

**VCO (Voltage Controlled Oscillator) Hi-REL Hermetic
Frequency of 8 GHz to 12.5 GHz, Phase Noise
-83 dBc/Hz and SMA**

The FMVC34002 Voltage Controlled Oscillator operates across the frequency range of 8.0 GHz to 12.5 GHz. The design utilizes leading edge GaAs MMIC technology which incorporates the resonator, negative resistance device, and varactor diode. An internal voltage regulator provides excellent frequency pushing of 0.2 MHz/V. The design also incorporates an output buffer amplifier that provides output power up to +21 dBm. Phase noise performance is stable over temperature at -83 dBc/Hz @ 100 KHz offset, with a tuning voltage range of 0 to +13 Volts. Bias is from a single +12V DC supply. The drop-in package is hermetically sealed with field replaceable SMA connectors and has an operating temperature range of -40°C to +85°C. And for added confidence, this rugged package assembly is designed to meet MIL-STD-883 test conditions for Hermeticity and Temperature Cycle.

Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	8		12.5	GHz
Tuning Voltage	0		13	Vdc
Supply Voltage (DC)		12		Vdc
Supply Current (DC)		195		mA
Tune Port Leakage Current			0.01	mA
Phase Noise @10kHz Offset		-59		dBc/Hz
Phase Noise @100kHz Offset		-83		dBc/Hz
Output Return Loss		15		dB
Output Power	+18	+21		dBm
Pushing		0.2		MHz/V
Frequency Drift Rate		0.8		MHz/°C
2nd Harmonics		-20		dBc

Electrical Specification Notes:
Tune Port Leakage Current (Vtune=+15VDC)
Pulling (Into a 2.0:1 VSWR)
Pushing @ Vtune = +5VDC

Mechanical Specifications

Size	
Length	0.64 in [16.26 mm]
Width	0.7 in [17.78 mm]
Height	0.29 in [7.37 mm]

Configuration

Design	Hi-REL Hermetic
Connector Option	Field Replaceable
Control Connector	SMA Female
Output Connector	SMA Female

Environmental Specifications

Temperature	
Operating Range	-40 to +85 deg C
Storage Range	-65 to +150 deg C
Temperature Cycle	MIL-STD-883, Method 101C, Cond B



Features:

- VCO Module with Integrated Buffer Amplifier
- GaAs MMIC Technology
- Wide Tuning Bandwidth
- Vtune Range 0V to +13V
- High Output Power +21 dBm
- SSB Phase Noise -83 dBc/Hz @100Hz offset
- Single Positive Supply +8V to +15V
- Regulated Voltage Supply
- Hermetically Sealed Module
- Mil Spec Compliant
- Field Replaceable SMA Connectors
- -40°C to +85°C Operating Temperature

Applications:

- Electronic Warfare
- Electronic Countermeasures
- Microwave Radio
- Radar
- Industrial
- Medical Equipment
- Test Instrumentation
- Lab Instrumentation

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Hermetic Seal

ESD Sensitivity

Gross Leak MIL-STD-883 Method 1014C1/Fine Leak MIL-STD-883, Method 1014A2, 5 x 10⁻⁸ atm cc

