

**VCO (Voltage Controlled Oscillator) 0.5 inch
Hermetic SMT (Surface Mount), Frequency of 1.2 GHz
to 1.8 GHz, Phase Noise -89 dBc/Hz**

FMVC13013 is a High Reliability Low Noise Voltage Controlled Oscillator (VCO) which covers a 1.2 GHz to 1.8 GHz frequency band with a voltage tuning range from 0V to 20V. This design features exceptional phase noise performance of -89 dBc/Hz @ 10 kHz offset. Supply Voltage is +15V DC with a generated output power level of +11 dBm and 2nd harmonic output of -12 dBc typical. The assembly is RoHs compliant and available in a hermetically sealed 0.5" surface mount package with exposed leads that meets MIL-STD-883, Method 1014 fine & Gross leak conditions. This rugged package operates over a temperature range of -40°C to +85°C and is designed to also meet a variety of MIL-STD-202 test conditions including Humidity, Shock, and Vibration.

Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	1.2		1.8	GHz
Tuning Voltage	0		20	Vdc
Supply Voltage (DC)	14	15	16	Vdc
Supply Current (DC)		20	23	mA
Phase Noise @10kHz Offset		-89	-87	dBc/Hz
Phase Noise @100kHz Offset		-110	-108	dBc/Hz
Output Power	+9.5	+11	+13.5	dBm
Tuning Sensitivity (Kvco)	12		85	MHz/V
Pushing		0.5	1	MHz/V
Pulling (pk-pk)		3	5	MHz
Tuning Port Capacitance		22		pF
Load Impedance		50		Ohms
2nd Harmonics		-12	-10	dBc

Mechanical Specifications

Size	
Length	0.5 in [12.7 mm]
Width	0.5 in [12.7 mm]
Height	0.215 in [5.46 mm]
Weight	0.0208 lbs [9.43 g]
Body Material and Plating	Copper Clad, Nickel, Gold
Design	Hermetic

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
Hermetic Seal	Fine Leak MIL-STD-883 Method 1014C/Gross Leak MIL-STD-883, Method 1014A, 1 x 10 ⁻⁸ atm cc/s



Features:

- 1.2 GHz to 1.8 GHz Bandwidth
- -89 dBc/Hz @ 10kHz offset
- Tuning Voltage 0V to 20V
- Pout = +11 dBm
- Harmonics = -12 dBc
- RoHs Compliant Assembly
- Hermetically Sealed Rugged SMT Package
- Designed to meet Fine & Gross leak per MIL-STD-883 Method 1014
- 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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ESD Sensitivity

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



Compliance Certifications (visit www.FairviewMicrowave.com for current document)

