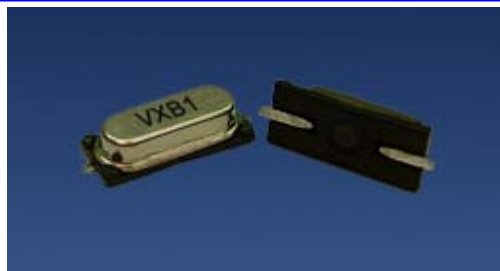


VXB1/VXB2

Microprocessor Crystals



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

Features

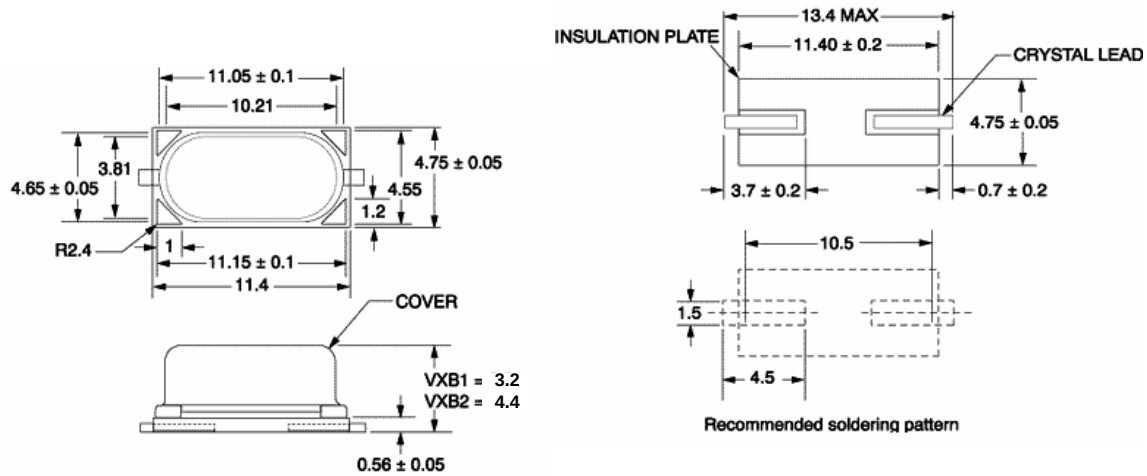
- Low Cost
- Low Profile
- Tape & Reel

Electrical Performance					
Parameter	Symbol	Min	Typical	Maximum	Units
Frequency	f_o				
Fundamental		3.5		24	MHz
3 rd Overtone		24.1		80	MHz
Frequency Stability (<i>ordering option</i>)	f_{stab}	See ordering options			ppm
Load Capacitance (<i>ordering option</i>)	C_L	10		32	pF
Standard Calibration Tolerance ¹	$f_{initial}$	-25		25	ppm
Equivalent Series Resistance	ESR				
3.50 to 3.99 MHz				140	Ohms
4.00 to 4.99 MHz				120	Ohms
5.00 to 5.99 MHz				80	Ohms
6.00 to 6.99 MHz				70	Ohms
7.00 to 8.99 MHz				45	Ohms
9.00 to 12.9 MHz				40	Ohms
13.0 to 15.9 MHz				35	Ohms
16.0 to 19.9 MHz				30	Ohms
20.0 to 23.9 MHz				25	Ohms
24.0 to 31.9 MHz (3 rd overtone)				120	Ohms
32.0 to 80.0 MHz (3 rd overtone)				80	Ohms
Shunt Capacitance	C_O			7.0	pF
Drive Level	DL	10		2000	uW
Insulation Resistance	$R_{insulation}$	500			MOhm
Aging				5	ppm/year
Storage Temperature	$T_{storage}$	-55		125	°C
Package Size		11.4 x 4.75 x [4.4 or 3.2]			mm

