

VCO (Voltage Controlled Oscillator) Frequency of 40 MHz to 100 MHz, Phase Noise -118 dBc/Hz and SMA

FMVC31004 is a High Reliability Low Noise Voltage Controlled Oscillator (VCO) which covers a 40 MHz to 100 MHz frequency band with a voltage tuning range from 0.5V to 20V. This design features exceptional phase noise performance of -118 dBc/Hz typ @ 10 kHz offset. Supply Voltage is +15V with a generated output power level of +11.5 dBm typ and 2nd harmonic output of -14.0 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 | 40 | | 100 | MHz |
| Tuning Voltage | 0.5 | | 20 | Vdc |
| Supply Voltage (DC) | 14 | 15 | 16 | Vdc |
| Supply Current (DC) | | 18 | 20 | mA |
| Phase Noise @1kHz Offset | | -90 | -88 | dBc/Hz |
| Phase Noise @10kHz Offset | | -118 | -116 | dBc/Hz |
| Phase Noise @100kHz Offset | | -138 | -136 | dBc/Hz |
| Output Power | +10 | +11.5 | +12.5 | dBm |
| Tuning Sensitivity (Kvco) | 2 | | 5 | MHz/V |
| Pushing | | 0.2 | 0.4 | MHz/V |
| Pulling (pk-pk) | | 100 | 300 | KHz |
| Tuning Port Capacitance | | 180 | | pF |
| Load Impedance | | 50 | | Ohms |
| 2nd Harmonics | | -14 | -10 | dBc |

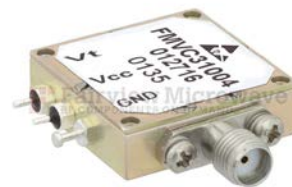
Electrical Specification Notes:
Pulling @ 1.5 VSWR

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 | 0.036 lbs [16.33 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:

- 40 to 100 MHz Bandwidth
- -118 dBc/Hz typ @ 10kHz offset
- Tuning Voltage 0.5V to 20V
- Pout = +11.5 dBm typ
- Harmonics = -14.0 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.