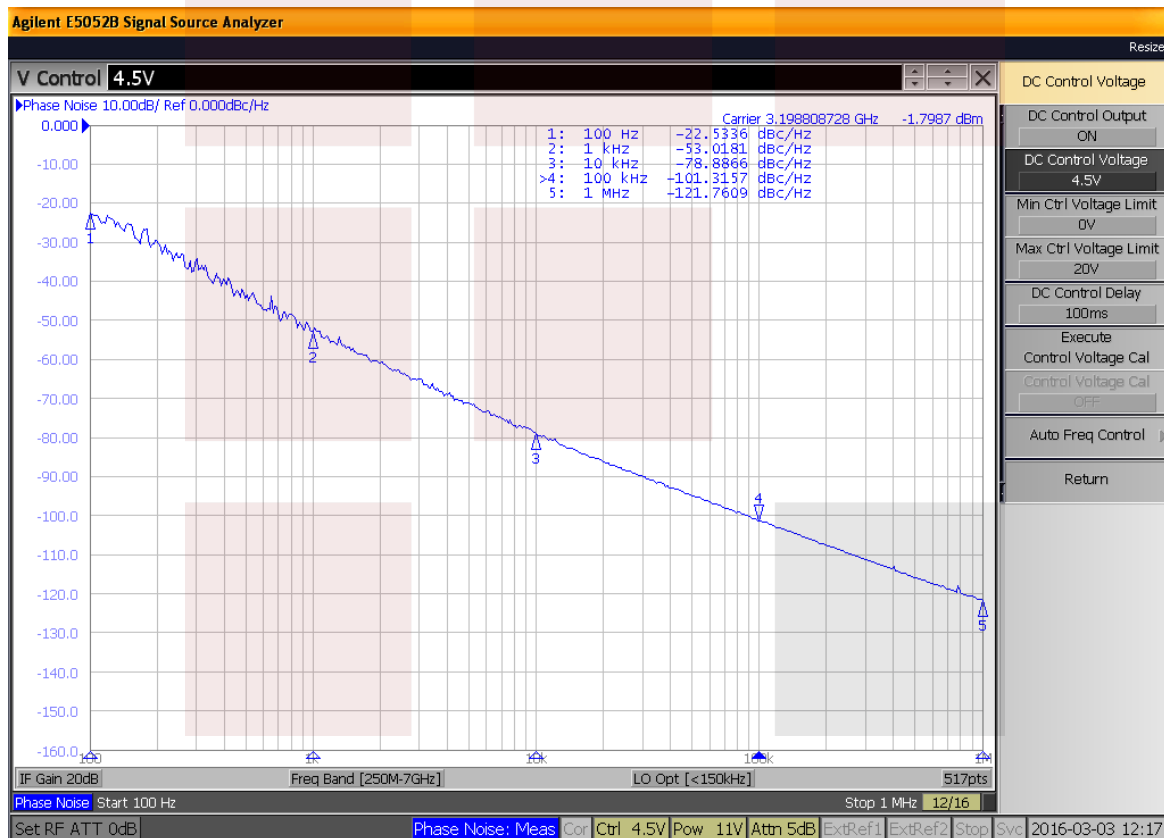
RoHS Compliant
REACH Compliant

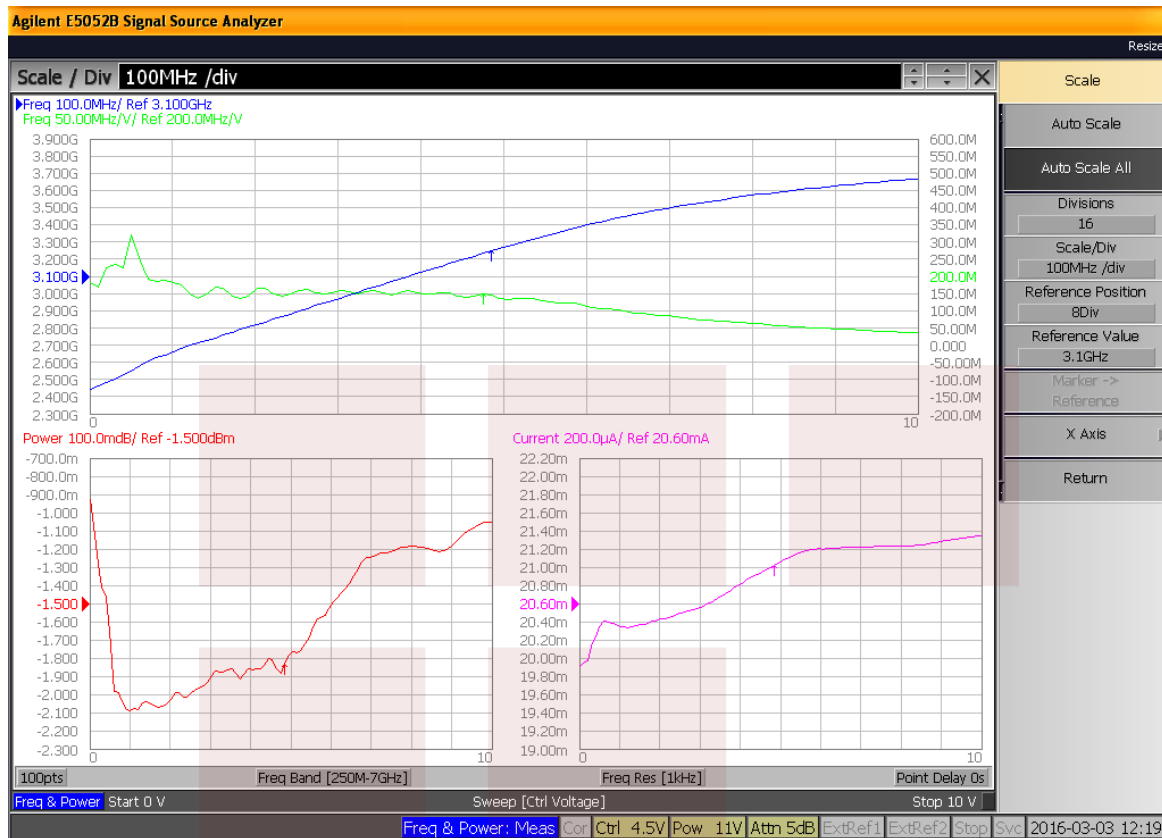
Yes
12/17/2015

Plotted and Other Data

Notes:

Typical Performance Data



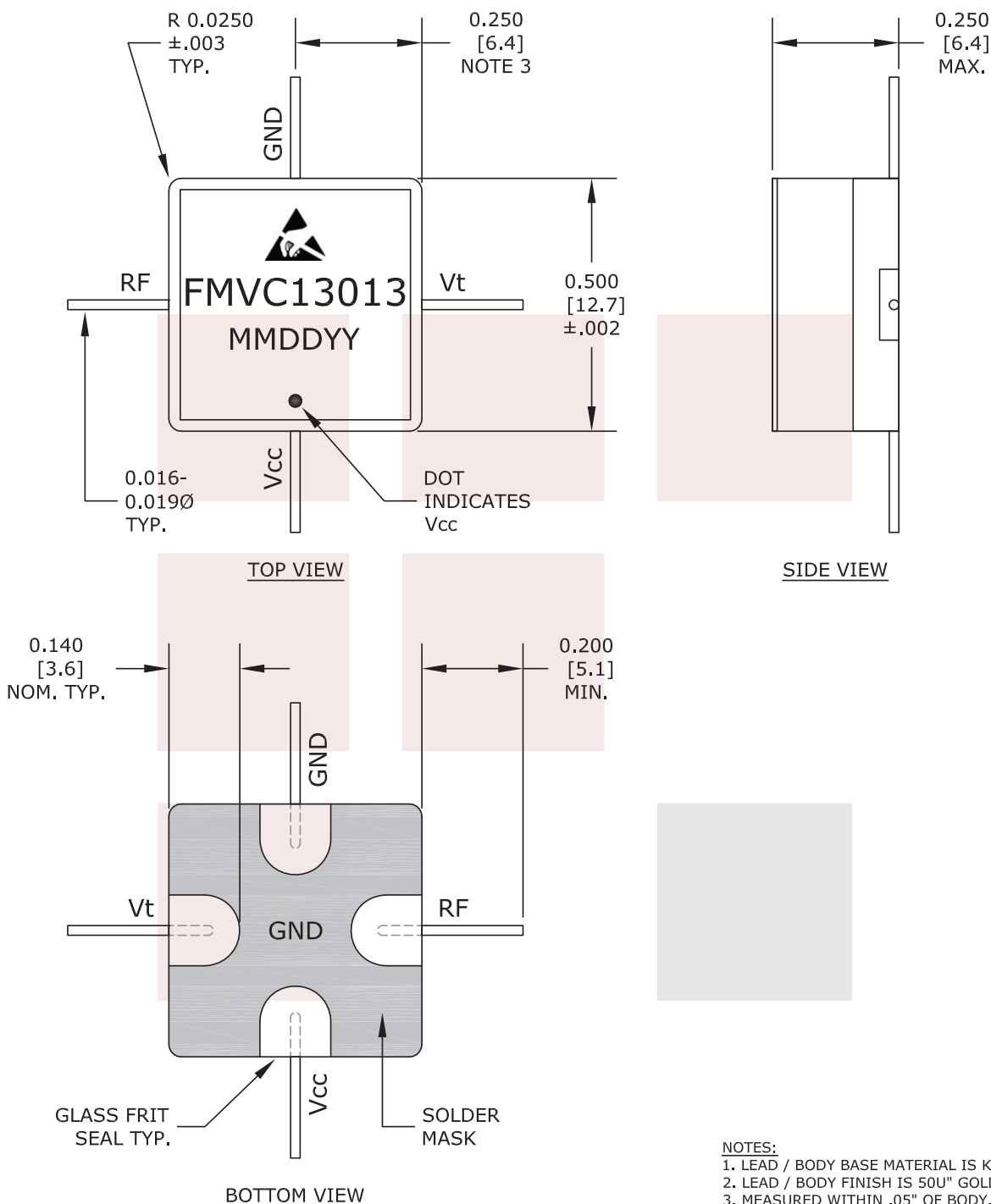


VCO (Voltage Controlled Oscillator) 0.5 inch Hermetic SMT (Surface Mount), Frequency of 1.2 GHz to 1.8 GHz, Phase Noise -89 dBc/Hz from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [VCO \(Voltage Controlled Oscillator\) 0.5 inch Hermetic SMT \(Surface Mount\), Frequency of 1.2 GHz to 1.8 GHz, Phase Noise -89 dBc/Hz FMVC13013](http://www.fairviewmicrowave.com/vco-voltage-controlled-oscillator-smt-surface-mount-1.8-ghz-fmvc13013-p.aspx)

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The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.



