A Product Line of
Diodes Incorporated

PRODUCT SPECIFICATION

NOMINAL FREQUENCY	**32.000000 MHz**
PRODUCT TYPE	**TYPE FL 3.2x2.5 SEAM SEALED CRYSTAL**
PART NUMBER	**FL3200115**
ISSUE DATE	**February 24, 2022**
VERSION	**B**

Diodes Incorporated

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*Pb-free
*RoHS Compliant
*HF-Halogen Free
*REACH Compliant
*MSL: Level 1

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TYPE FL 3.2x2.5 SEAM SEALED CRYSTAL

FL3200115

VER.B 24-FEB-22

ELECTRICAL SPECIFICATIONS

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	Fn	32.000000	MHz	
Mode of Oscillation	MO	AT Cut-Fundamental		
Calibration Load Capacitance	CL	12	pF	
Calibration Tolerance	FL	± 10	ppm	at 25°C±3°C
Operating Temperature Range	TR	-30 to +85	°C	
Frequency Stability(Frequency Deviation over the Operating Temperature Range)	F/T	± 10	ppm	Reference to the Frequency at 25°C
Operating Drive Level		10	µW	
Maximum Drive Level		100	µW	
Equivalent Series Resistance	ESR	40	Ω	Max.
Shunt Capacitance	C0	2	pF	Max.
Frequency Perturbation	WCD	± 3	ppm	
Aging at 25°C		± 1	ppm	Max, 1st year
Storage Temperature		-55 to +125	°C	
Insulation Resistance		500	MΩ	Min

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RELIABILITY SPECIFICATIONS

MECHANICAL AND ENVIRONMENTAL RATINGS:

a)FINE LEAK TEST: JESD22-A109 (Condition 1A)

b)GROSS LEAK TEST: JESD22-A109 (Condition C)

c)MOISTURE RESISTANCE: JESD22-A113

d)SHOCK: JESD22-B104 (Condition B)

e)SOLDERABILITY : (RoHS version): J-STD-002

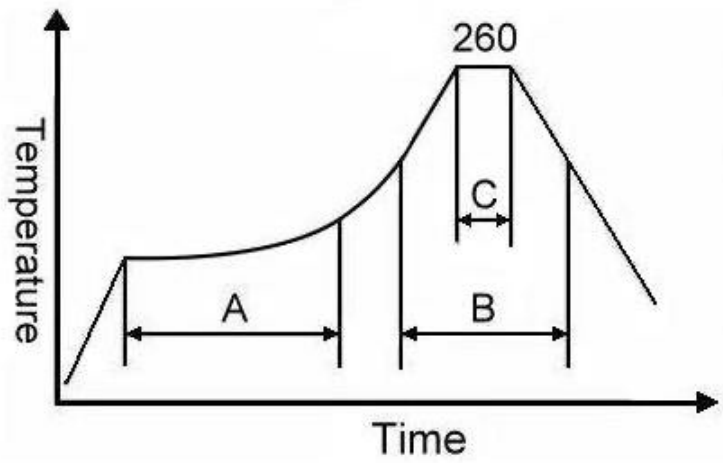
f)VIBRATION: JESD22-B103

g)SOLVENT RESISTANCE: JESD22-B107

h)RESISTANCE TO SOLDERING HEAT (RoHS version): J-STD-020D Table 5.2 Pb free devices (3 cycles max)

SUGGESTED IR REFLOW PROFILE

*As per IPC-JEDEC J-STD-020D



Note:

	Stage	Temperature	Time
A	Preheat	150~200°C	60~120 Sec
B	Primary Heat	217°C	60~150 Sec
C	Peak	260°C	10 Sec

