

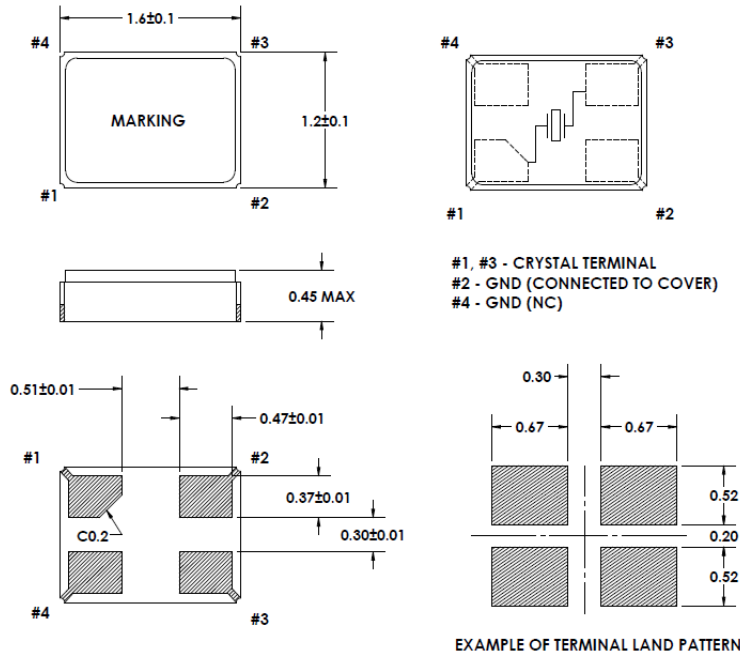
Table 1. Electrical Performance					
Parameter	Symbol	Min.	Typ	Max	Units
Nominal Frequency	$F_{NOM}$	24.000		54.000	MHz
Mode		Fundamental, AT - Cut			
Operating Temperature Range	$T_{OP}$	0/70, -10/70, -20/70, -40/85			°C
Stability Over $T_{OP}$ <sup>1</sup>	$F_{STAB}$	±15		±100	ppm
Frequency Tolerance <sup>2</sup>	$F_{TOL}$		±15		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 24.000MHz-37.399MHz 37.400MHz-54.000MHz	ESR			100 80	Ohm

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.

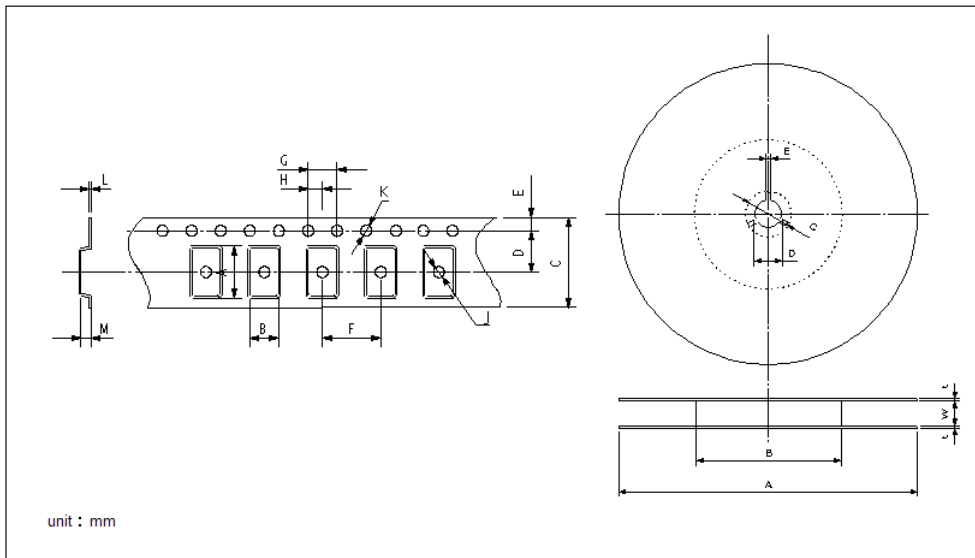
### Package Drawing



# Tape & Reel

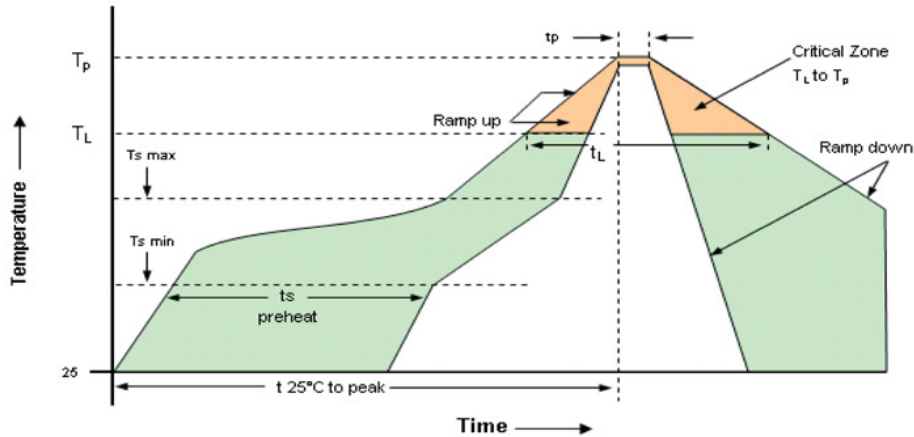
**Table 7. Tape and Reel Dimensions (mm)**

Tape												Reel							
A	B	C	D	E	F	G	H	J	K	L	M	A	B	C	D	E	W	T	
1.85	1.45	8.0	3.5	1.75	4.0	4.0	2.0	0.5	1.55	0.25	0.45	180	60	21.0	13.0	2.0	9.0	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

**VXN1 - XXX - XX- xxMxxxxxxx**

**Product**  
1.6 x 1.2mm, Crystal

**Mode**  
1: Fundamental

**Temp Stability**  
**D:** 15ppm  
**E:** 20ppm  
**F:** 25ppm  
**G:** 30ppm  
**H:** 35ppm  
**I:** 40ppm  
**J:** 45ppm  
**K:** 50ppm  
**S:** 100ppm

**Frequency in MHz**

**Load Capacitance**  
 00: Series Resonance  
 06-32pF

**Operating Temperature**  
**E:** -40 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.*

*15ppm stability not available for -40 to 85°C*

\* Add **\_SNPBDIP** for tin lead solder dip  
 Example: VXN1-1KE-18-26M0000000\_**\_SNPBDIP**

## Revision History

Revision Date	Approved	Description
August 23, 2016	RC	Initial datasheet for factory approval and release to customer.
August 10, 2018	FB	Update logo 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

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