

## VCO (Voltage Controlled Oscillator) Frequency of 60 MHz to 120 MHz, Phase Noise -114 dBc/Hz and SMA

FMVC31006 is a High Reliability Low Noise Voltage Controlled Oscillator (VCO) which covers a 60 MHz to 120 MHz frequency band with a voltage tuning range from 0.5V to 18.5V. This design features exceptional phase noise performance of -114 dBc/Hz typ @ 10 kHz offset. Supply Voltage is +15V with a generated output power level of +11 dBm typ and 2nd harmonic output of -10 dBc typical. The assembly is RoHS compliant and available in a compact sized rugged metal housing which 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	60		120	MHz
Tuning Voltage	0.5		18.5	Vdc
Supply Voltage (DC)	14	15	16	Vdc
Supply Current (DC)		18	20	mA
Phase Noise @1kHz Offset		-87	-84	dBc/Hz
Phase Noise @10kHz Offset		-114	-112	dBc/Hz
Phase Noise @100kHz Offset		-134	-132	dBc/Hz
Output Power	+10	+11	+12	dBm
Tuning Sensitivity (Kvco)	2		6	MHz/V
Pushing		0.2	0.4	MHz/V
Pulling (pk-pk)		100	200	KHz
Tuning Port Capacitance		82		pF
Load Impedance		50		Ohms
2nd Harmonics		-10		dBc

Electrical Specification Notes:  
Pulling @ 1.5 VSWR

### Mechanical Specifications

<b>Size</b>	
Length	0.95 in [24.13 mm]
Width	0.95 in [24.13 mm]
Height	0.285 in [7.24 mm]
Weight	0.0395 lbs [17.92 g]
Body Material and Plating	Aluminum
Design	Commercial
Output Connector	SMA Female

### Environmental Specifications

<b>Temperature</b>	
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:

- 60 to 120 MHz Bandwidth
- -114 dBc/Hz typ @ 10kHz offset
- Tuning Voltage 0.5V to 18.5V
- Pout = +11 dBm typ
- Harmonics = -10 dBc typ
- 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

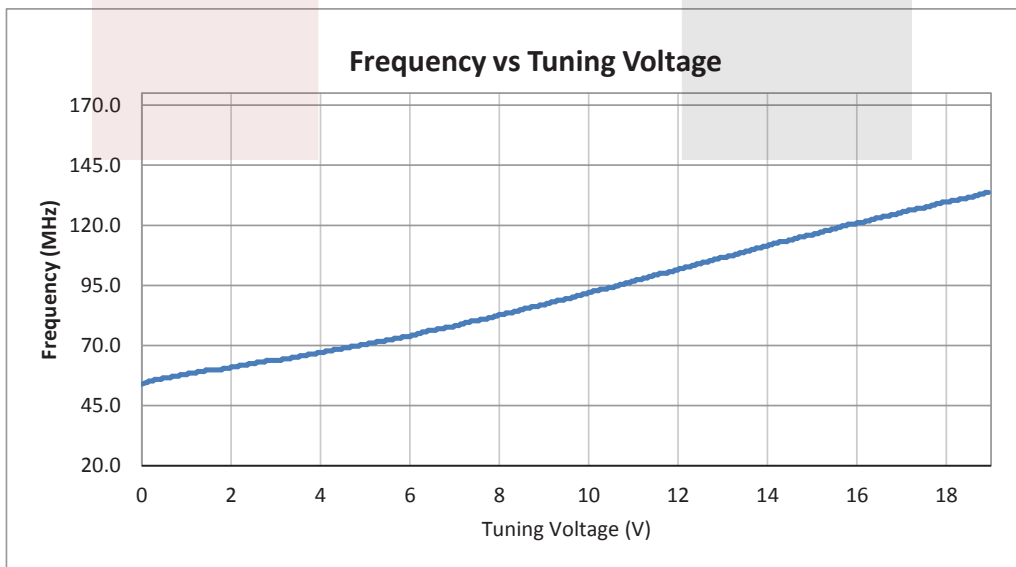
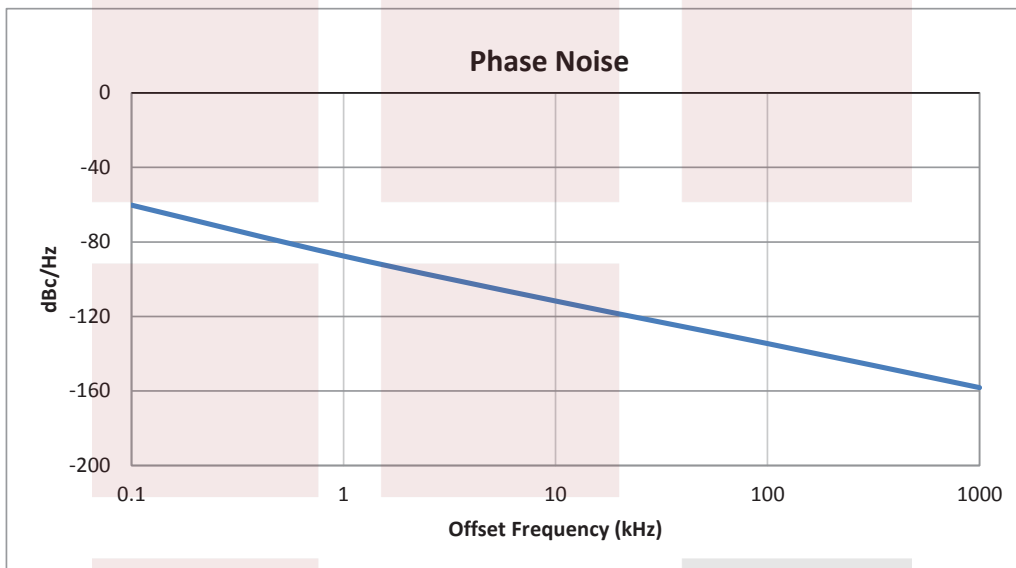
MIL-STD-202, Method 107B  
 ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.