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

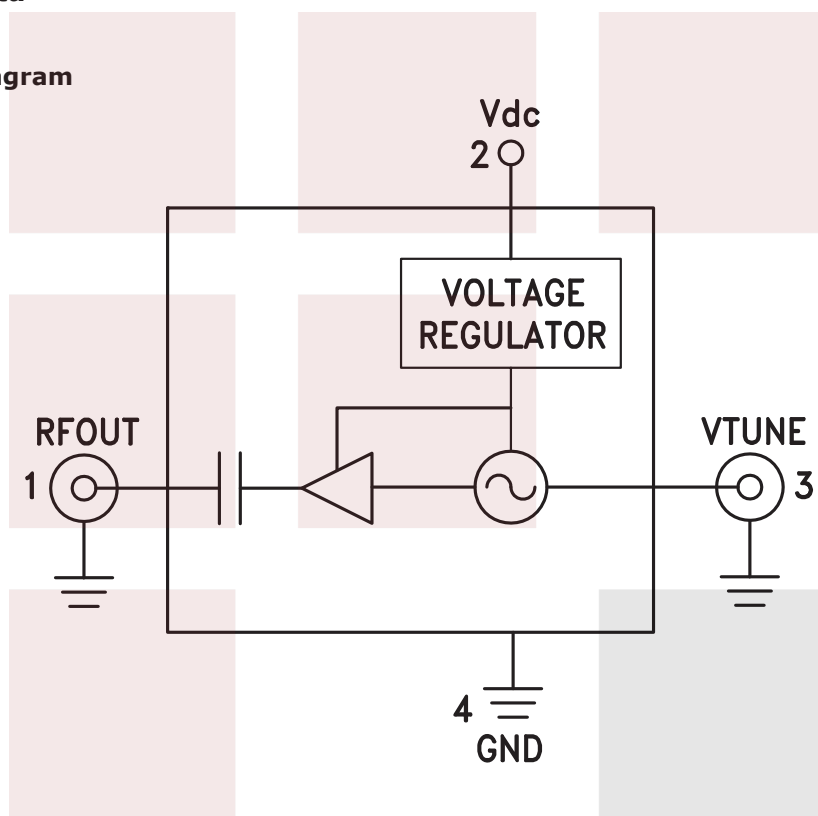


Compliance Certifications (see [product page](#) for current document)

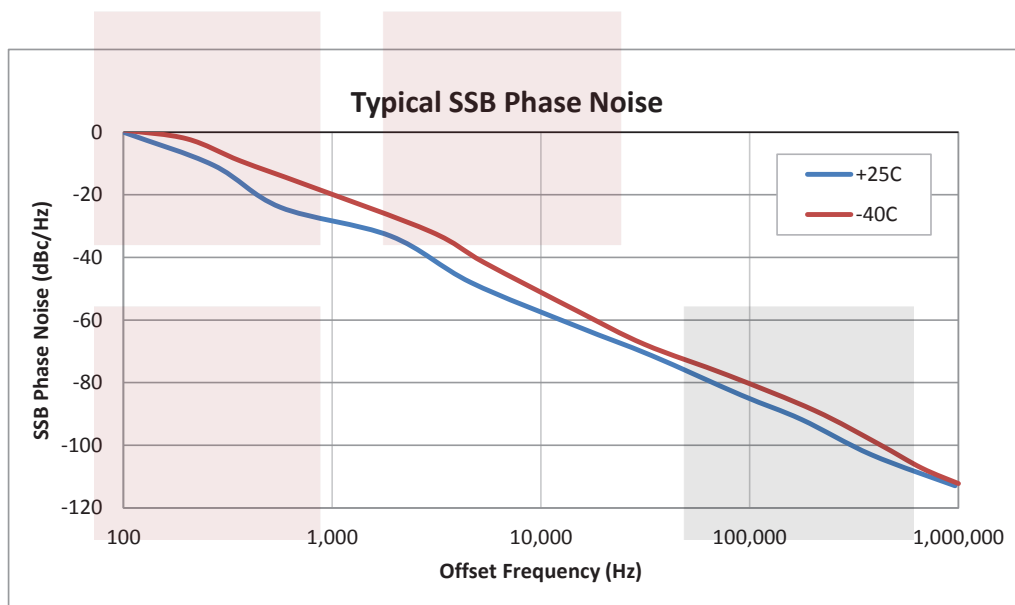
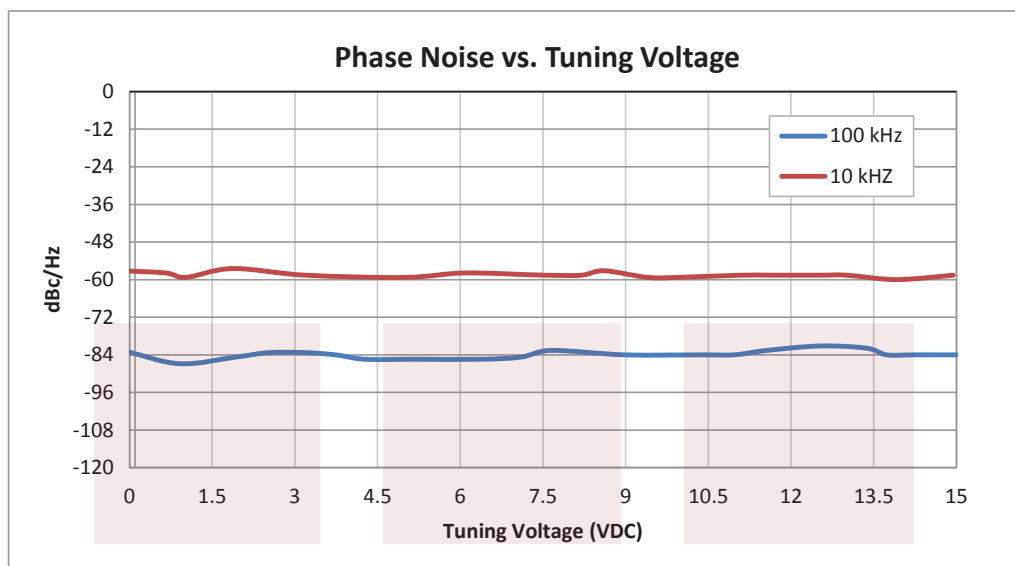
Plotted and Other Data

