

Helping Customers Innovate, Improve & Grow

Table 1. Electrical Performance

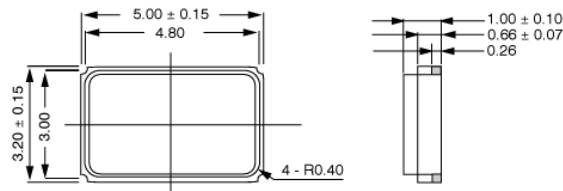
Parameter	Symbol	Min.	Typ	Max	Units
Nominal Frequency	F_{NOM}	8.000		150.000	MHz
Mode		Fundamental or 3rd Overtone			
Operating Temperature Range	T_{OP}	0/70, -10/70, -20/70, -40/85			°C
Stability Over T_{OP} ¹	F_{STAB}	±10		±100	ppm
Frequency Tolerance ²	F_{TOL}		±10		ppm
Load Capacitance	C_L	6		32	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			MOhm
Storage Temperature	T_{STO}	-40		90	°C
Equivalent Series Resistance					
Crystal Frequency	ESR				Ohm
8.000MHz-12.000MHz				80	
12.001MHz-16.000MHz				60	
16.001MHz-20.000MHz				50	
20.001MHz-24.000MHz				40	
24.001MHz-54.000MHz				30	
40.000MHz-150.000MHz, 3rd Overtone				80	

Notes:

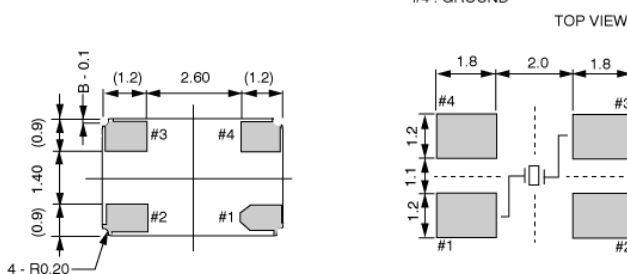
1. Referenced to the Frequency at 25 °C.
2. Frequency measured at 25 °C ± 3 °C.

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

Package Drawing



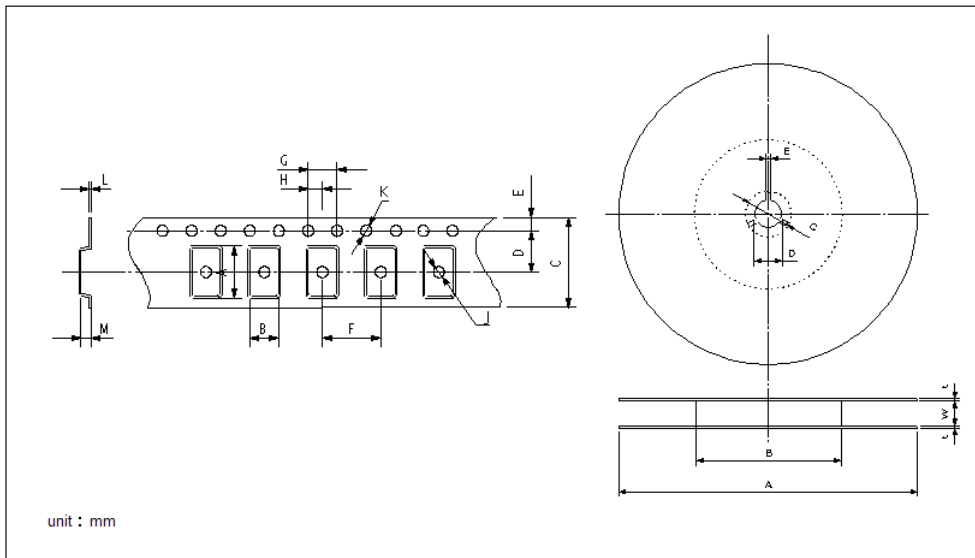
CONNECTION
 #1 : INPUT
 #2 : NC
 #3 : OUTPUT
 #4 : GROUND



Tape & Reel

Table 7. 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	
5.25	3.45	12.0	5.5	1.75	8.0	4.0	2.0	1.5	1.5	0.3	1.1	178	180	21.0	13.0	2.0	12.4	2.0	



Reliability & IR Compliance

Solderprofile:

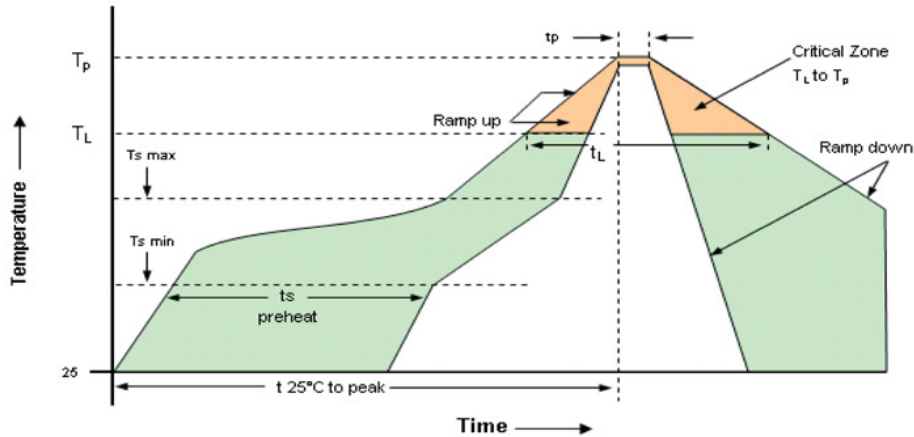


Table 2: Reflow Profile

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

Ordering Information

VXM2 - XXX - XX- xxMxxxxxxxx

<p>Product _____ 5.0 x 3.2mm, Crystal</p> <p>Mode _____ 1: Fundamental 3: 3rd Overtone</p> <p>Temp Stability _____ C: 10ppm D: 15ppm E: 20ppm F: 25ppm G: 30ppm H: 35ppm I: 40ppm J: 45ppm K: 50ppm S: 100ppm</p>	<p>Frequency in MHz _____</p> <p>Load Capacitance _____ 0: Series Resonance 06-32pF</p> <p>Operating Temperature _____ E: -40 to 85 °C J: -20 to 70 °C W: -10 to 70 °C T: 0 to 70 °C</p>
--	---

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

10ppm stability not available for -40 to 85°C

*** Add _SNPBDIP for tin lead solder dip**
Example: VXM2-1KE-18-10M0000000_SNPBDIP

Revision History

Revision Date	Approved	Description
August 29, 2016	RC	Initial datasheet for factory approval and release to customer.
August 10, 2018	FB	Update loo and contact information, add "SNPBDIP" ordering option



Microsemi Headquarters
One Enterprise, Aliso Viejo, CA 92656 USA
Within the USA: +1 (800) 713-4113
Outside the USA: +1 (949) 380-6100
Sales: +1 (949) 380-6136
Fax: +1 (949) 215-4996
email: sales.support@microsemi.com
www.microsemi.com

Microsemi, a wholly owned subsidiary of Microchip Technology Inc. (Nasdaq: MCHP), offers a comprehensive portfolio of semiconductor and system solutions for aerospace & defense, communications, data center and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs and ASICs; power management products; timing and synchronization devices and precise time solutions, setting the world's standard for time; voice processing devices; RF solutions; discrete components; enterprise storage and communication solutions; security technologies and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; as well as custom design capabilities and services. Learn more at www.microsemi.com.

Microsemi makes no warranty, representation, or guarantee regarding the information contained herein or the suitability of its products and services for any particular purpose, nor does Microsemi assume any liability whatsoever arising out of the application or use of any product or circuit. The products sold hereunder and any other products sold by Microsemi have been subject to limited testing and should not be used in conjunction with mission-critical equipment or applications. Any performance specifications are believed to be reliable but are not verified, and Buyer must conduct and complete all performance and other testing of the products, alone and together with, or installed in, any end-products. Buyer shall not rely on any data and performance specifications or parameters provided by Microsemi. It is the Buyer's responsibility to independently determine suitability of any products and to test and verify the same. The information provided by Microsemi hereunder is provided "as is, where is" and with all faults, and the entire risk associated with such information is entirely with the Buyer. Microsemi does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other IP rights, whether with regard to such information itself or anything described by such information. Information provided in this document is proprietary to Microsemi, and Microsemi reserves the right to make any changes to the information in this document or to any products and services at any time without notice.

©2018 Microsemi, a wholly owned subsidiary of Microchip Technology Inc. All rights reserved. Microsemi and the Microsemi logo are registered trademarks of Microsemi Corporation. All other trademarks and service marks are the property of their respective owners.