1. Tighter tolerance is available. Consult factory for additional information.

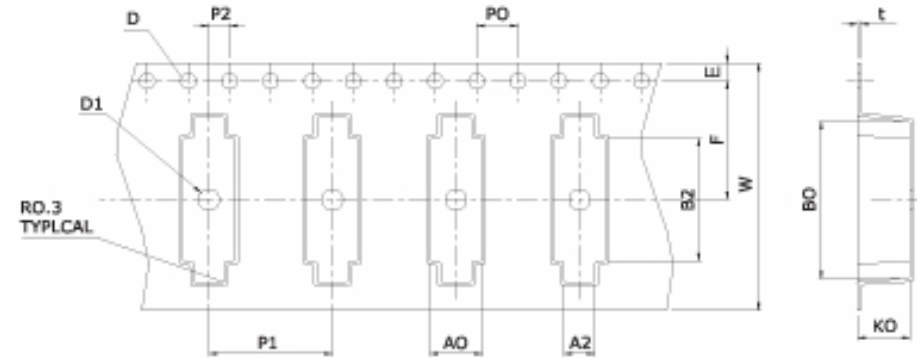
VXB1/VXB2 Datasheet

Package Drawing



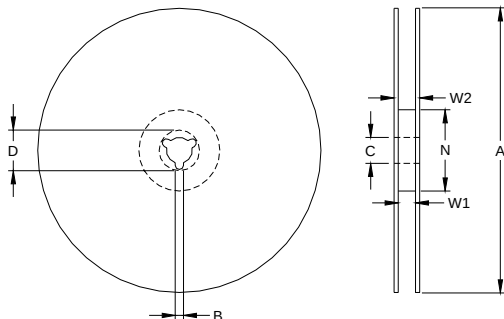
Tape Dimensions (mm)

Package	A0	A2	B0	B2	D	D1	E	F	K0	P0	P1	P2	t	W
VXB1	5.1	3.0	16.1	11.9	1.55	1.6	1.75	11.5	3.4	4.0	12.0	2.0	0.4	24.0
VXB2	5.1	3.0	16.1	11.9	1.5	2.0	1.75	11.5	4.3	4.0	12.0	2.0	0.4	24.0



Reel Dimensions (mm)

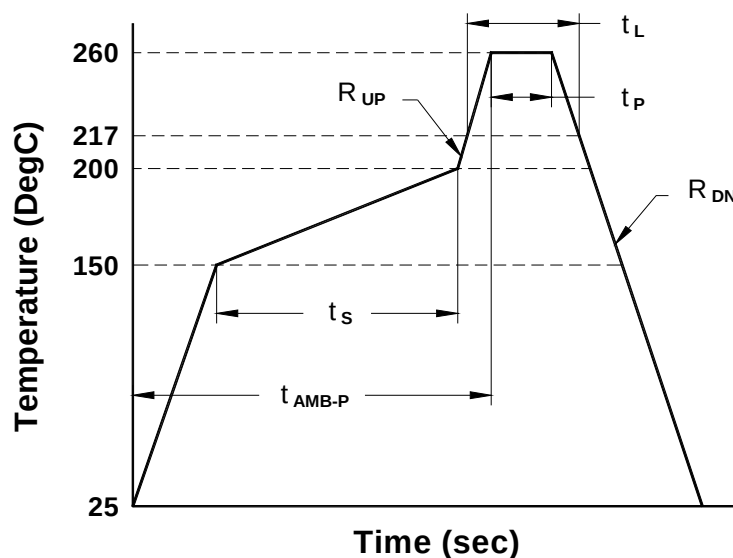
Package	A	B	C	D	W1	W2	N
VXB1	330	1.5	13	20.2	24.4	26.4	100
VXB2	330	2.0	13	21.0	24.4	26.4	80



Suggested IR profile

The VXB1/VXB2 are qualified to meet the JEDEC standard for Pb-Free assembly. The temperatures and time intervals listed are based on the Pb-Free small body requirements and parameters are listed in the table below. The VXB1/VXB2 are hermetically sealed so an aqueous wash is not an issue.

Reflow Profile (IPC/JEDEC J-STD-020)		
Parameter	Symbol	Value
PreHeat Time	t_S	60 sec Min, 180 sec Max
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	20 sec Min, 40 sec Max
Ramp Down	R_{DN}	6 °C/sec Max



Ordering Information

VXB2-1A2-10M000

Package

VXB1: 3.2 mm tall
VXB2: 4.4 mm tall

Mode

1: Fundamental (3.5 to 30 MHz)
3: 3rd Overtone (24.1 to 75 MHz)

Stability

A: ± 100 ppm over -20°C to $+70^{\circ}\text{C}$
B: ± 50 ppm over -20°C to $+70^{\circ}\text{C}$
C: ± 100 ppm over -40°C to $+85^{\circ}\text{C}$
D: ± 50 ppm over -40°C to $+85^{\circ}\text{C}$
F: ± 30 ppm over -20°C to $+70^{\circ}\text{C}$

Frequency

ex. 10M000 = 10.000 MHz

Load Capacitance

0: Series Resonant
1: 16 pF
2: 20 pF
3: 32 pF
4: 18 pF
5: 10 pF
6: 30 pF

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