Fairview Microwave
RF COMPONENTS ON DEMAND. Done!

FMVC13002
DATA SHEET

VCO (Voltage Controlled Oscillator) 0.5 inch Hermetic SMT (Surface Mount), Frequency of 25 MHz to 50 MHz, Phase Noise -114 dBc/Hz

The FMVC13002 is a High Reliability Low Noise Voltage Controlled Oscillator (VCO) which covers a 25 MHz to 50 MHz frequency band with a voltage tuning range from 0.5V to 20V. This design features exceptional phase noise performance of -114 dBc/Hz @ 10 kHz offset. Supply Voltage is +15V with a generated output power level of +11.5 dBm and 2nd harmonic output of -10 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.

Features:

- 25 to 50 MHz Bandwidth
- -114 dBc/Hz @ 10kHz offset
- Tuning Voltage 0.5V to 20V
- Pout = +11.5 dBm
- Harmonics = -10 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

Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	25		50	MHz
Tuning Voltage	0.5		20	Vdc
Supply Voltage (DC)	14	15	16	Vdc
Supply Current (DC)		16	18	mA
Phase Noise @1kHz Offset		-93	-91	dBc/Hz
Phase Noise @10kHz Offset		-114		dBc/Hz
Phase Noise @100kHz Offset		-134		dBc/Hz
Output Power	+9	+11.5	+12.5	dBm
Tuning Sensitivity (Kvco)	1.5		2.5	MHz/V
Pushing		0.1		MHz/V
Pulling (pk-pk)		100		KHz
Tuning Port Capacitance		100		pF
Load Impedance		50		Ohms
2nd Harmonics		-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	0.0276 lbs [12.52 g]
Body Material and Plating	Copper Clad, Nickel, Gold
Design	Hermetic
Package Style	Surface Mount

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

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

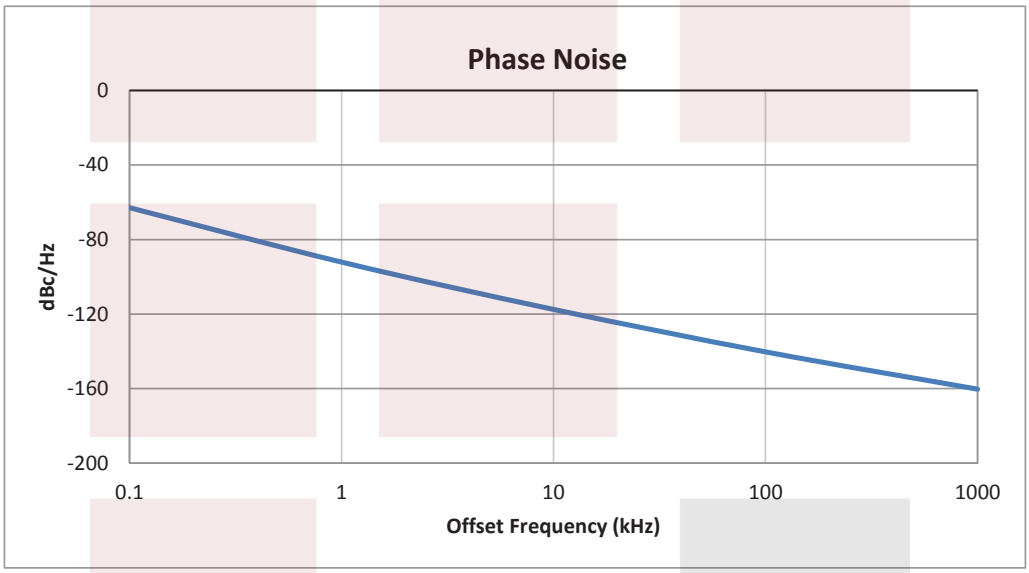
Compliance Certifications (visit www.FairviewMicrowave.com for current document)