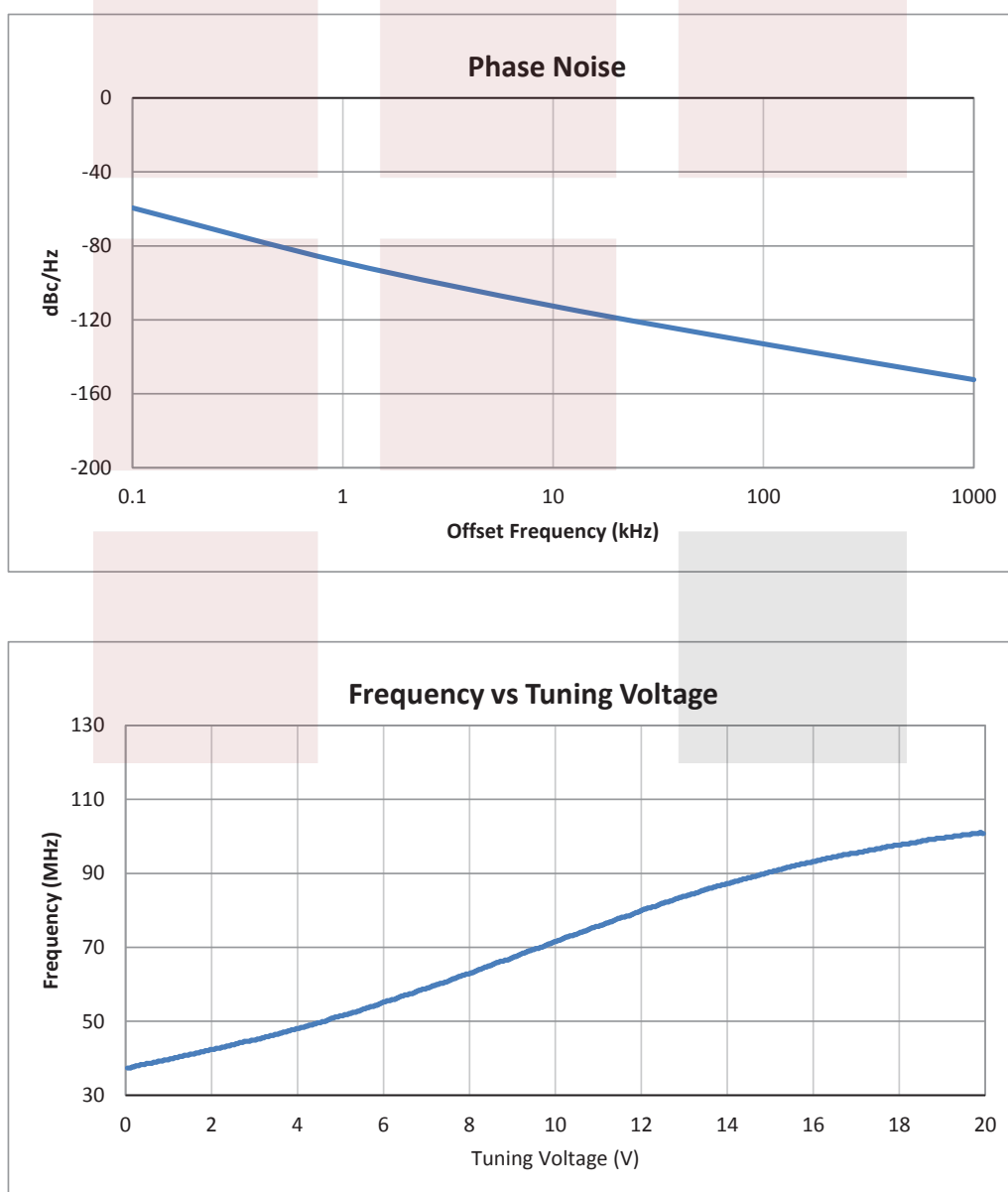


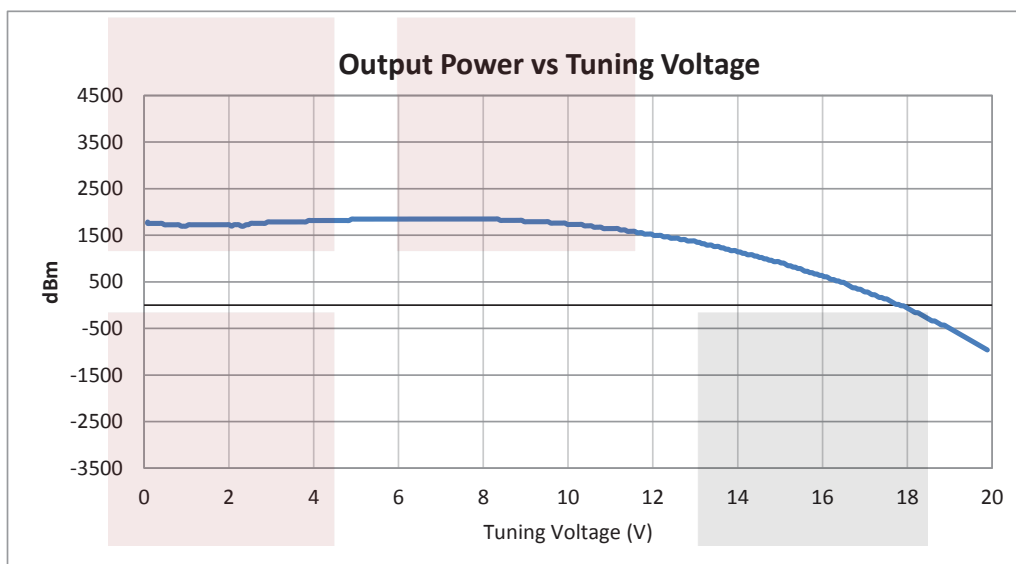
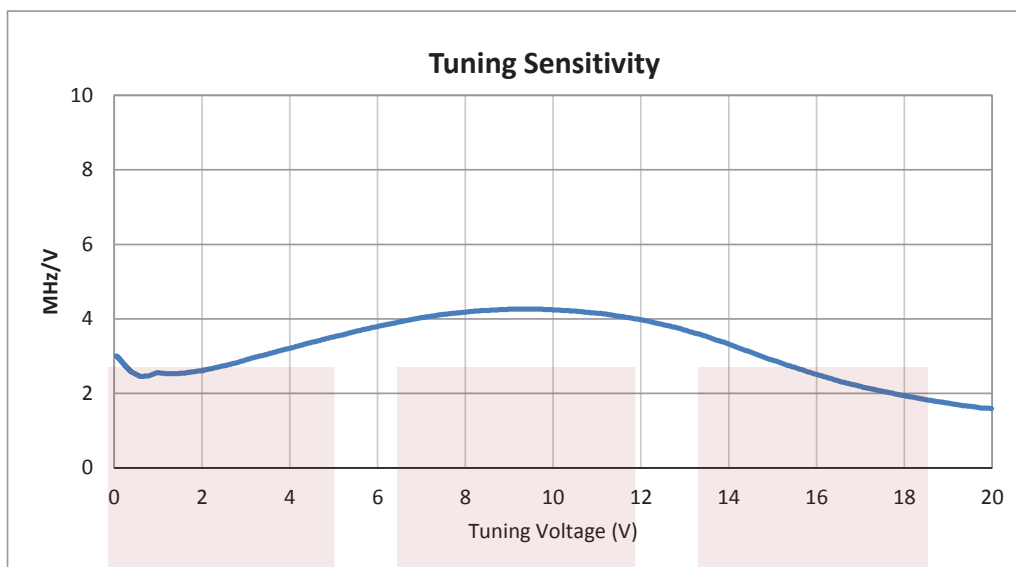
Compliance Certifications (see [product page](#) for current document)