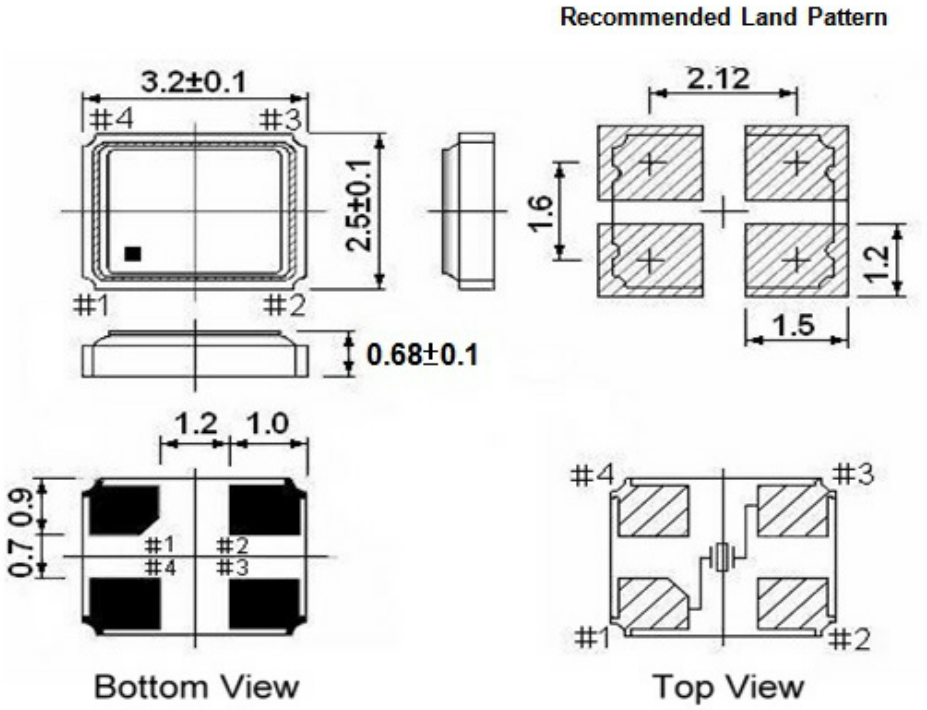
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MARKING



y	w	E	v
Year Code (Last Digit of Year)	Week Code	CL Code	Factory Code

MECHANICAL DRAWINGS (Scale: None. Dimensions are in mm.)