NOTES:

1. LEAD / BODY BASE MATERIAL IS KOVAR.
2. LEAD / BODY FINISH IS 50U" GOLD / NI.
3. MEASURED WITHIN .05" OF BODY.

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) 0.5 inch Hermetic SMT (Surface Mount), Frequency of 1.2 GHz to 1.8 GHz, Phase Noise -89 dBc/Hz					DWG NO FMVC13013		CAGE CODE 3FKR5		
CAD FILE	020816	SHEET		SCALE	N/A	SIZE	A	2233	

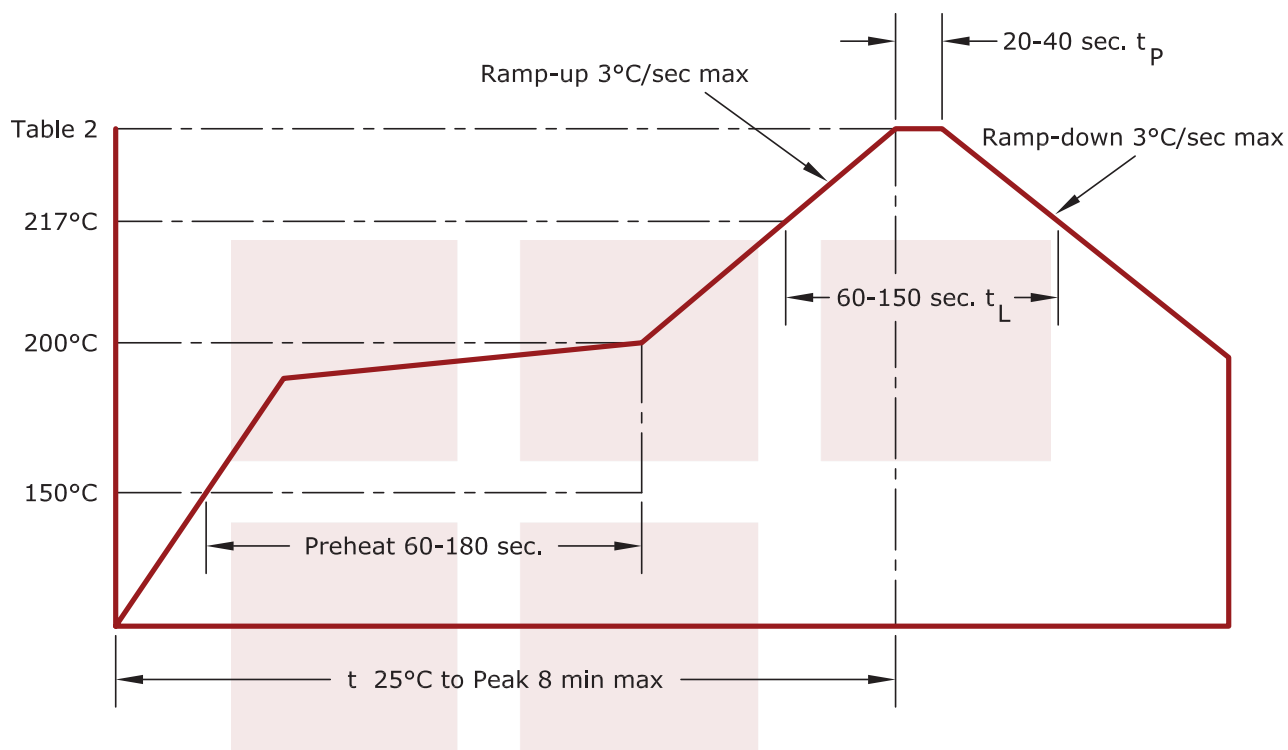


Table 1 Hand Soldering	
Item	Condition
Tip Temp. (max.)	260°
Iron Power (max.)	20 W
Time (max.)	3 Sec.
Note.	Avoid excess pressure to castelations

Table 2 Package re-flow temp	
Pkg.	t_p (°C)
FMVC Series	260
FMVC11 Series	245
All Others	245

NOTES:

1. ALL VCO'S HAVE A MS RATING OF 1
2. ALL PRODUCTS CONFORM TO JEDEC J-STD-020C FOR LEAD FREE PROCESSING.

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CAD FILE	020816	SHEET	SCALE	N/A	SIZE A 2233