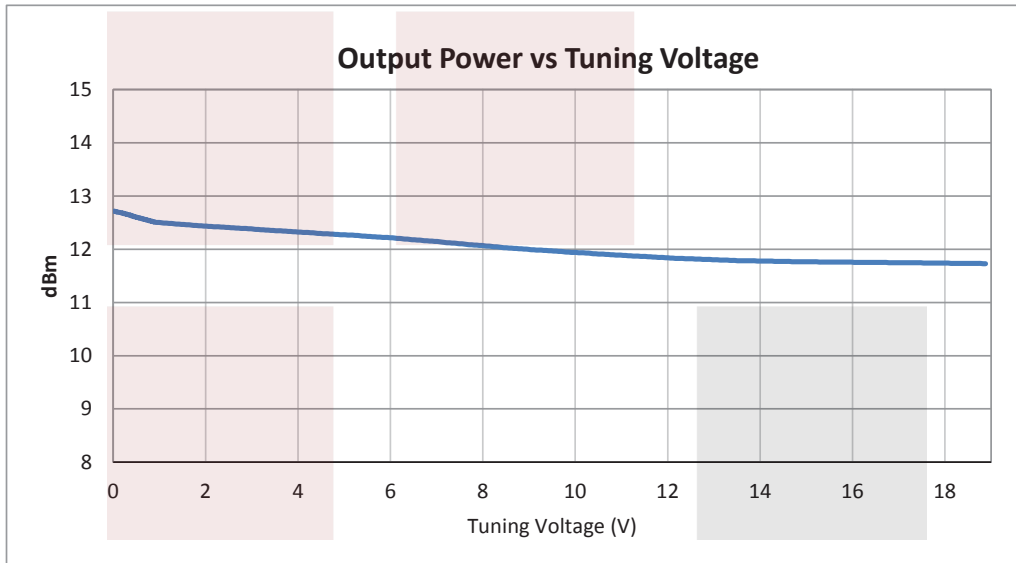
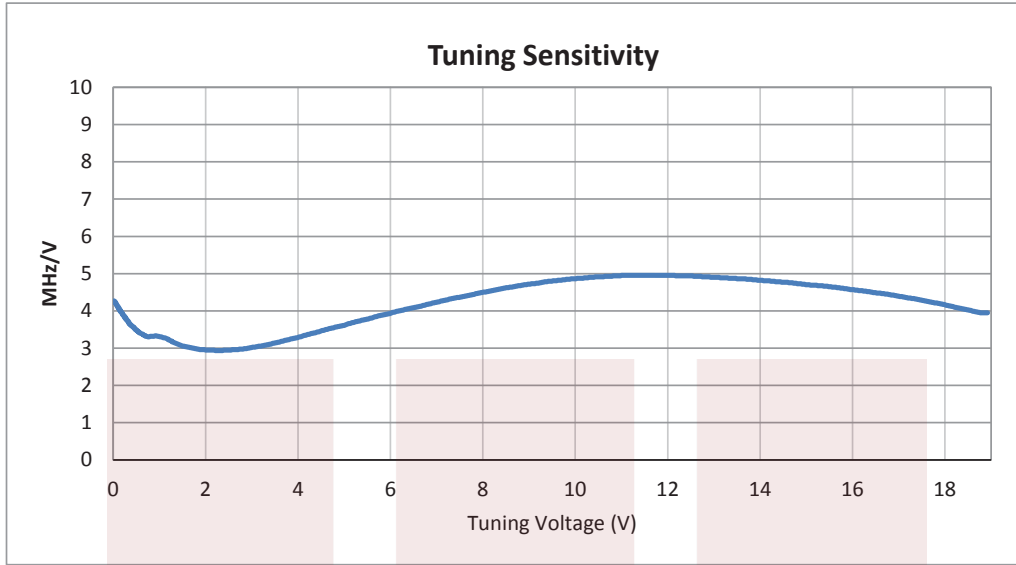