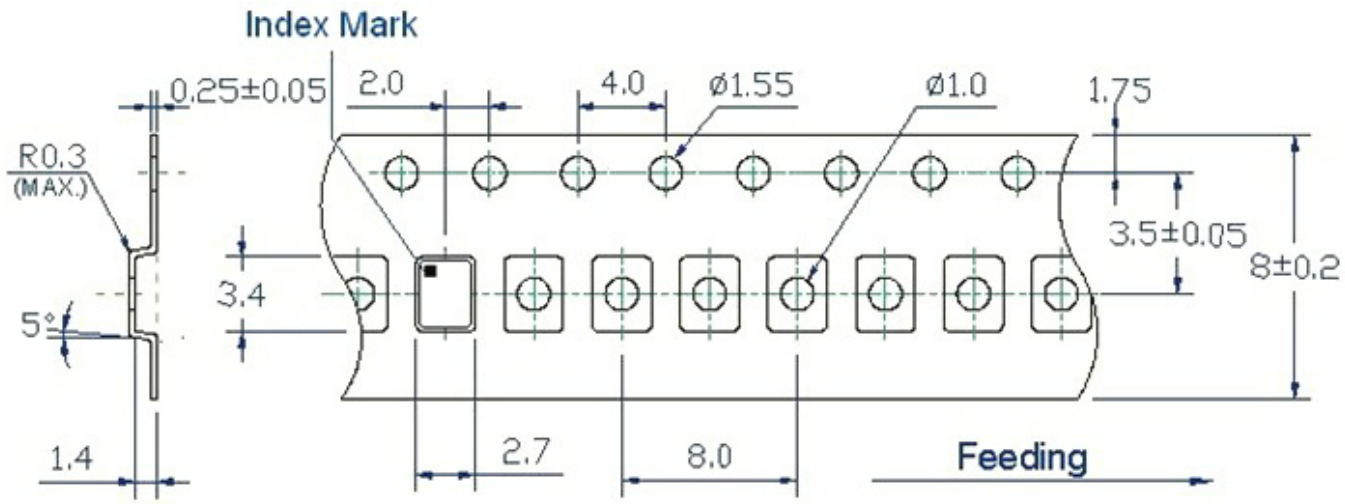


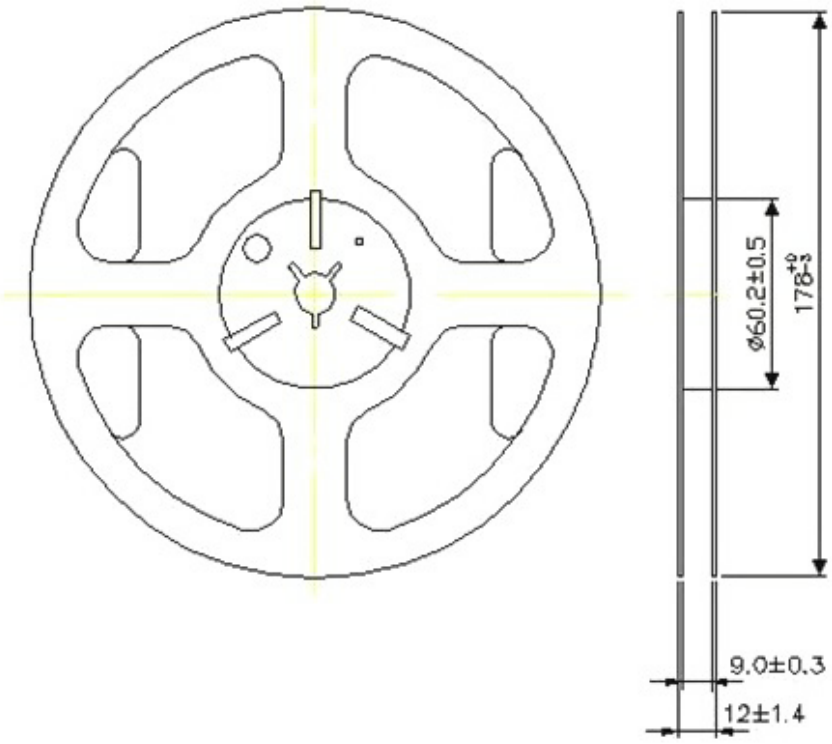
** Recommended - Pin 1 & 3 : CRYSTAL
Pin 2 & 4 : GND

Notes:
1. Package drawings are for reference only, and the appearances of objects may vary. Actual packages are based on the real product.
2. The marking dot denotes Pin#1.
3. The position and shape of the chamfer pin may vary and are based on the real product.