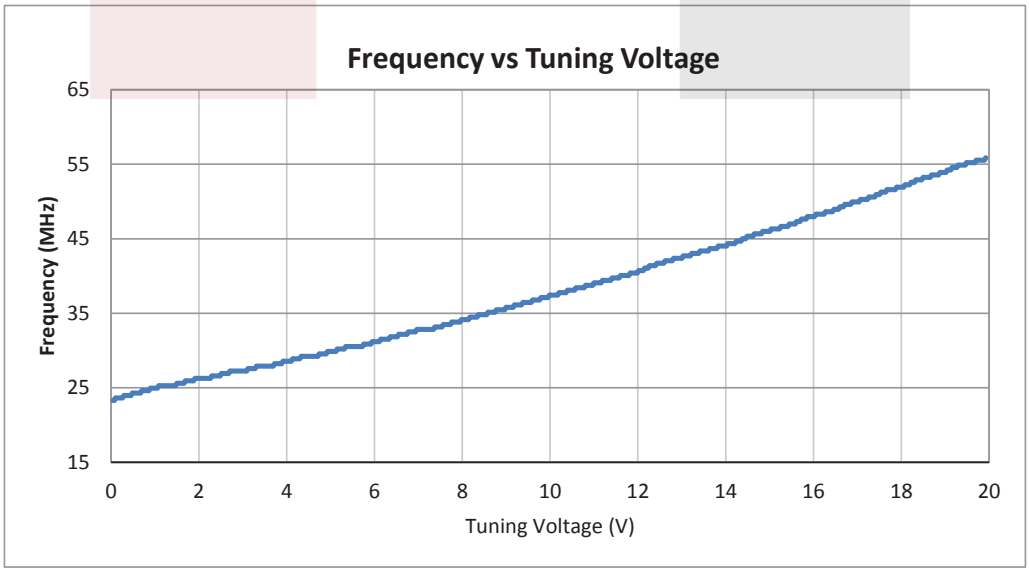
RoHS Compliant	Yes
REACH Compliant	12/17/2015

Plotted and Other Data

Notes:

Typical Performance Data





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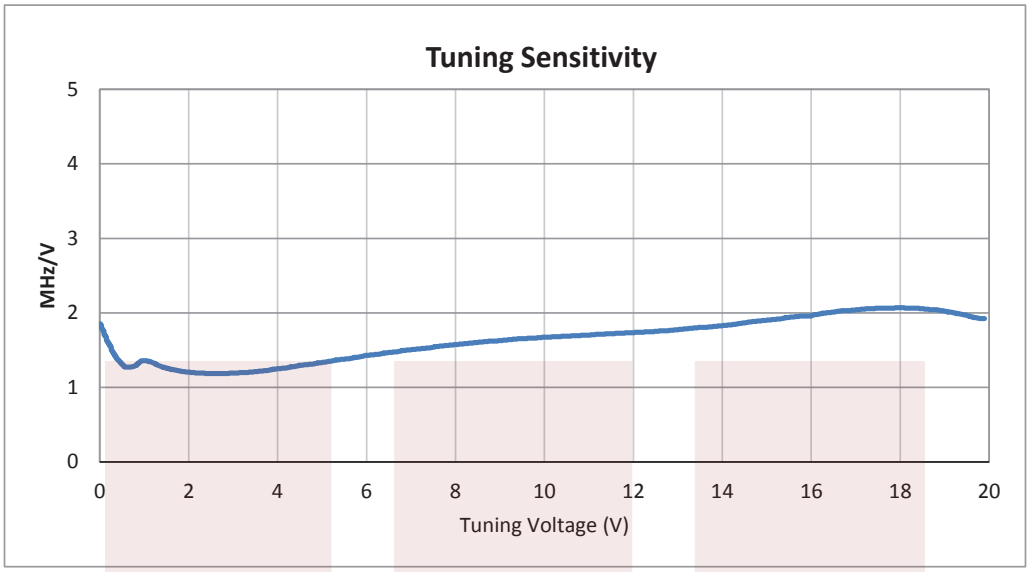

