

**VCO (Voltage Controlled Oscillator) 0.5 inch
Commercial SMT (Surface Mount), Frequency of
25 MHz to 50 MHz, Phase Noise -120 dBc/Hz**

FMVC11002 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 0V to 15V. This design features exceptional phase noise performance of -120 dBc/Hz @ 10 kHz offset. Supply Voltage is +15V with a generated output power level of +11.5 dBm and 2nd harmonic output of -12 dBc typical. The assembly is RoHs compliant and available in a compact 0.5 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	25		50	MHz
Tuning Voltage	0		15	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		-120	-118	dBc/Hz
Phase Noise @100kHz Offset		-140	-138	dBc/Hz
Output Power	+10	+11.5	+12.5	dBm
Tuning Sensitivity (Kvco)	1.5		2.5	MHz/V
Pushing		0.05	0.1	MHz/V
Pulling (pk-pk)		30	100	KHz
Tuning Port Capacitance		100		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	0.13 in [3.3 mm]
Body Material and Plating	Copper Clad, Nickel, Gold
Design	Commercial
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 2131
Vibration	MIL-STD-202, Method 204D
Temperature Cycle	MIL-STD-202, Method 107B

Features:

- 25 to 50 MHz Bandwidth
- -120 dBc/Hz @ 10kHz offset
- Tuning Voltage 0V to 15V
- Pout = +11.5 dBm
- Harmonics = -12 dBc
- RoHs Compliant Assembly
- 0.5" 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.



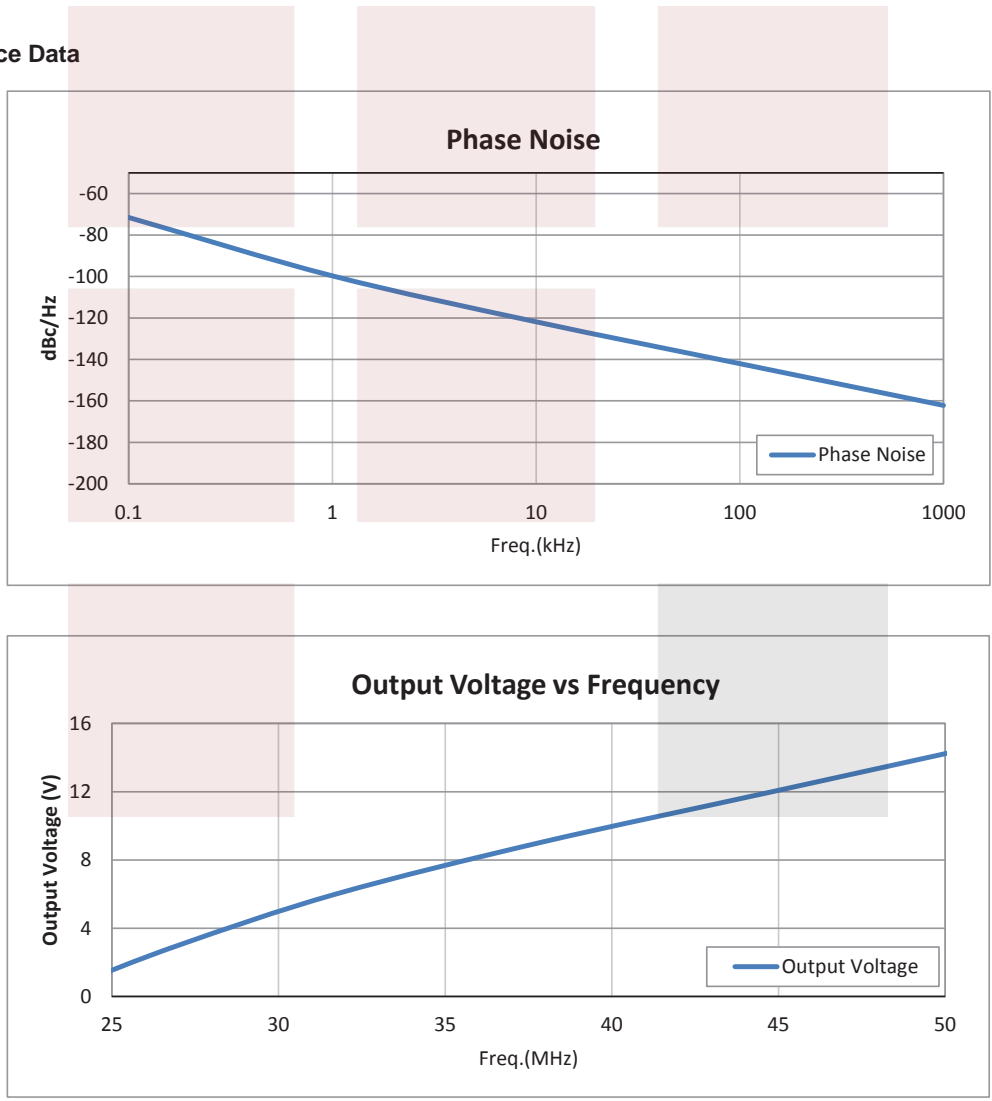
Compliance Certifications (visit www.FairviewMicrowave.com for current document)