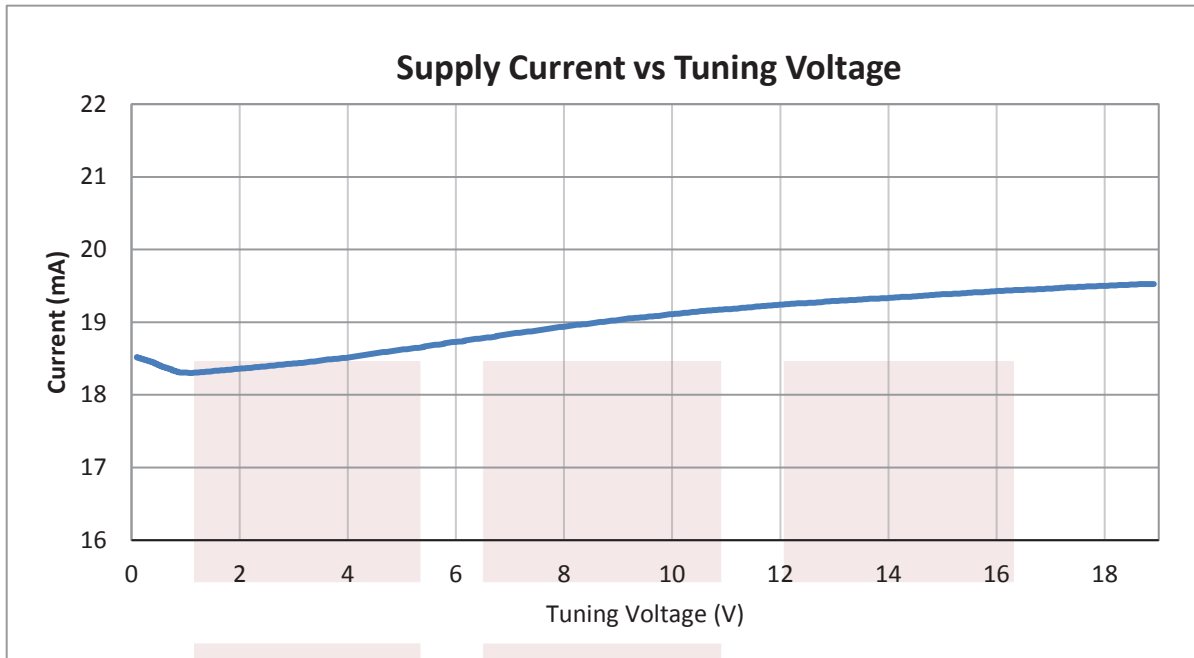
**Compliance Certifications** (see [product page](#) for current document)

