

**VCO (Voltage Controlled Oscillator) 0.175 inch
Commercial Frequency of 3.12 GHz to 3.92 GHz,
Phase Noise -87 dBc/Hz**

FMVC008 is a High Reliability Low Noise Voltage Controlled Oscillator (VCO) which covers a 3.12 GHz to 3.92 GHz frequency band with a voltage tuning range from 0V to 11V. This design features exceptional phase noise performance of -87 dBc/Hz @ 10 kHz offset. Supply Voltage is +10V with a generated output power level of +8.0 dBm and 2nd harmonic output of -22 dBc typical. The assembly is RoHS compliant and available in a compact 0.175 inch SMT package with an industry standard mounting footprint. The bottom surface is copper clad with 2-5 micro inches of immersion Gold over 150 - 250 micro inches of Electro less Nickel which makes it resistant to oxidation for ease of soldering. 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	3.12		3.92	GHz
Tuning Voltage	0		11	Vdc
Supply Voltage (DC)	9.75	10	10.25	Vdc
Supply Current (DC)		20	22	mA
Phase Noise @10kHz Offset		-87	-84	dBc/Hz
Phase Noise @100kHz Offset		-107	-104	dBc/Hz
Output Power	+7	+8	+10	dBm
Tuning Sensitivity (Kvco)	122		160	MHz/V
Pushing		10	14	MHz/V
Pulling (pk-pk)		22	25	MHz
Load Impedance		50		Ohms
2nd Harmonics		-22	-20	dBc

Mechanical Specifications

Size	
Length	0.175 in [4.45 mm]
Width	0.175 in [4.45 mm]
Height	0.075 in [1.91 mm]
Weight	0.0168 lbs [7.62 g]
Body Material and Plating Design	Copper Clad, Nickel, Gold Commercial

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
Temperature Cycle	MIL-STD-202, Method 107B



Features:

- 3.12 GHz to 3.92 GHz Bandwidth
- -87 dBc/Hz @ 10kHz offset
- Tuning Voltage 0V to 11V
- Pout = +8.0 dBm
- Harmonics = -22 dBc
- RoHS Compliant Assembly
- 0.175" SMT package
- Industry Standard Mounting Footprint
- 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)