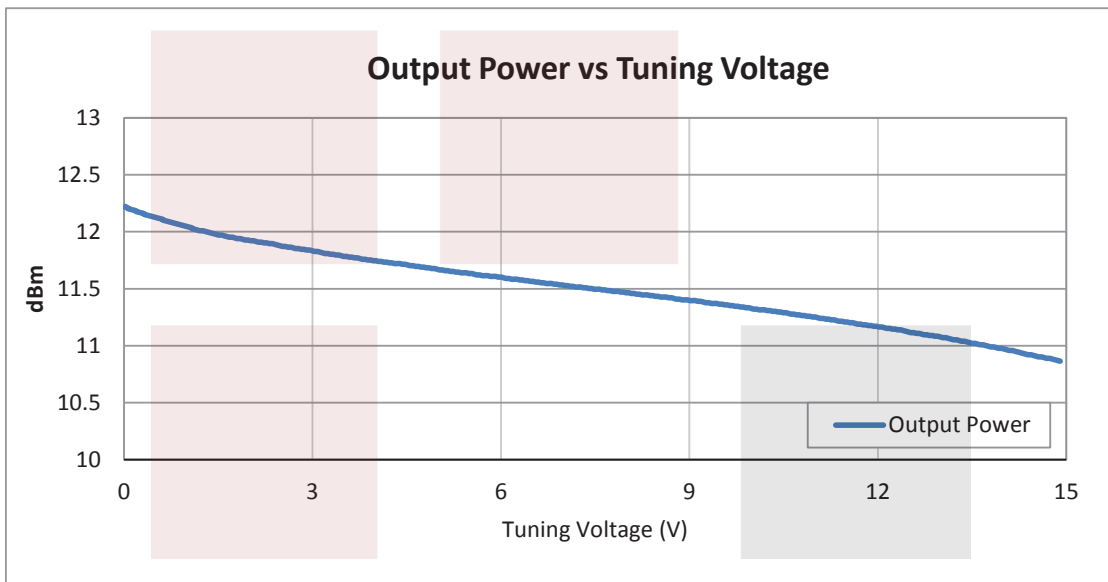
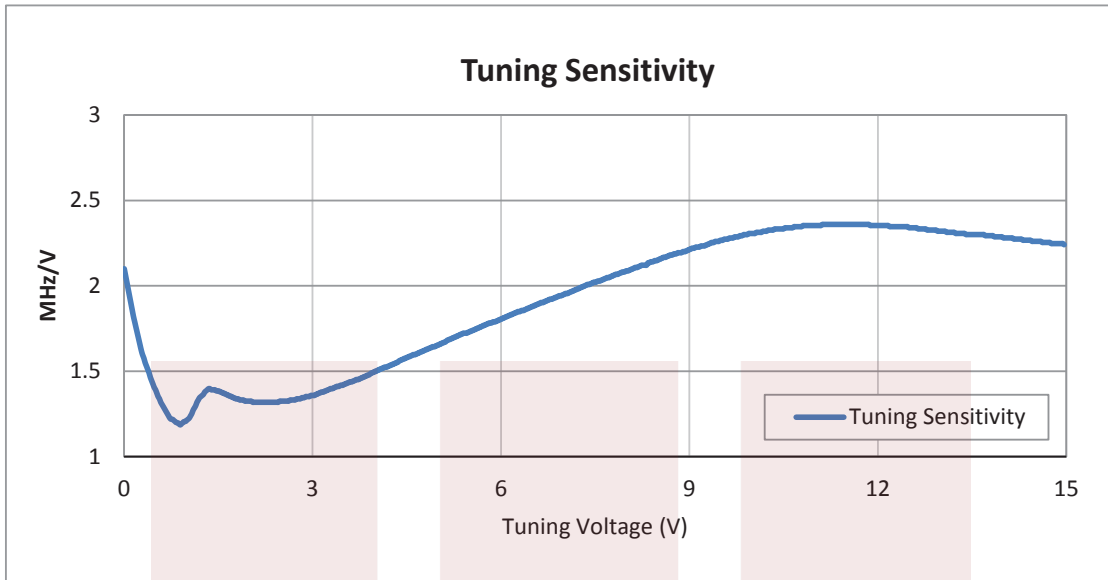
RoHS Compliant Yes
 REACH Compliant 12/17/2015