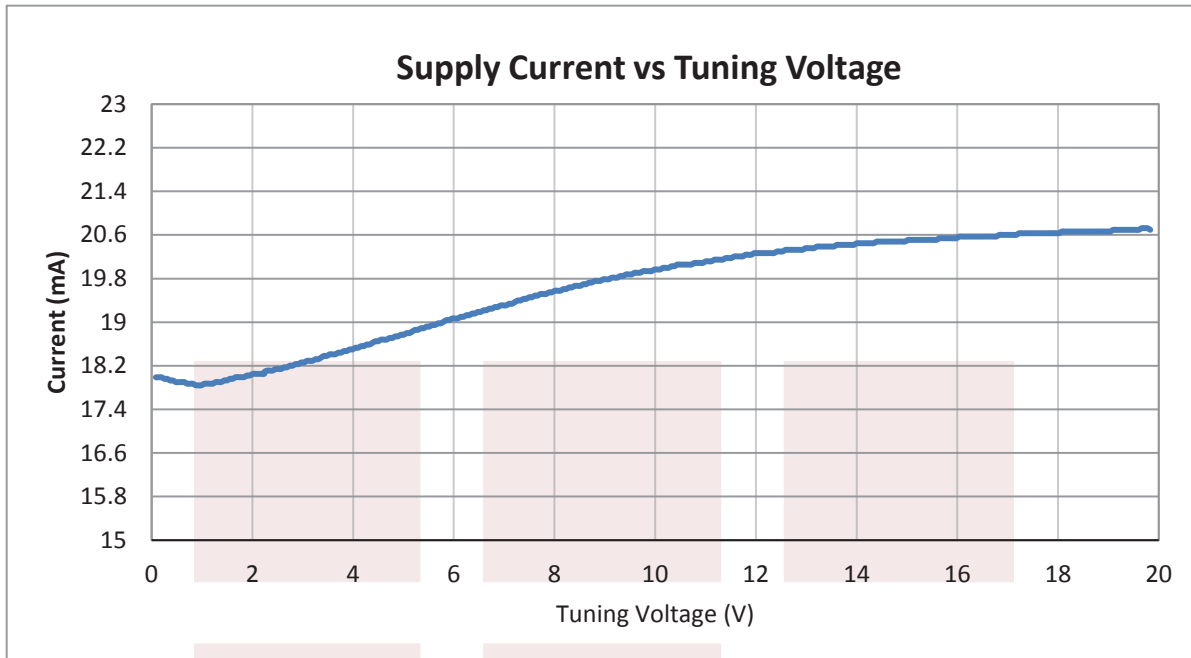
Plotted and Other Data

Notes:

Typical Performance Data





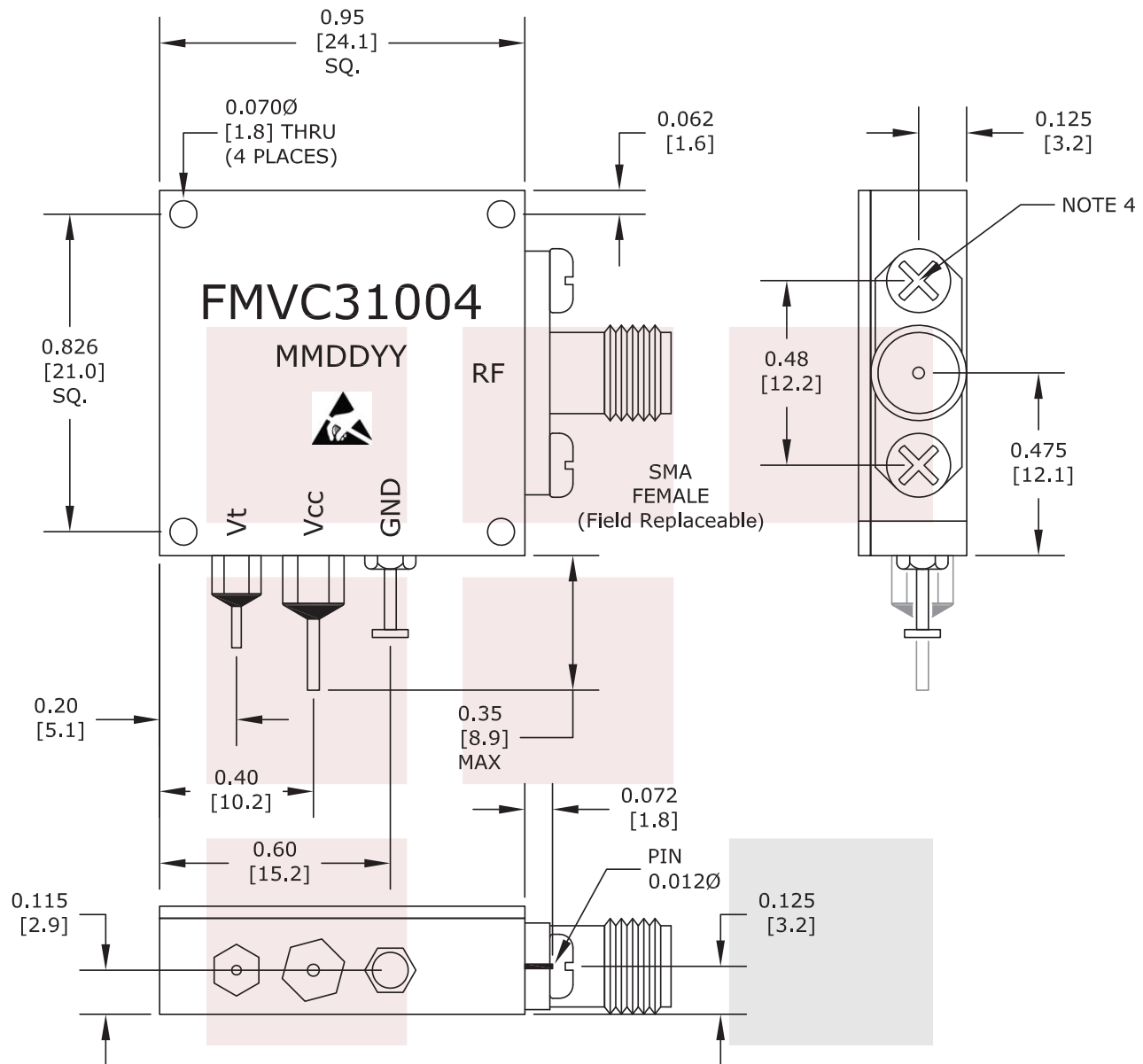


VCO (Voltage Controlled Oscillator) Frequency of 40 MHz to 100 MHz, Phase Noise -118 dBc/Hz and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [VCO \(Voltage Controlled Oscillator\) Frequency of 40 MHz to 100 MHz, Phase Noise -118 dBc/Hz and SMA FMVC31004](https://www.fairviewmicrowave.com/vco-voltage-controlled-oscillator-100-mhz-fmvc31004-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").

| | | | | | |
|--|--------|---|-------|--------------------|-------------|
| FAIRVIEW MICROWAVE INC. ALLEN, TX 75013 WWW.FAIRVIEWMICROWAVE.COM | | NOTES: 1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL. 2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME. 3. DIMENSIONS ARE IN INCHES [mm]. | | | |
| TITLE VCO (Voltage Controlled Oscillator) Frequency of 40 MHz to 100 MHz, Phase Noise -118 dBc/Hz and SMA | | DWG NO FMVC31004 | | CAGE CODE 3FKR5 | |
| CAD FILE | 040716 | SHEET | SCALE | N/A | SIZE A 2233 |