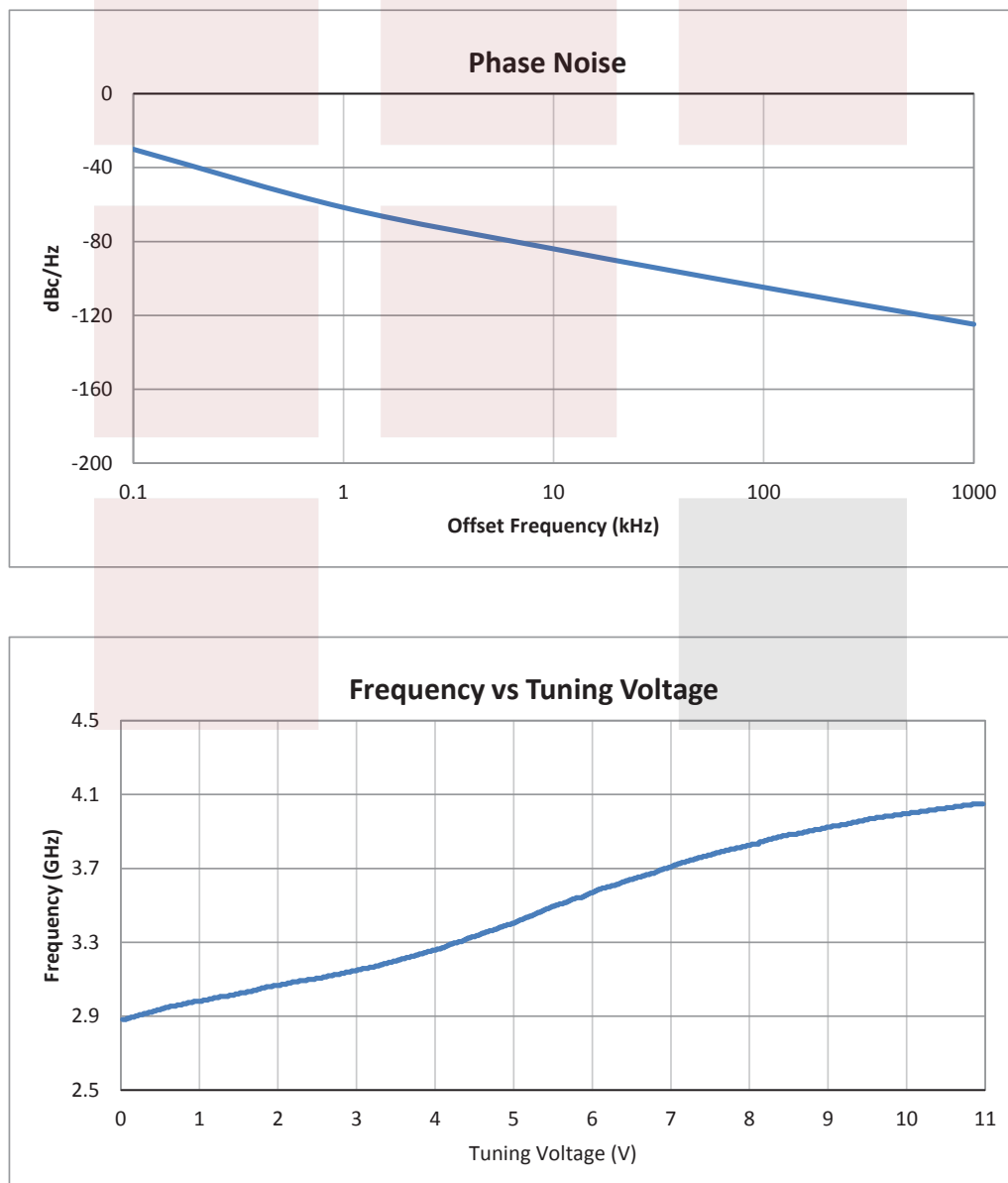
RoHS Compliant
REACH Compliant

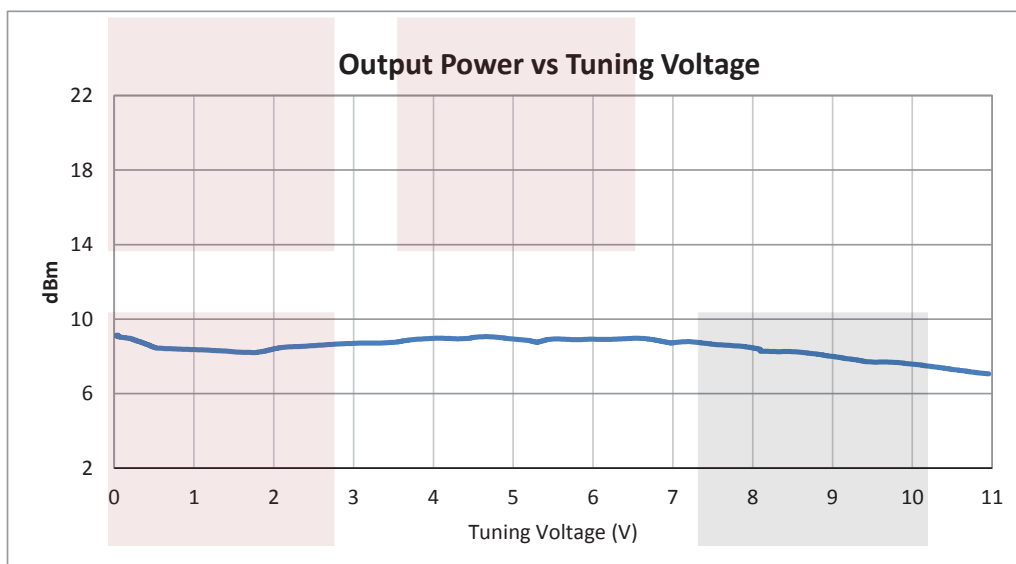
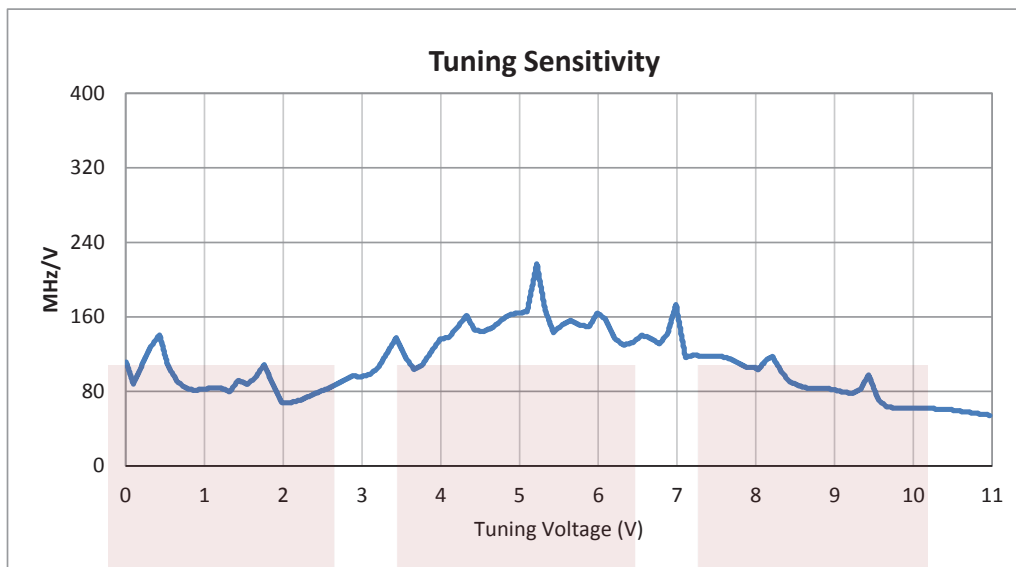