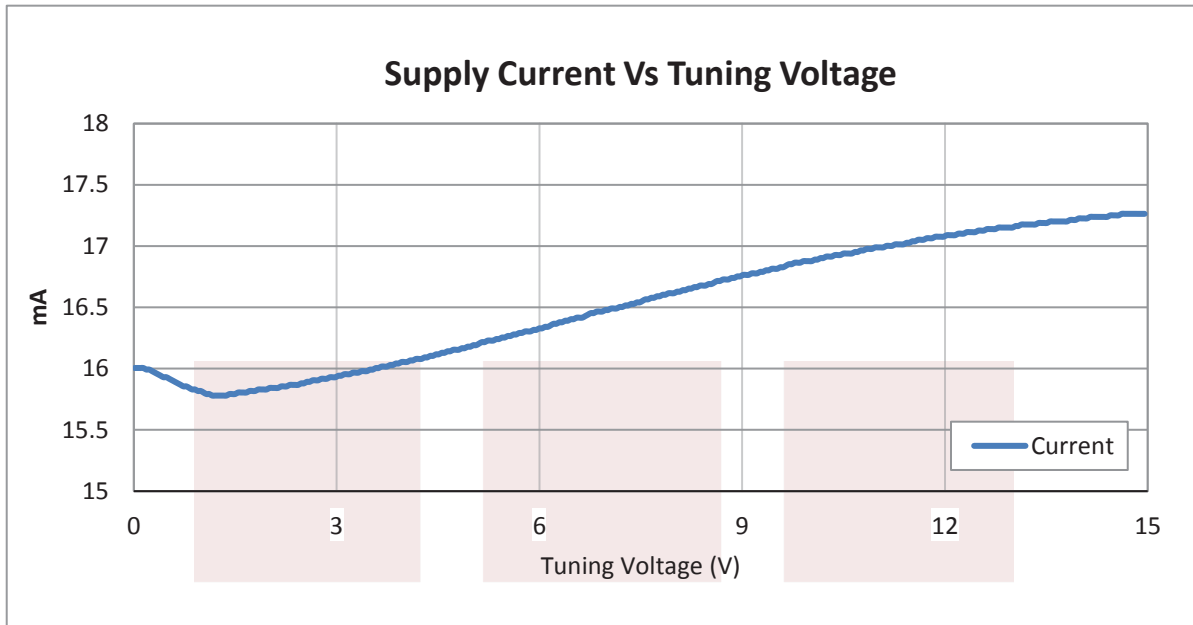
Plotted and Other Data

Notes:

Typical Performance Data





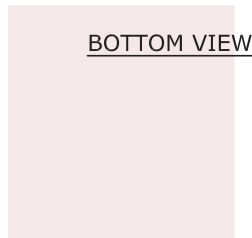
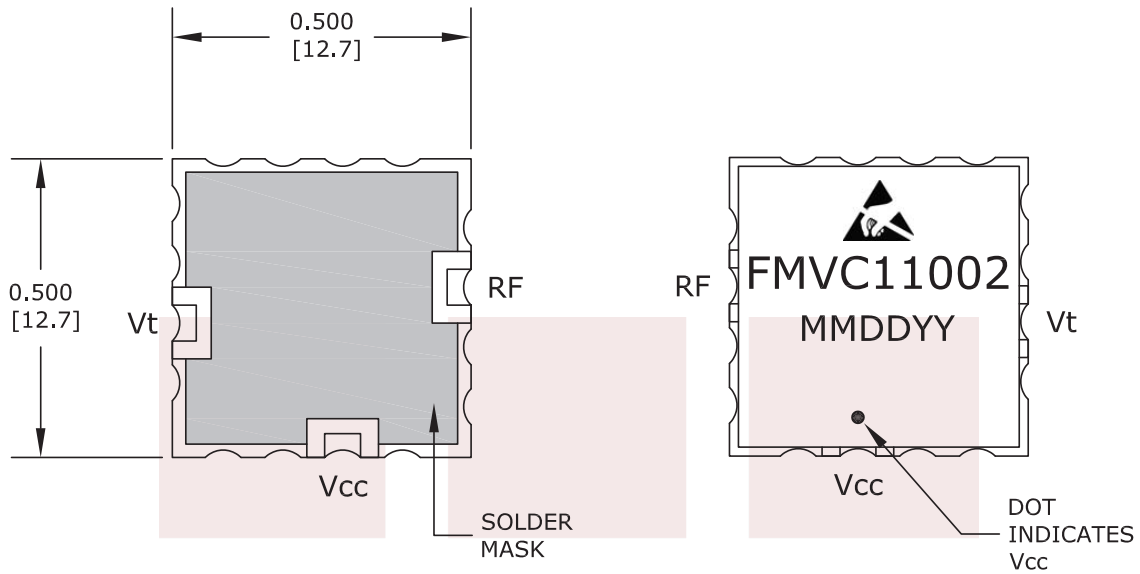


