



## SPECIFICATION FOR SMT VCTCXO

### MtronPTI P/N: M6054S024

#### Electrical Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency of Operation	F <sub>O</sub>		20.000000		MHz	
<b>Frequency Stability</b>						
Initial Tolerance	ΔF <sub>T</sub> /F	-2.0		+2.0	ppm	@ +25 °C after two reflow soldering profiles, V <sub>c</sub> = 1.5
Frequency Stability	ΔF <sub>T</sub> /F			0.2	ppm	(F <sub>MAX</sub> -F <sub>MIN</sub> )/2 Over -30°C to +85°C range.
Aging	ΔF <sub>AGE</sub> /F	-1.0		+1.0	ppm	Per year
Frequency Vs. Supply	ΔF <sub>VDD</sub> /F			±0.3	ppm	For ±5% voltage change
Frequency Vs. Output Load	ΔF <sub>LOAD</sub> /F			±0.2	ppm	For ±10% load change
<b>Output</b>						
Output Type			Clipped Sine Wave			
Output Load			10 kΩ // 10 pF			
Output Amplitude		0.8			V <sub>pk-pk</sub>	
Startup Time	T <sub>SU</sub>			5	ms	
<b>Voltage Tuning</b>						
Tuning Slope			Positive			
Tuning Voltage		0.50	1.50	2.50	V	Pad 1
Tuning Range		±5			ppm	Ref. to frequency with V <sub>c</sub> =1.50
<b>Supply Voltage &amp; Power Consumption</b>						
Operating Voltage	V <sub>DD</sub>	2.85	3.00	3.15	V	
Operating Current	I <sub>DD</sub>			2.0	mA	

#### Environmental Conditions:

Operating Temperature	T <sub>A</sub>	-30		+85	°C	
Storage Temperature	T <sub>S</sub>	-40		+85	°C	
Mechanical Shock	Per MIL-STD-202, Method 213 (2000 g, 0.3 ms duration, ½ sine wave)					
Vibration	Per MIL-STD-202, Method 201 & 204 (10 g's from 10-2000 Hz)					
Hermeticity	Per MIL-STD-202, Method 112 (1x10 <sup>-8</sup> atm.cc/s of helium)					
Solderability	Per EIAJ-STD-002					
Max. Soldering Conditions	See solder profile, Figure 1					
Package Type	5.0 x 3.2 x 1.55 mm, Ceramic Leadless Chip Carrier (M6054 Series)					

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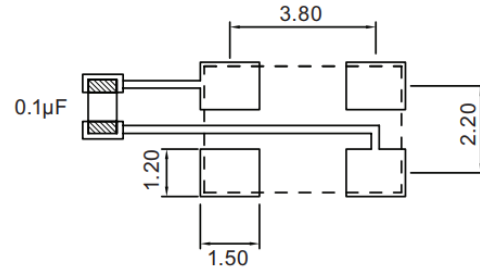
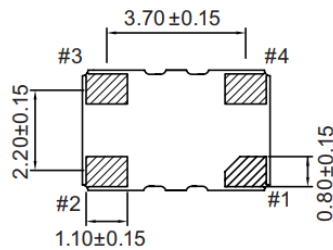
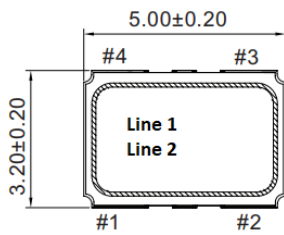
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#### Mechanical, Marking and Layout Information:

Part Marking	
Line 1	20M000
Line 2	M yy ww vv

Legend	
yy	Last 2 digits of year
ww	Week number
vv	Factory Code

Pad	Function
1	Tuning Voltage
2	GND
3	Output
4	+V <sub>DD</sub>



For optimal performance, place a 0.1uF bypass capacitor as close to Vdd and GND as possible

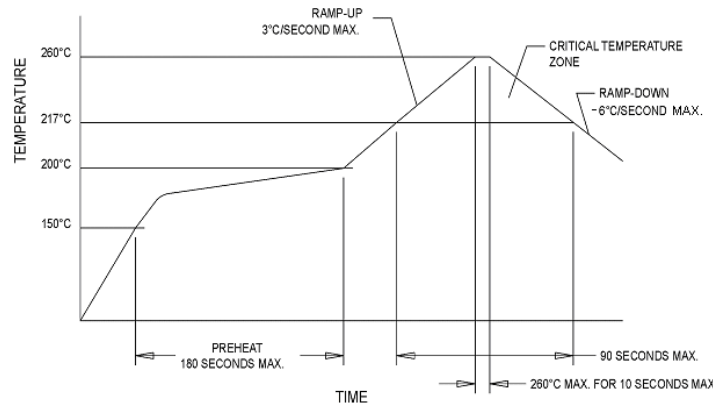
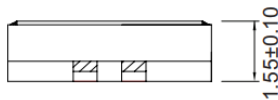


Figure 1

#### Datasheet Revision Table:

Date	Rev.	Author	Details of Revision
10/08/18	0	MM	Original Release.
10/26/18	A	MM	Updated operating temperature range from -30to70°C to -30to+85°C
02/18/19	B	MM	Updated stability to (F <sub>MAX</sub> -F <sub>MIN</sub> )/2.