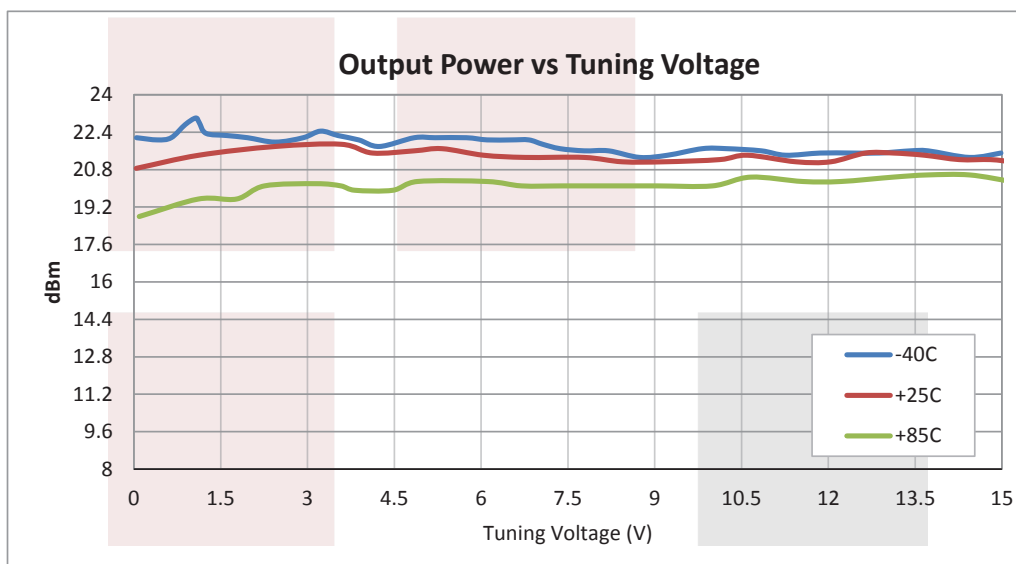
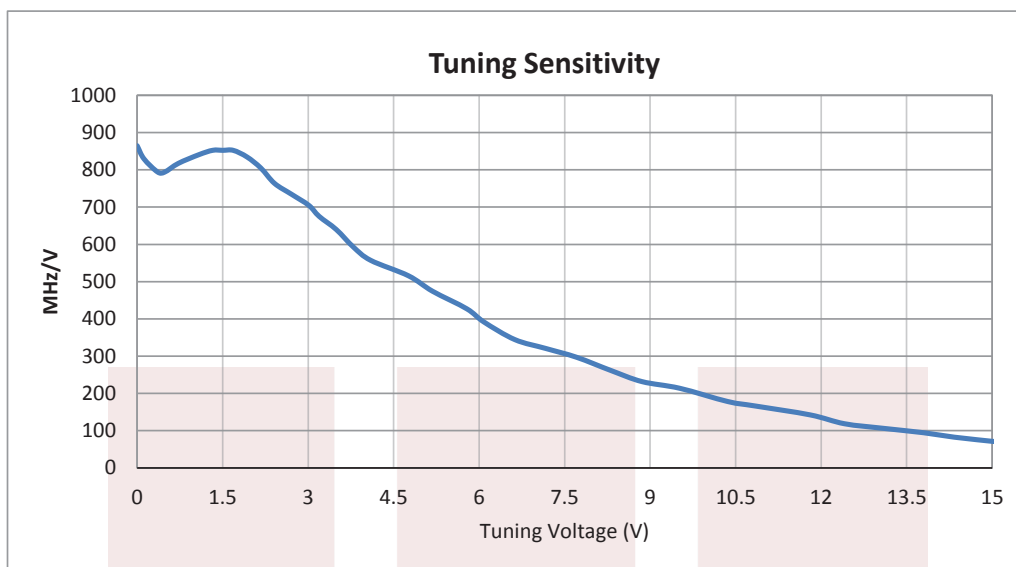