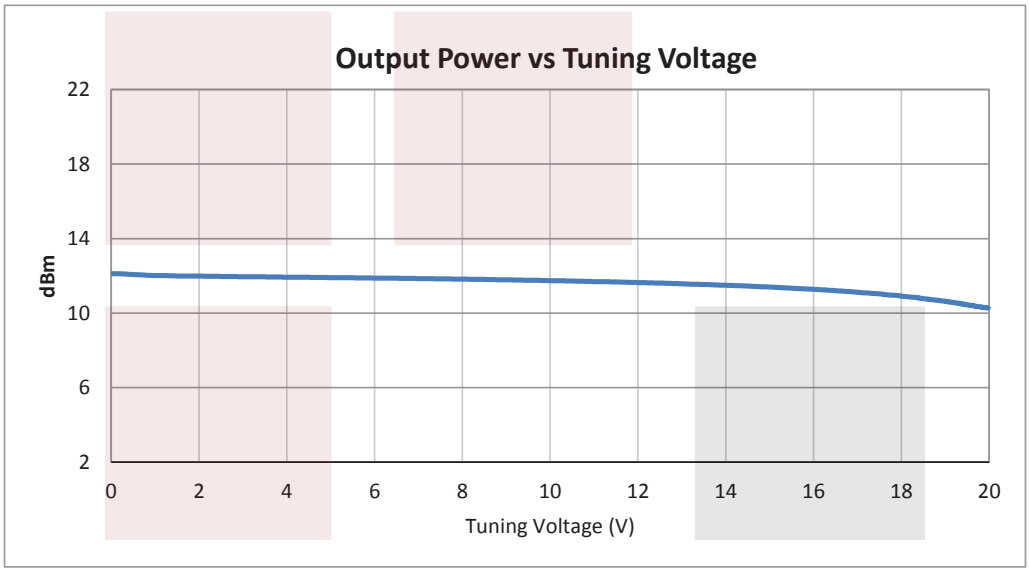

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