

Table 1. Electrical Performance

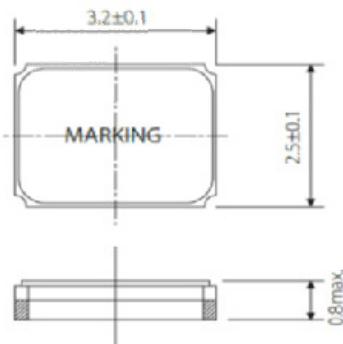
Parameter	Symbol	Min.	Typ	Max	Units
Nominal Frequency ¹	F_{NOM}	12.000		60.000	MHz
Mode			Fundamental, AT - Cut		
Operating Temperature Range, <i>ordering option</i>	T_{OP}	0/70, -10/70, -20/70, -40/85			°C
Stability Over T_{OP} ² , <i>ordering option</i>	F_{STAB}	±10		±100	ppm
Frequency Tolerance ^{2,3}	F_{TOL}		±10	±20	ppm
Load Capacitance, <i>ordering option</i>	C_L	6		32	pF
Shunt Capacitance	C_o			5	pF
Drive Level			10	100	uW
Aging / 1st year (at 25 °C)	F_{AGE}			±5	ppm
Insulation Resistance		500			MΩ
Storage Temperature	T_{STO}	-40		90	°C
Equivalent Series Resistance					
Crystal Frequency 12.000MHz-14.000MHz 14.001MHz-19.000MHz 19.001MHz-30.000MHz 30.001MHz-60.000MHz	ESR			100 80 60 40	Ohm

Notes:

1. Higher frequency 3rd OT crystals can be supplied, such as 114M285 and 125M000. Please contact factory with requirements.
2. Referenced to the Frequency at 25 °C.
3. Frequency measured at 25 °C ± 3 °C.

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

Package Drawing

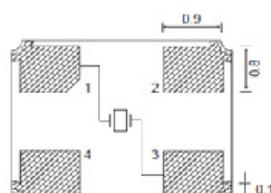


Marking Option 1

XXMXXX
YYWW C
where
XXMXX = Frequency
YY = Year
WW=Week
C = Manufacturing Location

Marking Option 2

VXXYM
where
V=Vectron
XX = Frequency
Y = Year
M = Month
A = January
L = December



Botttom View

All Dimensions in mm

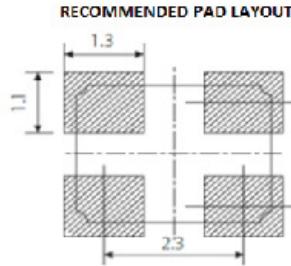


Table 2. Pinout

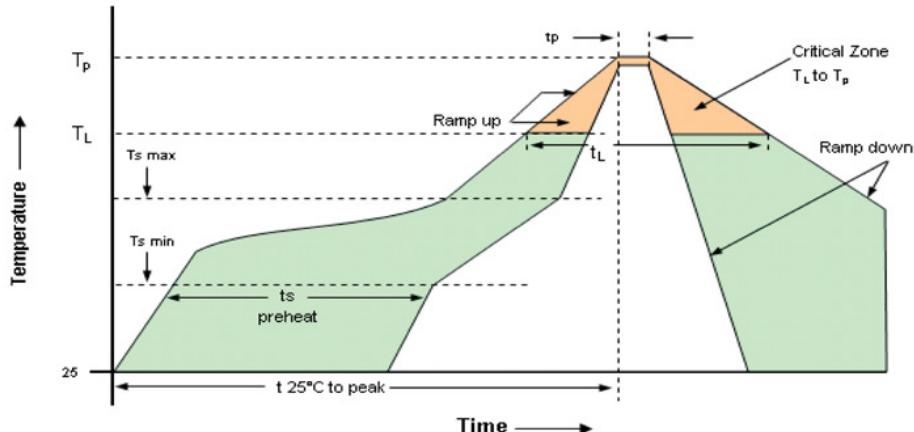
Pin	Function
1	Crystal
2	Connected to cover (Connect to GND)
3	Crystal
4	Connected to cover (Connect to GND)

Table 3. 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 μ m min) over Nickel
Weight	20 mg

Reliability & IR Compliance

Solderprofile:

**Table 4: Reflow Profile**

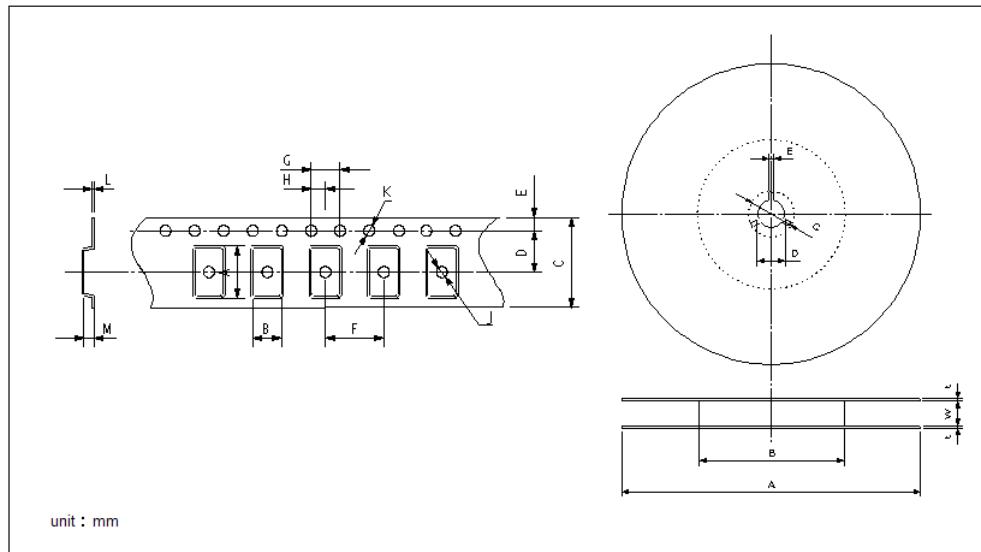
Parameter	Symbol	Value
PreHeat Time Ts-min Ts-max	t _s	60 sec Min, 260 sec Max 150°C 200°C
Ramp Up	R _{UP}	3 °C/sec Max
Time Above 217 °C	t _L	60 sec Min, 150 sec Max
Time To Peak Temperature	T _{AMB-P}	480 sec Max
Time at 260 °C	t _p	30 sec Max
Ramp Down	R _{DN}	6 °C/sec Max

Pads are Au over Ni and compatible with either SnPb or Pb free attachment.

MSL: 1

Table 5. 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	



Ordering Information

VXM7 - XXX - XX- xxMxxxxxxxxXX

Product _____
3.2 x 2.5mm, Crystal

Mode _____
1: Fundamental

Temp Stability _____

C: ± 10 ppm

D: ± 15 ppm

E: ± 20 ppm

F: ± 25 ppm

G: ± 30 ppm

H: ± 35 ppm

I: ± 40 ppm

J: ± 45 ppm

K: ± 50 ppm

S: ± 100 ppm

Packaging _____
TR: Tape and Reel
blank: Cut Tape / non Tape and Reel quantities
_SNPB: Tin lead solder dipped

Frequency in MHz _____

Load Capacitance _____
0: Series Resonance
06-32pF

Operating Temperature _____

E: -40 to 85 °C

H: -30 to 85 °C

J: -20 to 70 °C

W: -10 to 70 °C

T: 0 to 70 °C

*Note: not all combination of options are available.
Other specifications may be available upon request.

Example:

VXM7-1EE-12-25M0000000TR

Tape and Reel

VXM7-1EE-12-25M0000000

Cut Tape

VXM7-1EE-12-25M0000000_SNPB

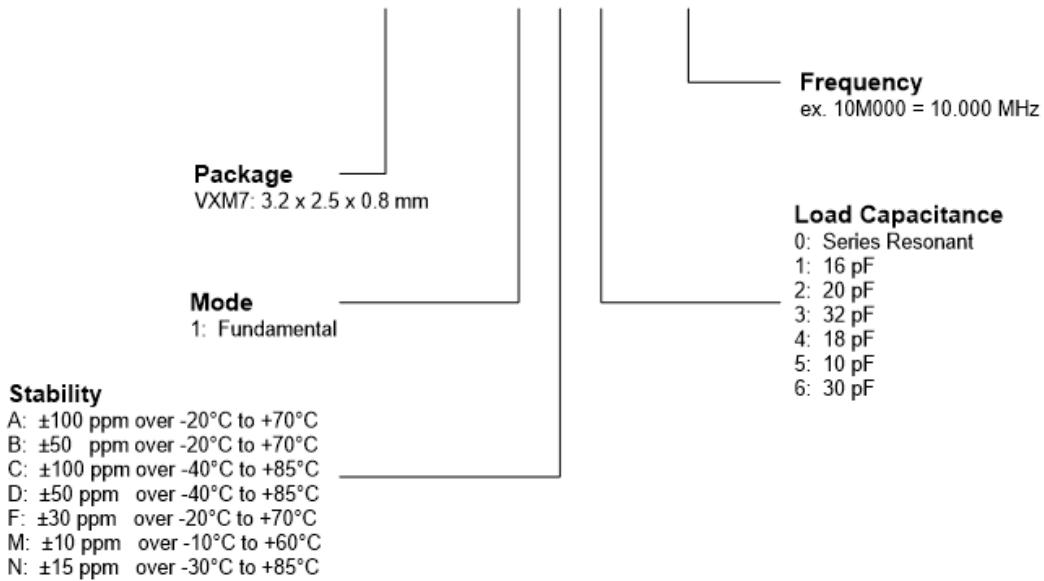
Tin lead solder dipped

Revision History

Revision Date	Approved	Description
December 5, 2016	RC	Updated ESR Table
August 29, 2016	RC	Initial datasheet for factory approval and release to customer.
September 18, 2018	FB	Update logo and contact information, add 1K reel pieces per reel and "SNPBDIP" ordering option
June 7, 2019	FB	Update logo and contact information, add Table 2 Environmental compliance, change "SNPBDIP" to "SNPB"
April 30, 2020	FB	Add tape and reel ordering option

Previous Ordering Information for Reference Only
Do Not Use to Build a New Part Number

VXM7-1M2-10M000



The ordering codes for the VXM7 were changed in 2016. If you had ordered a specific code based off this ordering method, it is still available for purchase under the old code however no new part numbers will be created using this system.

Due to the change in the 8th character from numeric to alphabetic, there is no opportunity for overlap between the two ordering methods.

Contact Information

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