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Tape & Reel

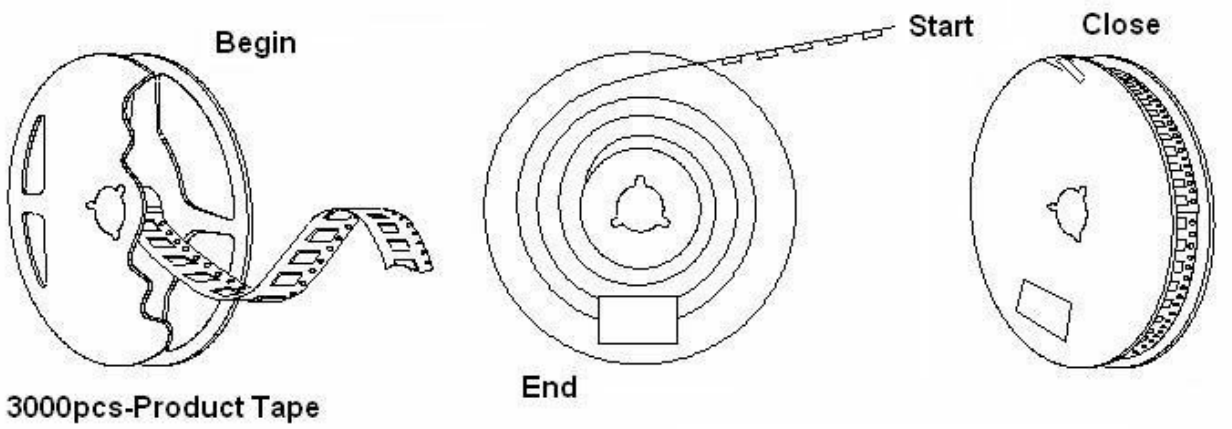


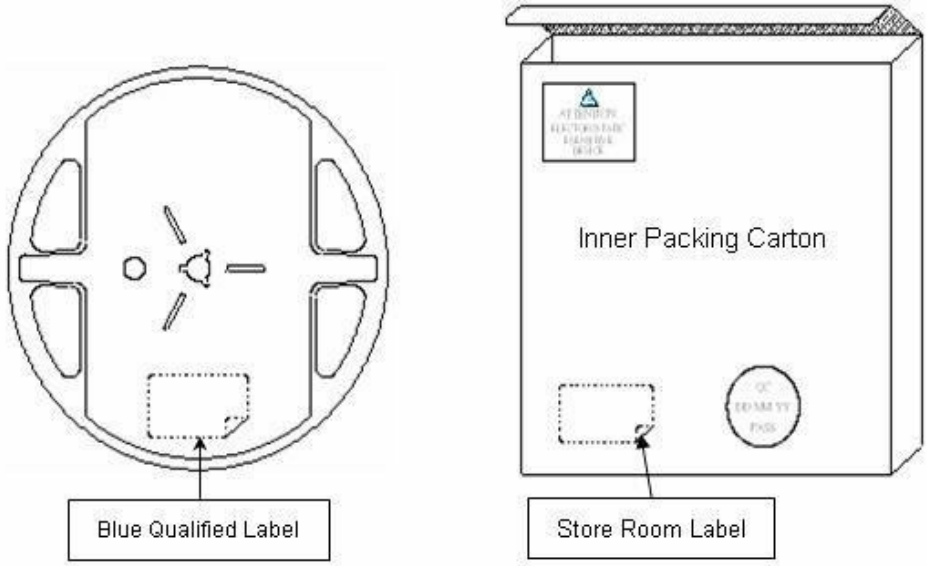


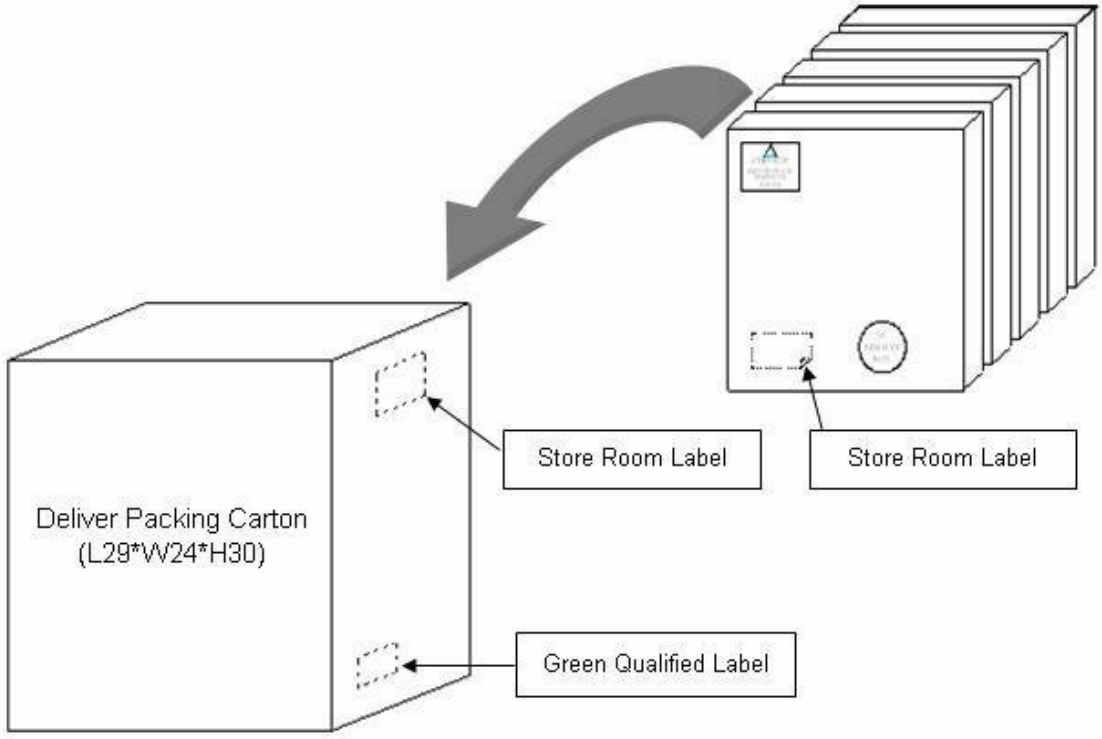
1. 230mm minimum leafer which consist of carrier and/or tape followed by a minimum of 160mm of empty carrier tape sealed with cover tape.
2. 160mm minimum trailer of empty carrier tape sealed with cover tape.

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PACKING







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VERSION HISTORY

Version No.	Version Date	Description	Notes
A	Feb. 22, 2022	Initial Release	
B	Feb. 24, 2022	Updated Shunt Capacitance to 2pF max	

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