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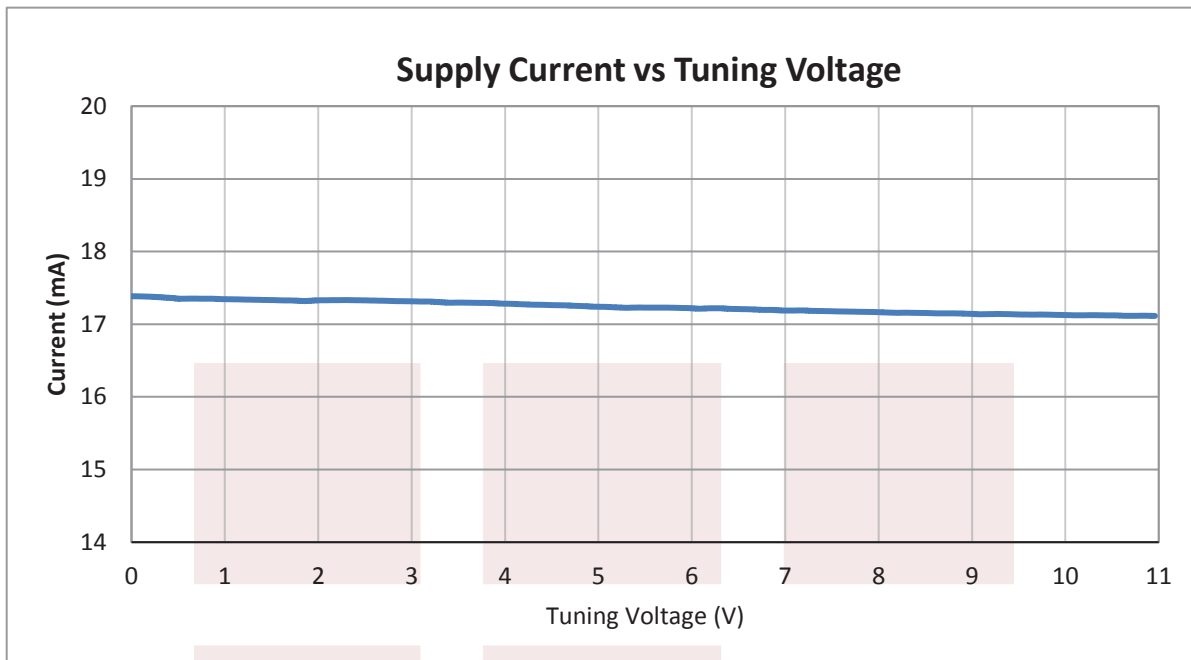
Plotted and Other Data

