohms
2nd Harmonics		-13	-12	dBc

Electrical Specification Notes:
Pulling @ 1.5 VSWR

Mechanical Specifications

Size	
Length	0.95 in [24.13 mm]
Width	0.95 in [24.13 mm]
Height	0.285 in [7.24 mm]
Weight	0.0295 lbs [13.38 g]
Body Material and Plating	Aluminum
Design	Commercial
Output Connector	SMA Female

Environmental Specifications

Temperature	
Operating Range	-40 to +85 deg C
Storage Range	-55 to +125 deg C
Humidity	MIL-STD-202, Method 103, 90% RH, +65 C
Shock	MIL-STD-202, Method 213I
Vibration	MIL-STD-202, Method 204D

Features:

- 18 to 30 MHz Bandwidth
- -120 dBc/Hz @ 10kHz offset
- Tuning Voltage 0.5V to 12V
- Pout = +12 dBm
- Harmonics = -13 dBc
- RoHS Compliant Assembly
- Compact Size Rugged Metal Coaxial package
- Field Replaceable SMA Female Connector
- Designed to meet MIL-STD-202 Environmental Conditions

Applications:

- Phase Locked Loop
- Function Generators
- Frequency Synthesizers
- Receivers
- Electronic Jamming Equipment
- Local Oscillator
- Wireless Communications
- SATCOM
- Optical Communications
- Military Electronic Systems

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Temperature Cycle
 ESD Sensitivity

MIL-STD-202, Method 107B
 ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.

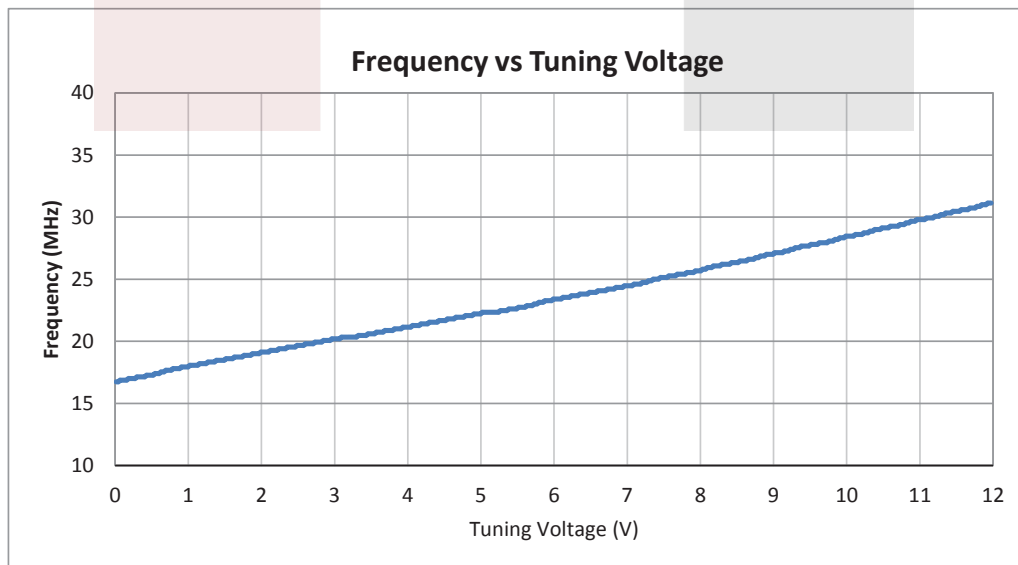
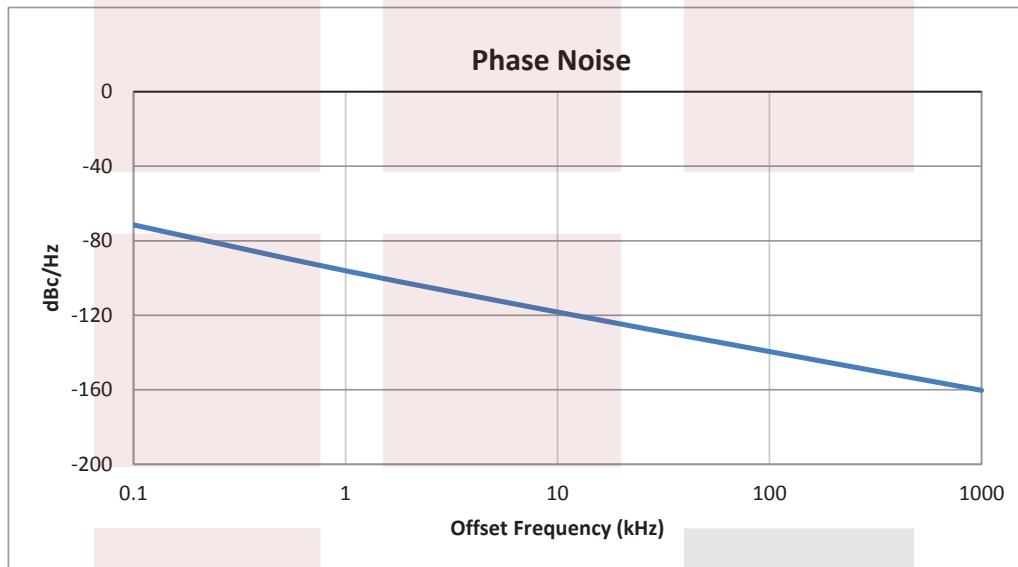