VCO (Voltage Controlled Oscillator) 0.5 inch Commercial SMT (Surface Mount), Frequency of 25 MHz to 50 MHz, Phase Noise -120 dBc/Hz from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities 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 Commercial SMT \(Surface Mount\), Frequency of 25 MHz to 50 MHz, Phase Noise -120 dBc/Hz FMVC11002](http://www.fairviewmicrowave.com/vco-voltage-controlled-oscillator-smt-surface-mount-50-mhz-fmvc11002-p.aspx)

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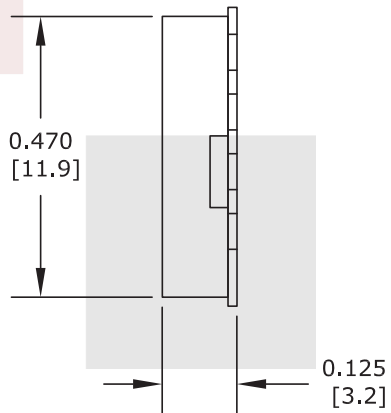
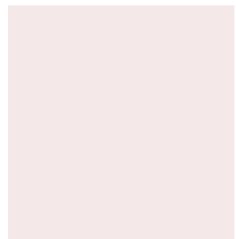
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BOTTOM VIEW



TOP VIEW

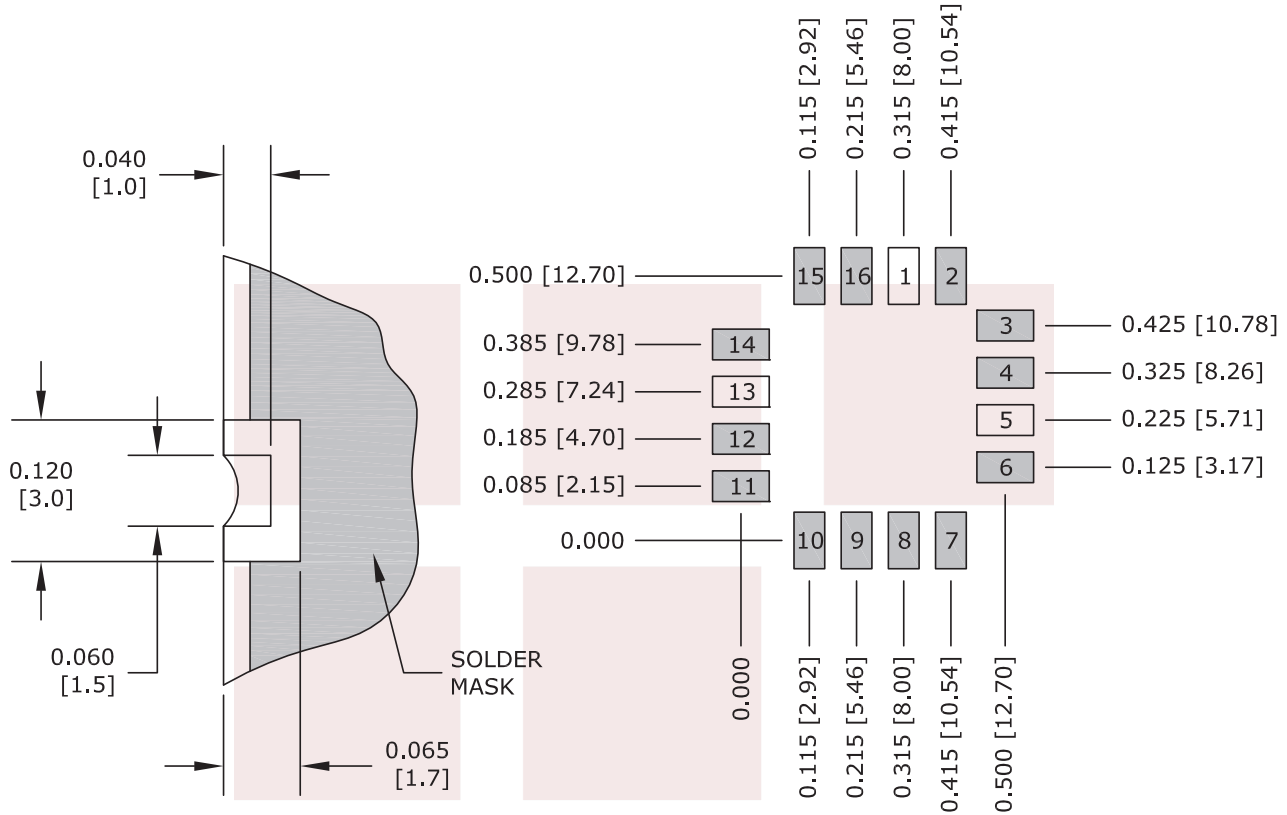


SIDE VIEW