**Plotted and Other Data**

Typical Performance Data







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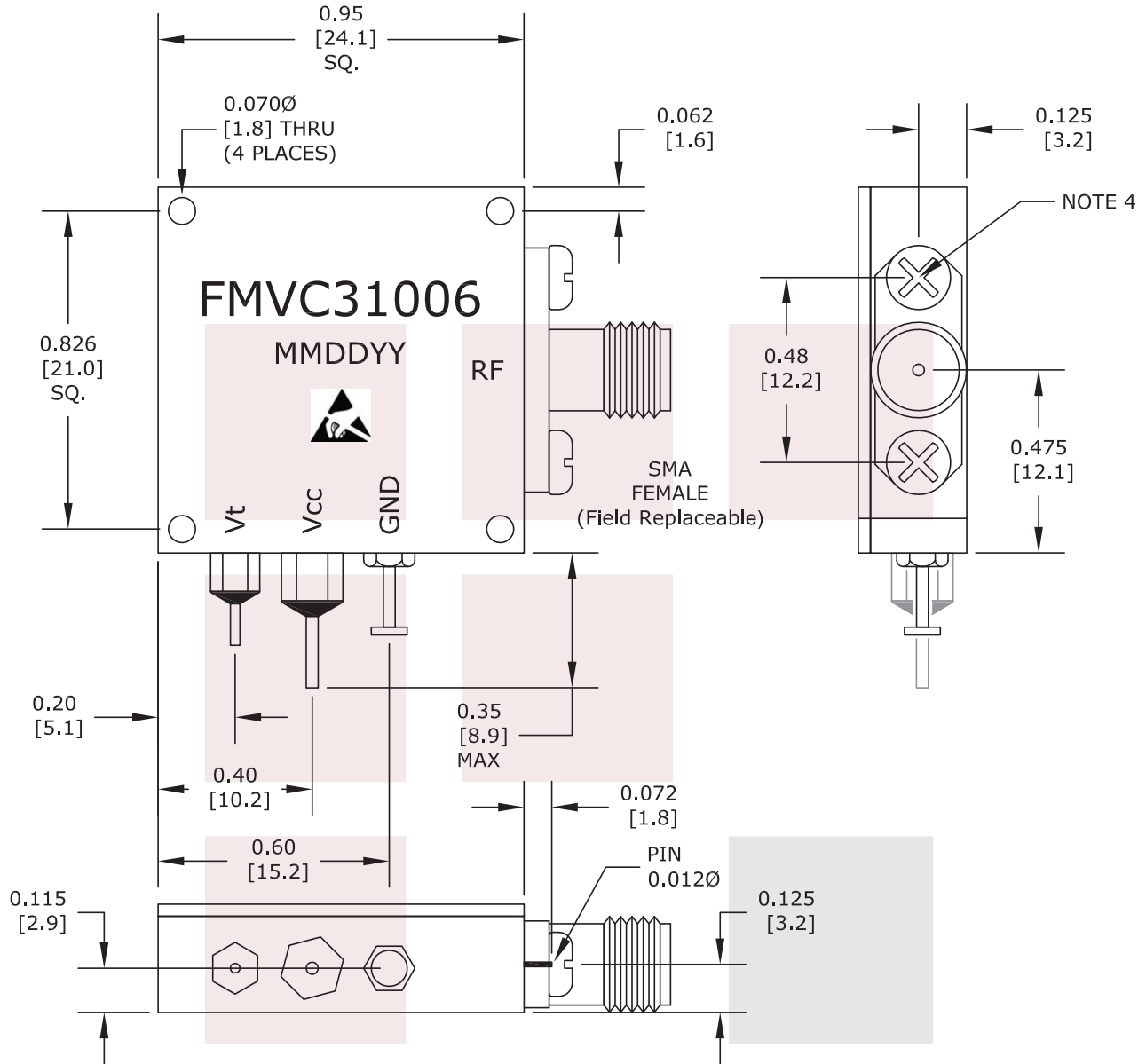
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For additional information on this product, please click the following link: [VCO \(Voltage Controlled Oscillator\) Frequency of 60 MHz to 120 MHz, Phase Noise -114 dBc/Hz and SMA FMVC31006](#)

URL: <https://www.fairviewmicrowave.com/vco-voltage-controlled-oscillator-120-mhz-fmvc31006-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 60 MHz to 120 MHz, Phase Noise -114 dBc/Hz and SMA		DWG NO FMVC31006	CAGE CODE 3FKR5
CAD FILE 040716	SHEET	SCALE N/A	SIZE A 2233