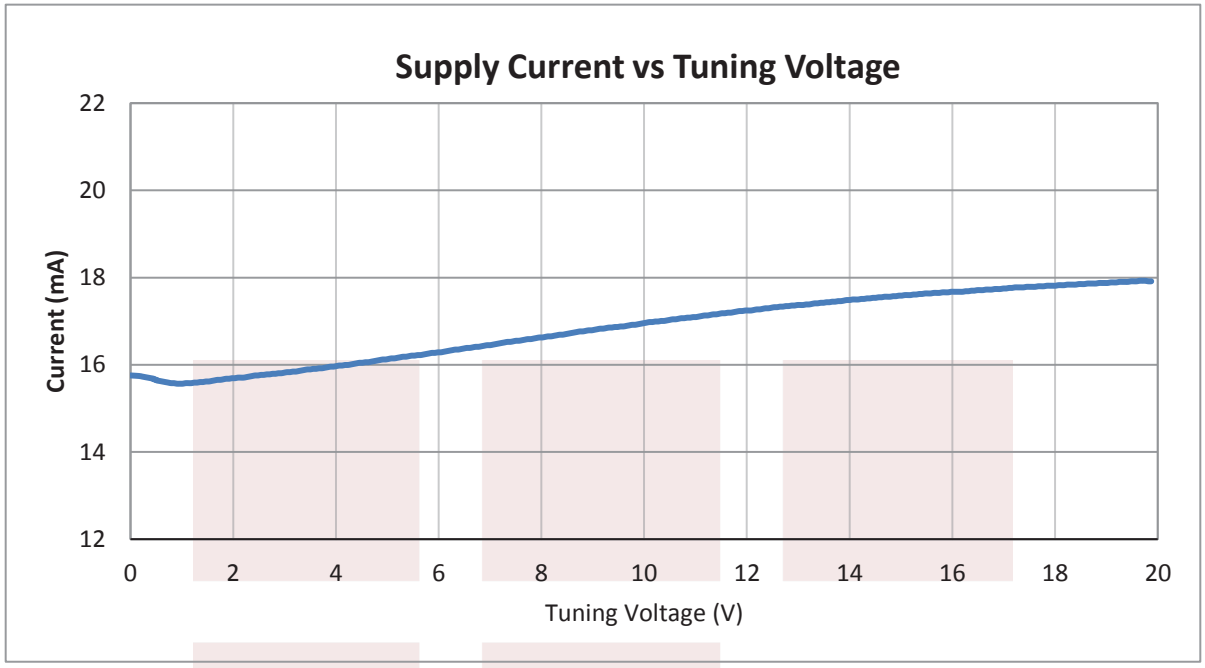
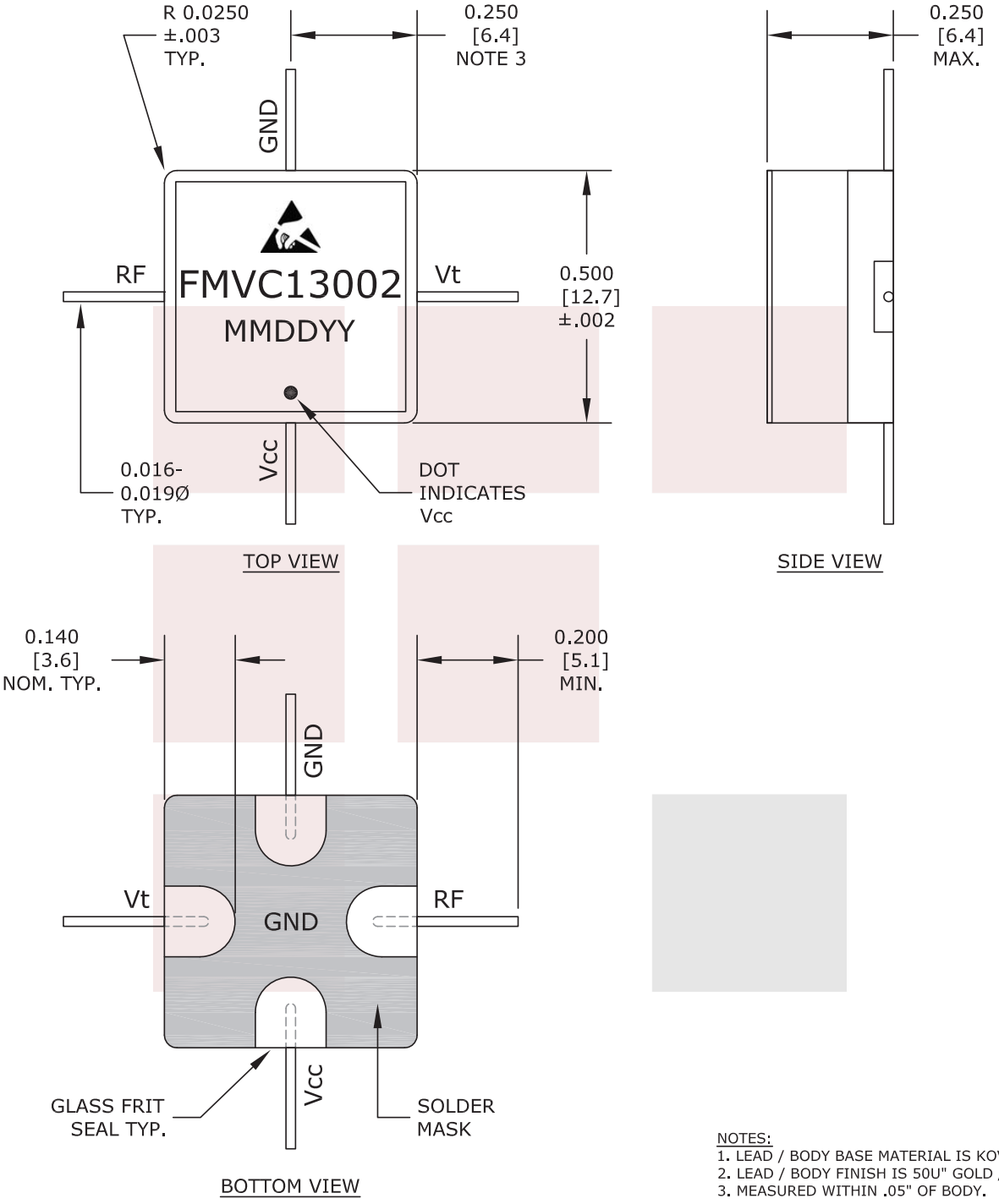