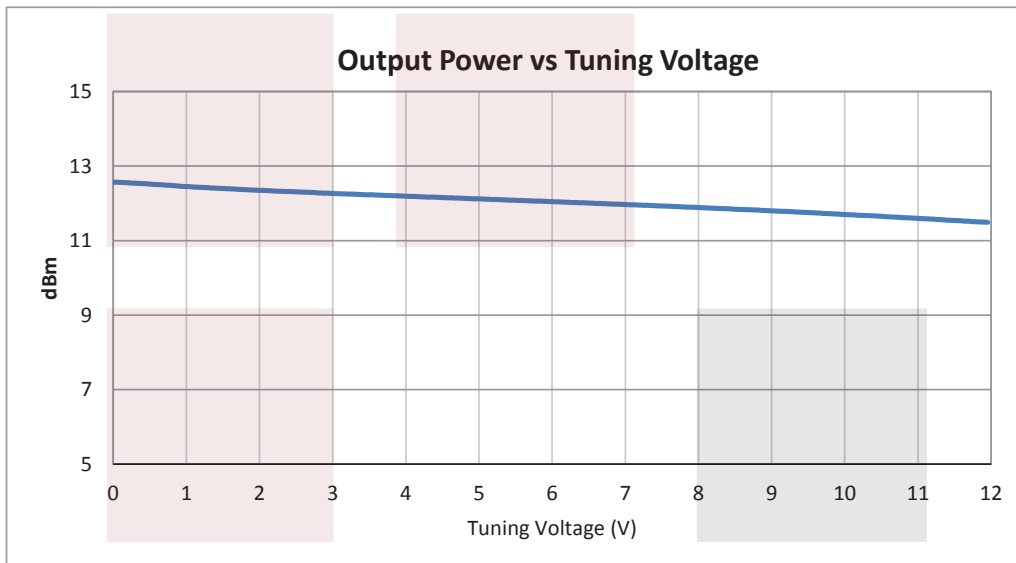
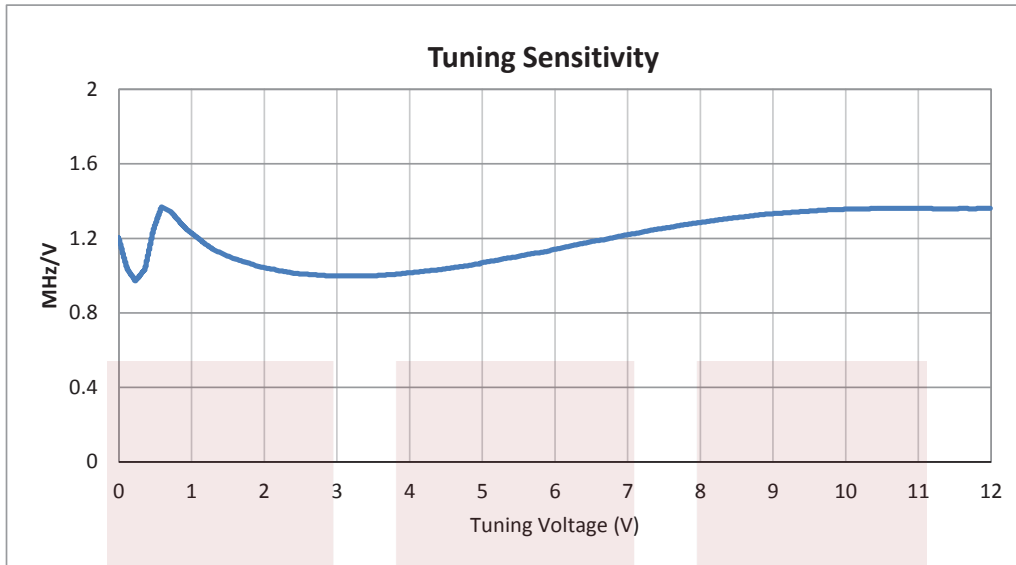
Compliance Certifications (see [product page](#) for current document)

