



A Product Line of  
Diodes Incorporated



## SPECIFICATION FOR APPROVAL

CUSTOMER \_\_\_\_\_

NOMINAL FREQUENCY 14.318180 MHz

PRODUCT TYPE **TYPE FL 3.2x2.5 SEAM SEALED CRYSTAL**

SPEC. NO. ( P/N ) FL1430019

CUSTOMER P/N \_\_\_\_\_

ISSUE DATE December 26, 2017

VERSION D

APPROVED	PREPARED	QA
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### Diodes Incorporated

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<https://www.diodes.com>

- \*Pb-free
- \*RoHS Compliant
- \*HF-Halogen Free
- \*REACH Compliant

# TYPE FL 3.2x2.5 SEAM SEALED CRYSTAL

## FL1430019

VER. D 26-Dec-17

### VERSION HISTORY

Version No.	Version Date	Description	Notes
A	Dec.22,2010	Initial Release	
B	Apr.15,2011	Updated Suggested IR Reflow Profile & Format	
C	Apr.9,2012	Changed Equivalent Series Resistance from 80 $\Omega$ to 70 $\Omega$ & Maximum Drive Level from 100 $\mu$ W to 200 $\mu$ W	
D	Dec.26,2017	Updated logo	



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### ELECTRICAL SPECIFICATIONS

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	Fn	14.318180	MHz	
Mode of Oscillation	MO	AT Cut-Fundamental		
Calibration Load Capacitance	CL	20	pF	
Calibration Tolerance	FL	±30	ppm	at 25°C±3°C
Operating Temperature Range	TR	-40 to +85	°C	
Frequency Stability (Frequency Deviation over the Operating Temperature Range)	F/T	±30	ppm	Reference to the Frequency at 25°C
Operating Drive Level		10	μW	
Maximum Drive Level		200	μW	
Equivalent Series Resistance	ESR	70	Ω	Max
Shunt Capacitance	C0	5	pF	Max
Aging at 25°C		±3	ppm	Max, 1st year
Storage Temperature		-55 to +125	°C	
Insulation Resistance		500	MΩ	Min

※ This product doesn't include harmful substance that stipulated by SONY SS-00259 Level 1 and S-AT2-001 Level 1 standard. RoHS Compliant (Pb - Free).

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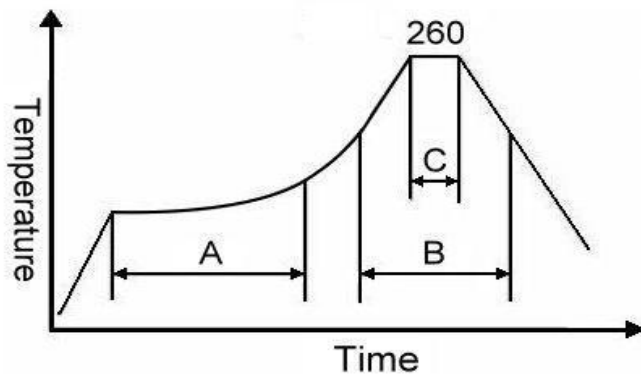
## RELIABILITY SPECIFICATIONS

### 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:

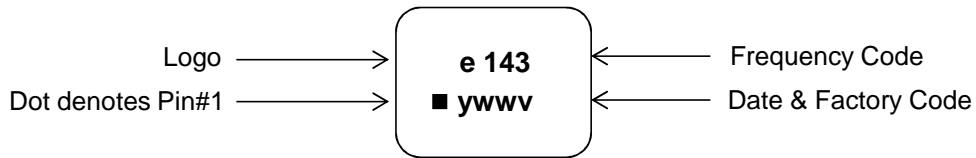
	Stage	Temperature	Time
A	Preheat	150~200°C	60~120 Sec
B	Primary Heat	217°C	60~150 Sec
C	Peak	260°C	10 Sec

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### MARKING



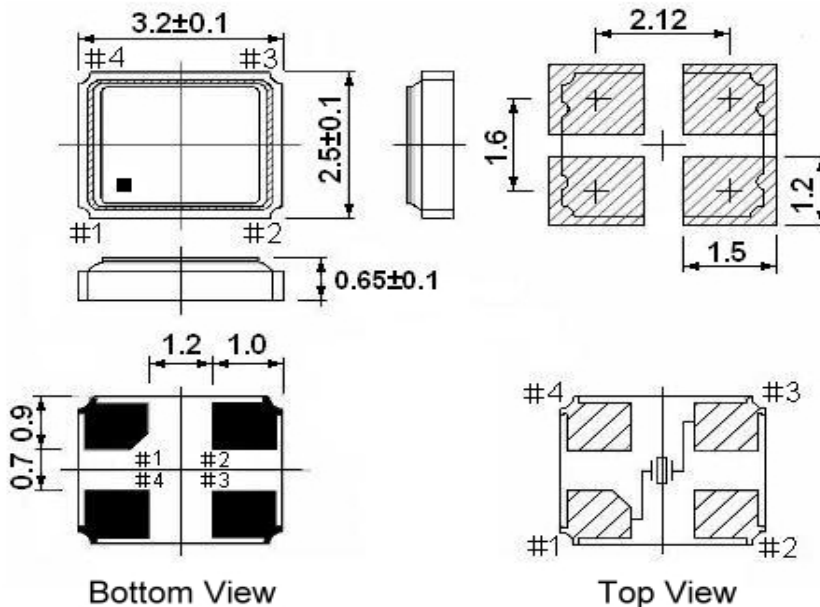
$y$   
Year Code (last digit of year)

$ww$   
Week Code

$v$   
Factory Code

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

#### Recommended Land Pattern



**\*\* 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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### PACKING