VCO (Voltage Controlled Oscillator) 0.5 inch Hermetic SMT (Surface Mount), Frequency of 25 MHz to 50 MHz, Phase Noise -114 dBc/Hz from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities 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 25 MHz to 50 MHz, Phase Noise -114 dBc/Hz FMVC13002

URL: http://www.fairviewmicrowave.com/vco-voltage-controlled-oscillator-smt-surface-mount-50-mhz-fmvc13002-p.aspx

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 25 MHz to 50 MHz, Phase Noise -114 dBc/Hz	DWG NO FMVC13002		CAGE CODE 3FKR5		
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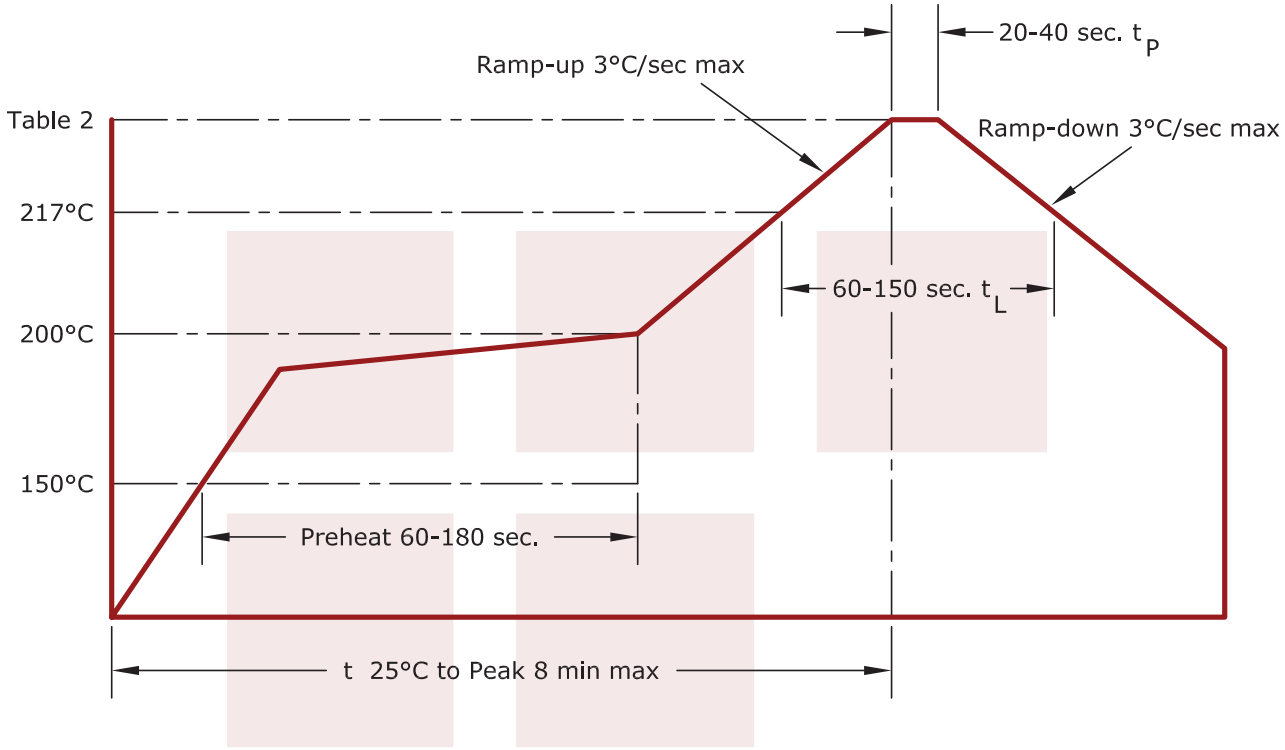

Table 1 Hand Soldering	
Item	Condition
Tip Temp. (max.)	260°
Iron Power (max.)	20 W
Time (max.)	3 Sec.
Note.	Avoid excess pressure to castelations

Table 2 Package re-flow temp	
Pkg.	tp (°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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