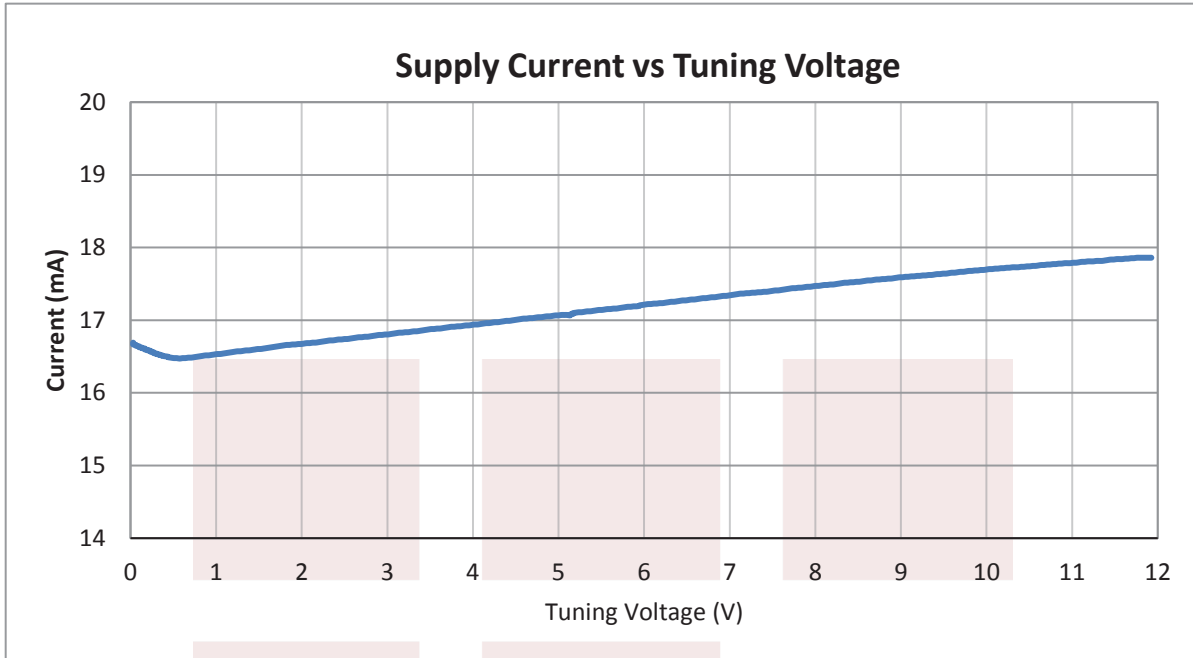
Plotted and Other Data

Notes:

Typical Performance Data





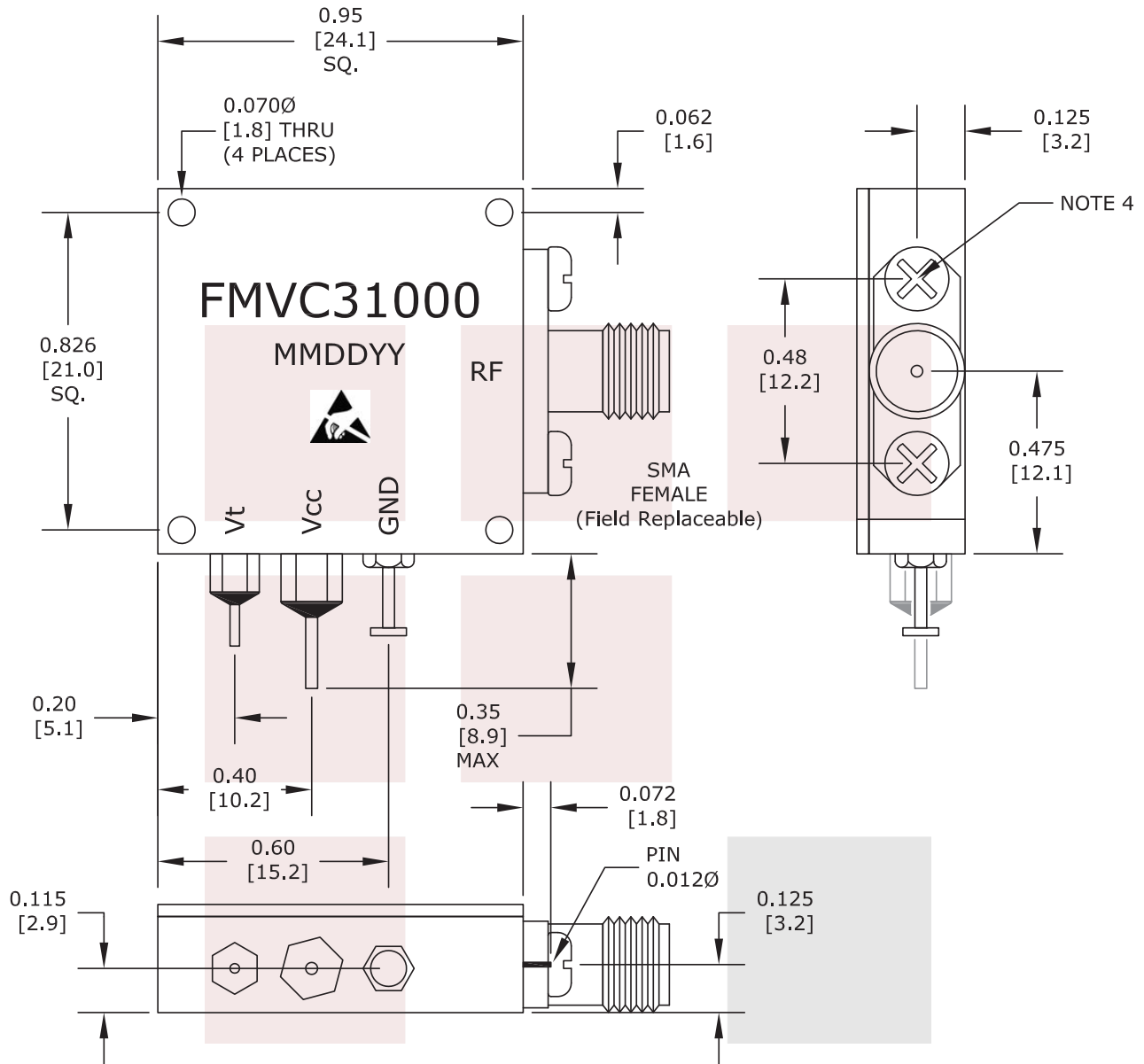


VCO (Voltage Controlled Oscillator) Frequency of 18 MHz to 30 MHz, Phase Noise -120 dBc/Hz and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [VCO \(Voltage Controlled Oscillator\) Frequency of 18 MHz to 30 MHz, Phase Noise -120 dBc/Hz and SMA FMVC31000](#)

URL: <https://www.fairviewmicrowave.com/vco-voltage-controlled-oscillator-30-mhz-fmvc31000-p.aspx>

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NOTES:

1. THE CASE IS GROUND.
2. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES [mm].
3. ENCLOSURE FINISH IS ALODINE 1200 OR EQUIVALENT.
4. UNC 2-56 TYP 2 PLCS. MOUNTING SCREWS NOT EXCEED 0.062" INTRUSION INTO CAVITY (HOUSING WALL THICKNESS 0.125").

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TITLE VCO (Voltage Controlled Oscillator) Frequency of 18 MHz to 30 MHz, Phase Noise -120 dBc/Hz and SMA		DWG NO FMVC31000		CAGE CODE 3FKR5	
CAD FILE	040716	SHEET	SCALE	N/A	SIZE A 2233