Notes:

Typical Performance Data





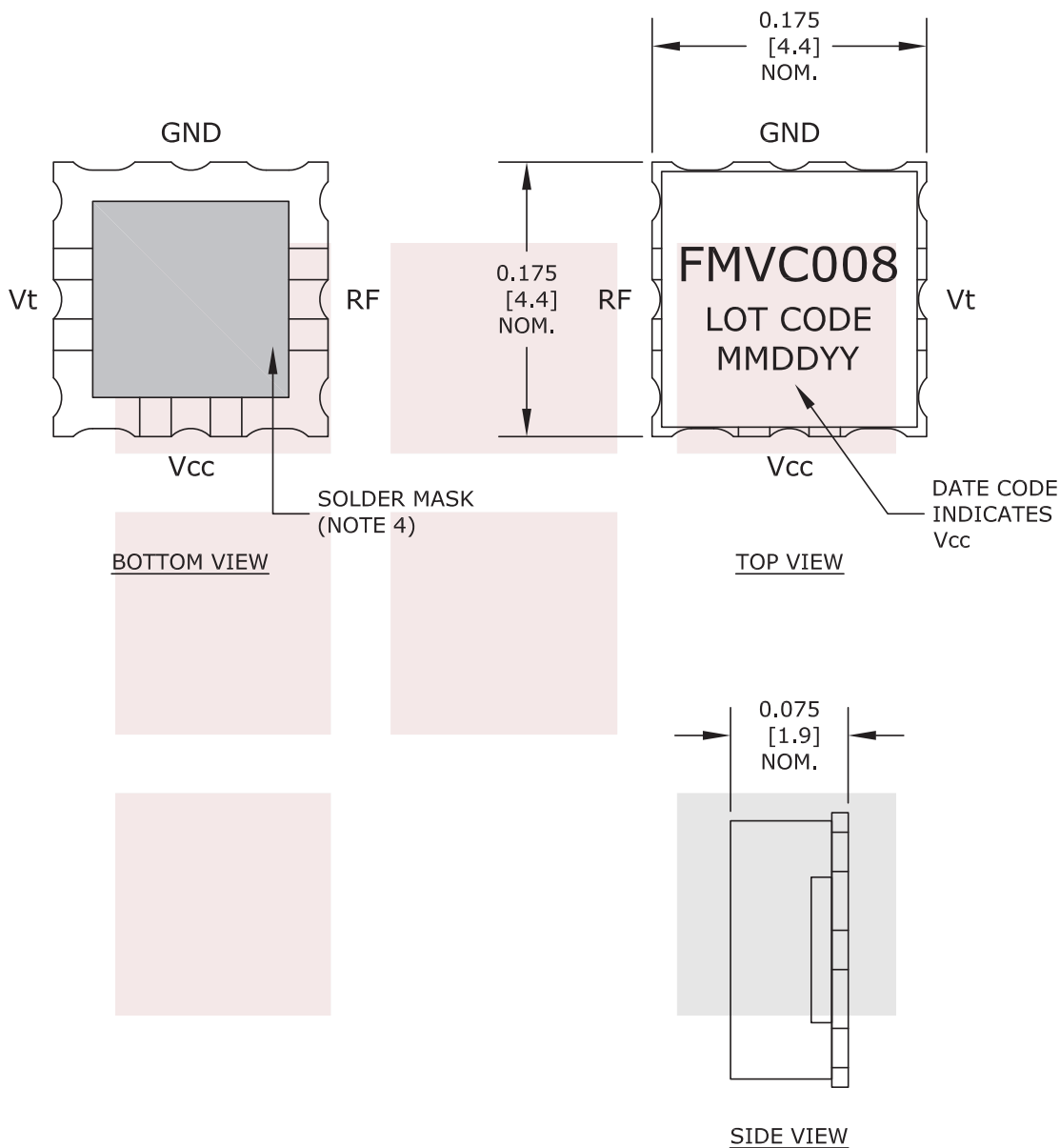


VCO (Voltage Controlled Oscillator) 0.175 inch Commercial Frequency of 3.12 GHz to 3.92 GHz, Phase Noise -87 dBc/Hz from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [VCO \(Voltage Controlled Oscillator\) 0.175 inch Commercial Frequency of 3.12 GHz to 3.92 GHz, Phase Noise -87 dBc/Hz FMVC008](http://www.fairviewmicrowave.com/vco-voltage-controlled-oscillator-3.92-ghz-fmvc008-p.aspx)

