


**Table 1. Electrical Performance**

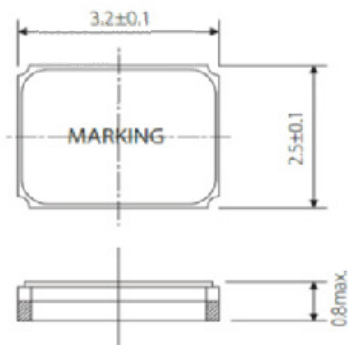
Parameter	Symbol	Min.	Typ	Max	Units
Nominal Frequency	$F_{NOM}$		24.000		MHz
Mode		Fundamental, AT - Cut			
Operating Temperature Range	$T_{OP}$	0		70	°C
<b>Frequency Stability</b>					
Stability Over $T_{OP}$ <sup>1</sup>	$F_{STAB}$			±10	ppm
Frequency Tolerance <sup>2</sup>	$F_{TOL}$			±10	ppm
Load Capacitance	$C_L$		18		pF
Equivalent Series Resistance	ESR			60	Ohms
Shunt Capacitance	$C_o$			5	pF
Drive Level			10	100	uW
Aging (at 25 °C/1st year)	$F_{AGE}$			±3	ppm
Insulation Resistance		500			MOhm
Storage Temperature	$T_{STO}$	-55		125	°C
Package		3.2 x 2.5 x 0.8 mm 4-pad			

Notes:

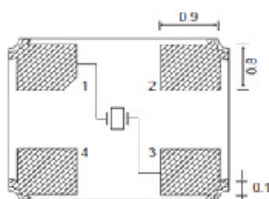
1. Referenced to the Frequency at 25 °C.
2. Frequency measured at 25 °C ± 3 °C.

Product is compliant to RoHS directive and fully compatible with lead free assembly. 

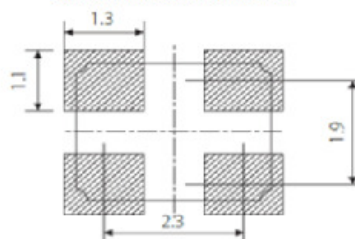
## Package Drawing



**BOTTOM VIEW**



**RECOMMENDED PAD LAYOUT**



### Marking

XXMXX

YYWWC

where

XXMXX = Frequency

YY = Year (Ex 19: 2019)

WW = Week

C = Manufacturing Location

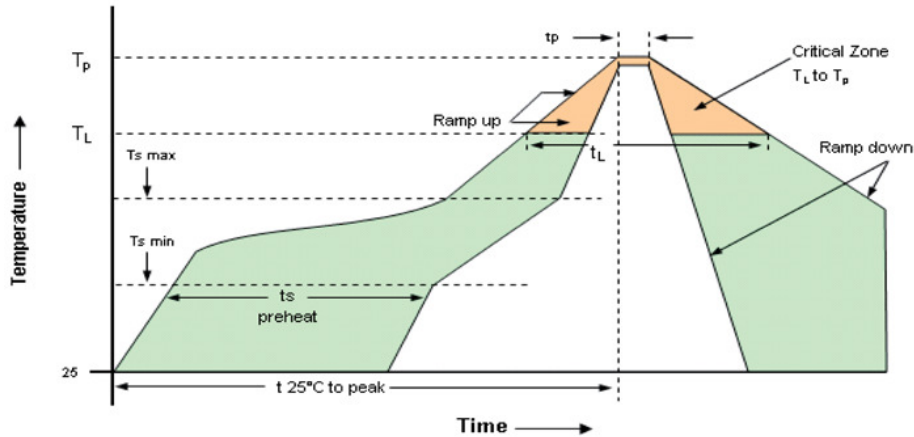
All Dimensions in mm

**Table 2. Environmental Compliance**

Parameter	Conditions
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Mechanical Vibration	MIL-STD-883, Method 2007, Condition A
Temperature Cycle	MIL-STD-883, Method 1010, Condition B
Solderability	MIL-STD-202-210, Condition B
Gross and Fine Leak	MIL-STD-883, Method 1014
Altitude	MIL-STD-883, Method 1001, Condition B
Moisture Sensitivity Level	MSL 1
Contact Pads	Gold (0.2 um min) over Nickel
Weight	20 mg

## Reliability & IR Compliance

Solderprofile:



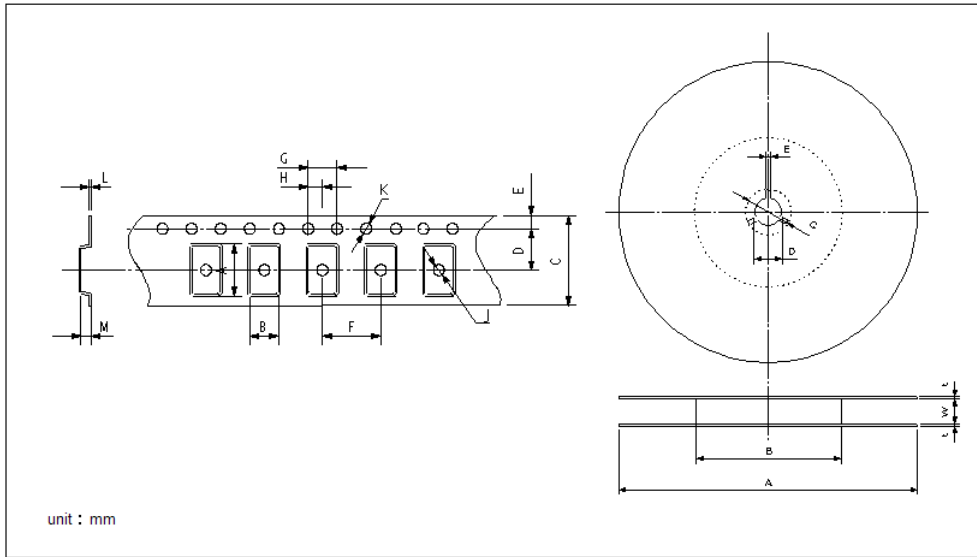
**Table 3: Reflow Profile**

Parameter	Symbol	Value
PreHeat Time Ts-min Ts-max	$t_s$	60 sec Min, 260 sec Max 150°C 200°C
Ramp Up	$R_{UP}$	3 °C/sec Max
Time Above 217 °C	$t_L$	60 sec Min, 150 sec Max
Time To Peak Temperature	$T_{AMB-P}$	480 sec Max
Time at 260 °C	$t_p$	30 sec Max
Ramp Down	$R_{DN}$	6 °C/sec Max

# Tape & Reel

**Table 4. Tape and Reel Dimensions (mm)**

Tape												Reel							
A	B	C	D	E	F	G	H	J	K	L	M	A	B	C	D	E	W	T	
3.6	2.9	8.0	3.5	1.75	4.0	4.0	2.0	0.5	1.55	0.25	1.0	180	60	21.0	13.0	2.0	9.0	2.0	



3K pieces per reel

## Ordering Information

**VXM7 - 9043 - 24M0000000xx**

**Product**  
3.2 x 2.5mm, Crystal

**SCD**

**Packaging**

TR = Tape and Reel

blank = Cut Tape / non TR quantities

**Frequency in MHz**

**Example:**

**VXM7-9043-24M0000000TR**

**VXM7-9043-24M0000000**

**Tape and Reel**

**Cut Tape**

## Revision History

Revision Date	Approved	Description
June 17, 2020	FB	Review

## Contact Information

### **USA:**

100 Watts Street  
Mt Holly Springs, PA 17065  
Tel: 1.717.486.3411  
Fax: 1.717.486.5920

### **Europe:**

Landstrasse  
74924 Neckarbischofsheim  
Germany  
Tel: +49 (0) 7268.801.0  
Fax: +49 (0) 7268.801.281



Information contained in this publication regarding device applications and the like is provided only for your convenience and may be superseded by updates. It is your responsibility to ensure that your application meets with your specifications. MICROCHIP MAKES NO REPRESENTATION OR WARRANTIES OF ANY KIND WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, STATUTORY OR OTHERWISE, RELATED TO THE INFORMATION INCLUDING, BUT NOT LIMITED TO ITS CONDITION, QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR PURPOSE. Microchip disclaims all liability arising from this information and its use. Use of Microchip devices in life support and/or safety applications is entirely at the buyer's risk, and the buyer agrees to defend, indemnify and hold harmless Microchip from any and all damages, claims, suits, or expenses resulting from such use. No licenses are conveyed, implicitly, or otherwise, under any Microchip intellectual property rights unless otherwise stated.

### **Trademarks**

The Microchip and Vectron names and logos are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.