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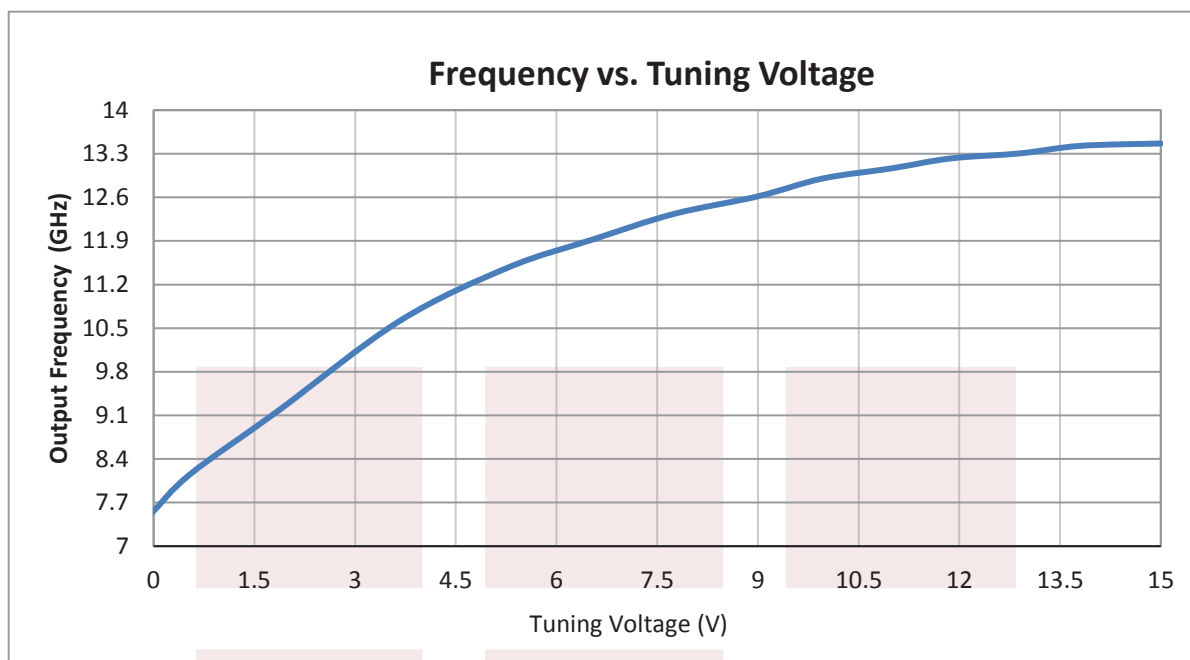
Functional Block Diagram