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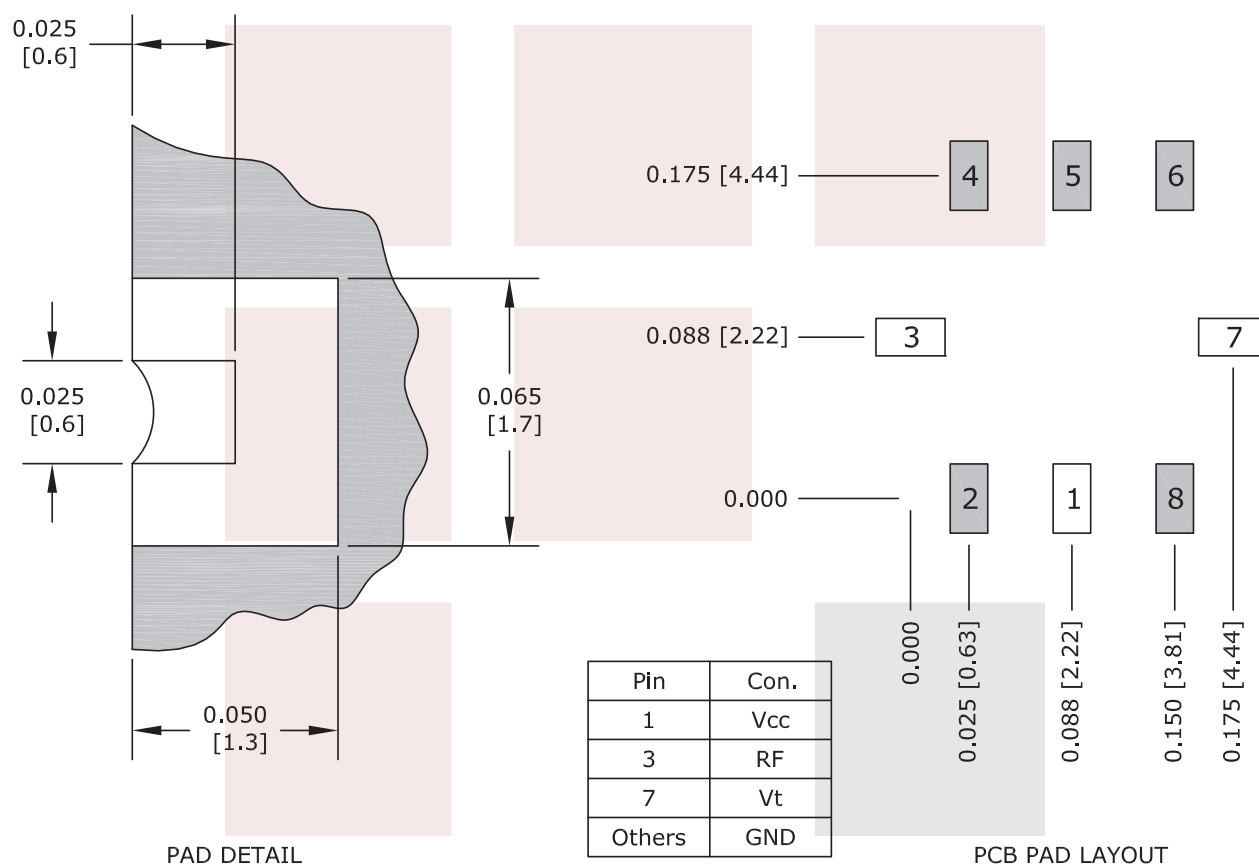
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NOTES:

1. THE CASE IS GROUND.
2. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES [mm].
3. UNLESS OTHERWISE SPECIFIED FINISH IS 150-250 MICRO INCHES ELECTROLESS NICKEL OVER COPPER CLAD PCB, 2-5 MICRO INCHES IMMERSION GOLD, OVER NICKEL.
4. SOLDER MASK NOT USED FOR APPLICATIONS GREATER THAN 6GHz.

