

**Table 1. Electrical Performance**

Parameter	Symbol	Min.	Typ	Max	Units
Nominal Frequency <sup>1</sup>	F <sub>NOM</sub>		12.0000		MHz
Mode		Fundamental, AT - Cut			
Operating Temperature Range	T <sub>OP</sub>	-40/85			°C
Stability Over T <sub>OP</sub> <sup>2</sup>	F <sub>STAB</sub>			±50	ppm
Frequency Tolerance <sup>2</sup>	F <sub>TOL</sub>			±30	ppm
Load Capacitance	C <sub>L</sub>		12		pF
Shunt Capacitance	C <sub>o</sub>			5	pF
ESR				100	ohms
Drive Level		0.01	10	100	uW
Aging / 1st year (at 25 °C)	F <sub>AGE</sub>			±5	ppm
Insulation Resistance		500			MOhm
Storage Temperature	T <sub>STO</sub>	-40		90	°C

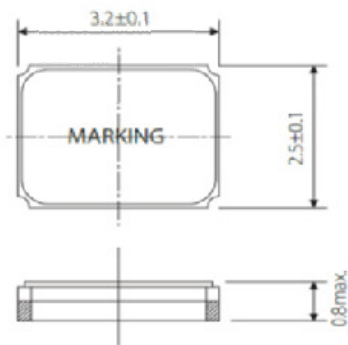
Notes:

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

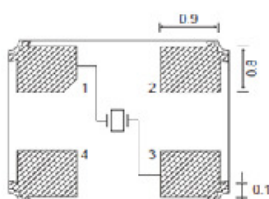
Product is compliant to RoHS directive and fully compatible with lead free assembly.



## Package Drawing

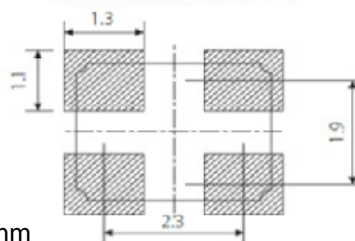


**BOTTOM VIEW**



All Dimensions in mm

**RECOMMENDED PAD LAYOUT**



### Marking

XXMXX

VYYMC

where

XXMXX = Frequency

V = VECTRON

YY = Year (Ex 19: 2019)

M = Month (A:Jan, B: Feb, C: March...)

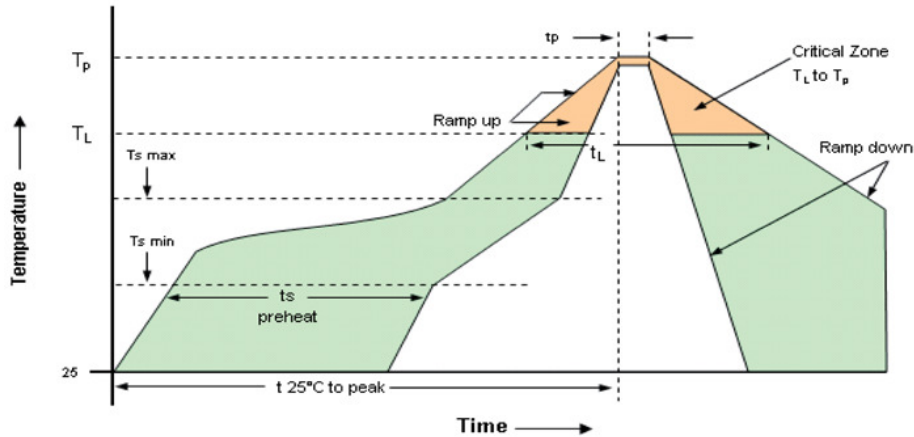
C = Manufacturing Location

**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:



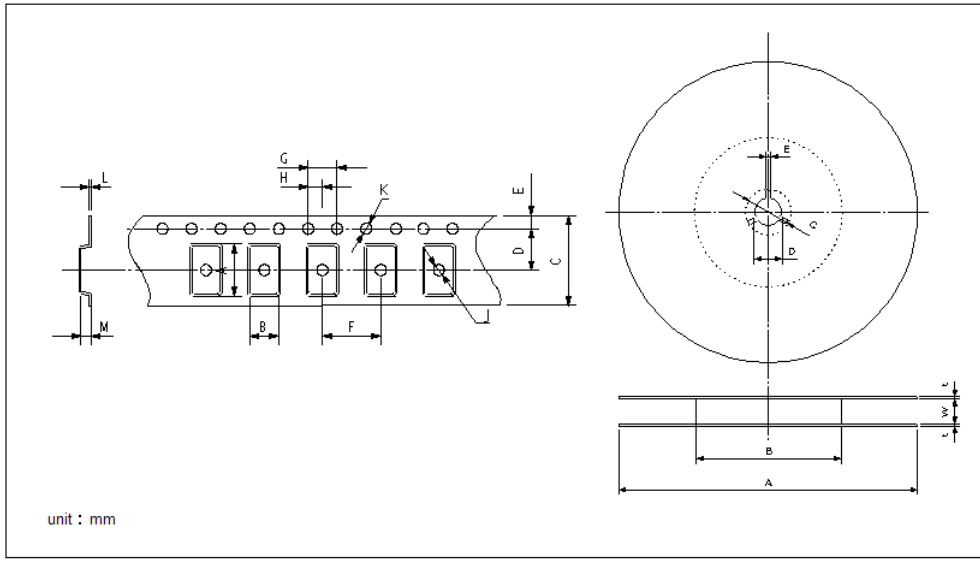
**Table 3: Reflow Profile**

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	



1K pieces per reel

## Ordering Information

**VXM7 - 9022- 12M0000000**

**Product**  
3.2 x 2.5mm, Crystal

**SCD**

**Frequency in MHz**

## Revision History

Revision Date	Approved	Description
July 11, 2019	FB	rev0.1 Initial

## Contact Information

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