Typical Performance Data





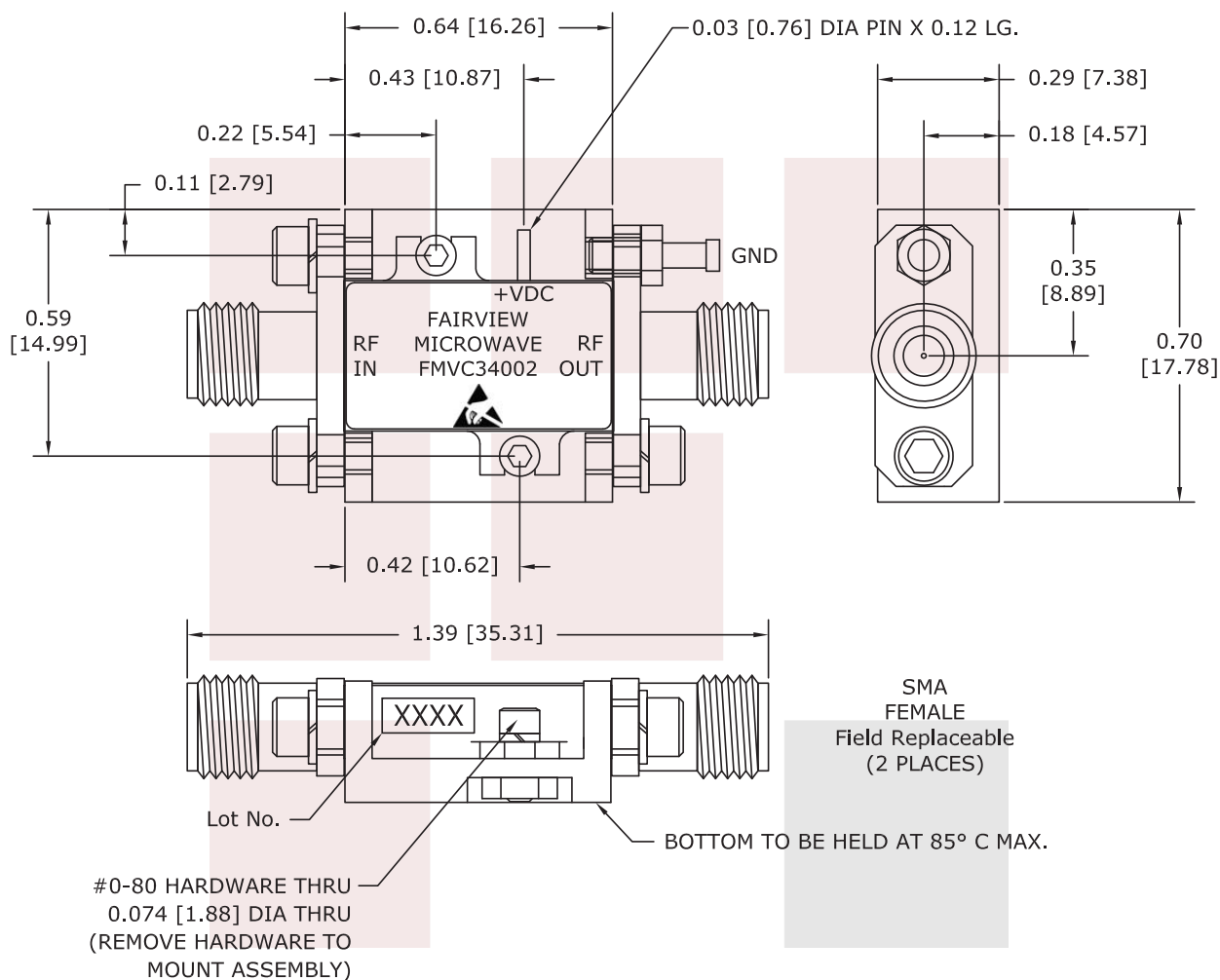


VCO (Voltage Controlled Oscillator) Hi-REL Hermetic Frequency of 8 GHz to 12.5 GHz, Phase Noise -83 dBc/Hz and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [VCO \(Voltage Controlled Oscillator\) Hi-REL Hermetic Frequency of 8 GHz to 12.5 GHz, Phase Noise -83 dBc/Hz and SMA FMVC34002](https://www.fairviewmicrowave.com/vco-voltage-controlled-oscillator-connectorized-module-error-fmvc34002-p.aspx)

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NOTE:
HEAT SINK REQUIRED FOR PROPER OPERATION,
UNIT IS COOLED BY CONDUCTING TO HEAT SINK.

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TITLE VCO (Voltage Controlled Oscillator) Hi-REL Hermetic Frequency of 8 GHz to 12.5 GHz, Phase Noise -83 dBc/Hz and SMA		DWG NO FMVC34002		CAGE CODE 3FKR5	
CAD FILE	040616	SHEET	SCALE	N/A	SIZE A 2233