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TITLE VCO (Voltage Controlled Oscillator) 0.175 inch Commercial Frequency of 3.12 GHz to 3.92 GHz, Phase Noise -87 dBc/Hz	DWG NO FMVC008		CAGE CODE 3FKR5		
	CAD FILE 020816	SHEET	SCALE N/A	SIZE A	2233



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CAD FILE	020816	SHEET	SCALE	N/A	SIZE A
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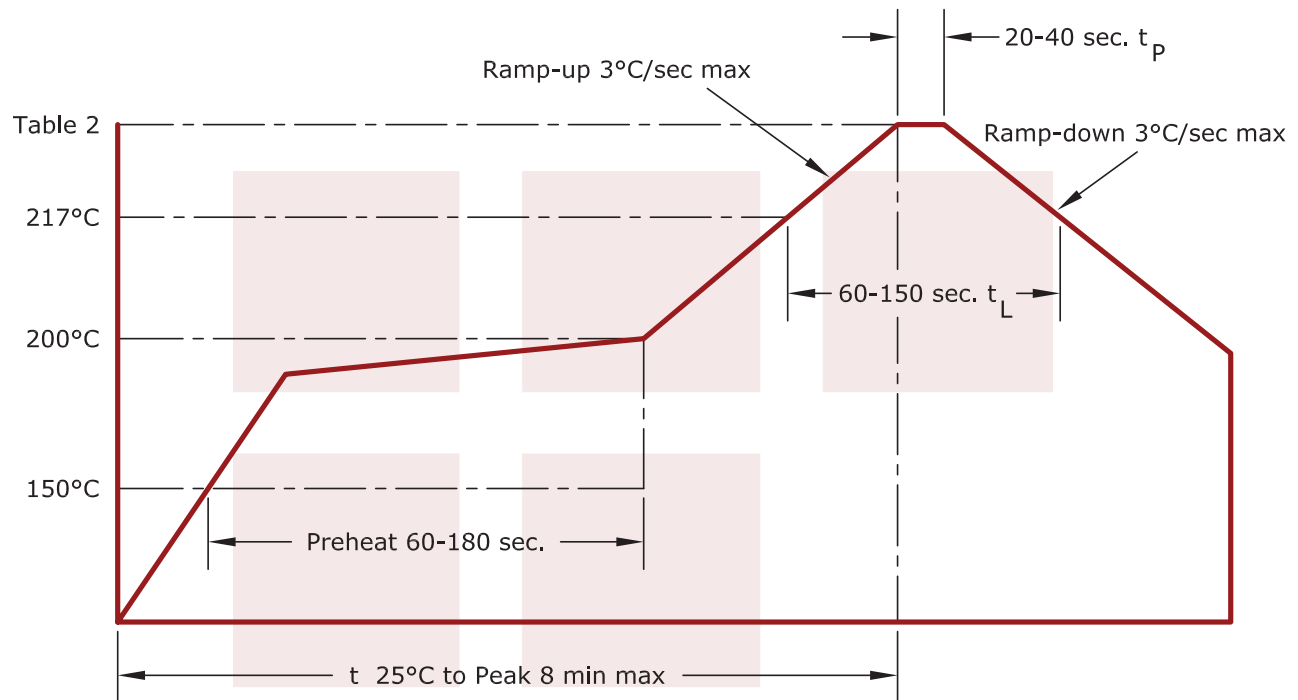


Table 1 Hand Soldering	
Item	Condition
Tip Temp. (max.)	260°
Iron Power (max.)	20 W
Time (max.)	3 Sec.
Note.	Avoid excess pressure to castelations

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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CAD FILE	020816	SHEET	SCALE	N/A	SIZE A 2233