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. MOD PORT NOT AVAILABLE ON ALL MODELS.

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 Commercial SMT (Surface Mount), Frequency of 25 MHz to 50 MHz, Phase Noise -120 dBc/Hz		DWG NO FMVC11002		CAGE CODE 3FKR5	
CAD FILE	101515	SHEET	SCALE	N/A	SIZE A 2233



PAD DETAIL

Pin	Con.
1	Vcc
5	RF
13	Vt
Others	GND

PCB PAD LAYOUT

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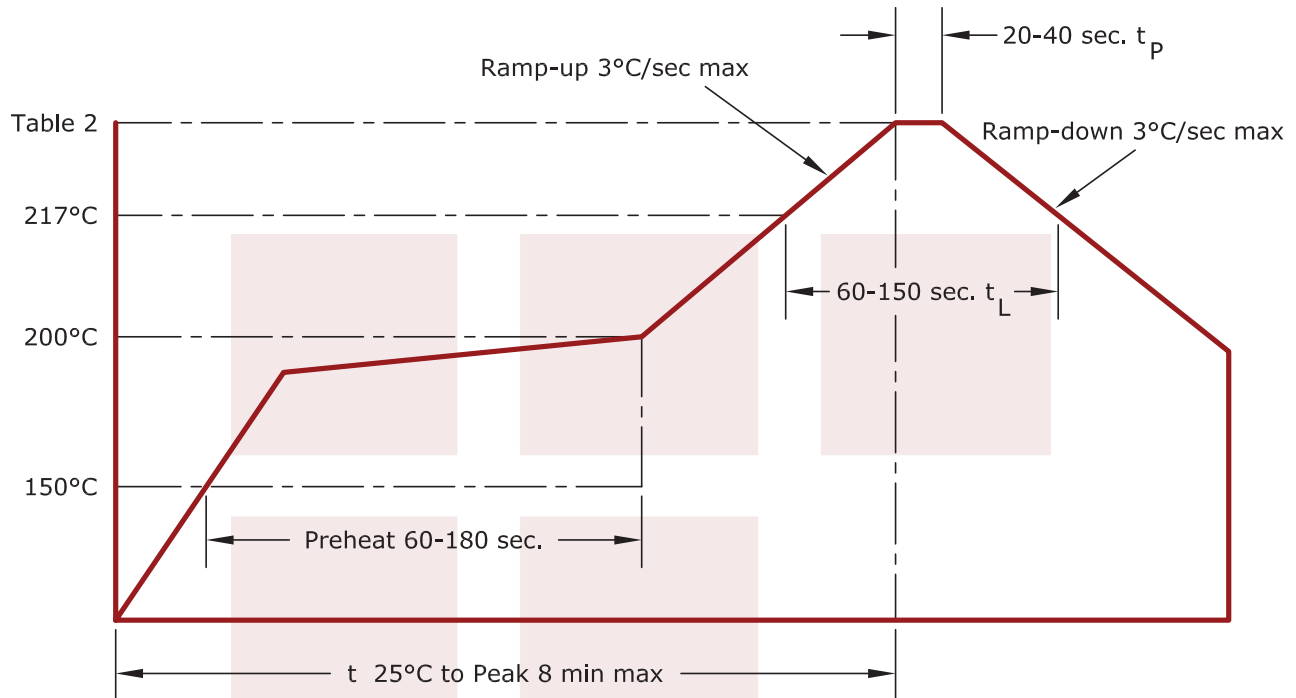


Table 1 Hand Soldering	
Item	Condition
Tip Temp. (max.)	260°
Iron Power (max.)	20 W
Time (max.)	3 Sec.
Note.	Avoid excess pressure to castelations

Table 2 Package re-flow temp	
Pkg.	tp (°C)
VS	260
MMS	260
MS	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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