




**SPECIFICATION FOR APPROVAL**

CUSTOMER \_\_\_\_\_  
 NOMINAL FREQUENCY \_\_\_\_\_ 38.400000 MHz \_\_\_\_\_  
 PRODUCT TYPE \_\_\_\_\_ **TYPE FW 2.0x1.6 SEAM SEALED CRYSTAL** \_\_\_\_\_  
 SPEC. NO. ( P/N ) \_\_\_\_\_ FW3840001 \_\_\_\_\_  
 CUSTOMER P/N \_\_\_\_\_  
 ISSUE DATE \_\_\_\_\_ November 21, 2012 \_\_\_\_\_  
 VERSION \_\_\_\_\_ D \_\_\_\_\_

APPROVED	PREPARED	QA
		
<b>APPROVED BY CUSTOMER :</b>		<b>AVL Status</b>
Please return one copy with approval to PSE-TW		

**PSE Technology Corporation**

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

\*\*\* A company of  **PERICOM Semiconductor Corporation** \*\*\*

# TYPE FW 2.0x1.6 SEAM SEALED CRYSTAL

***FW3840001***

VER. D 21-Nov-12

## VERSION HISTORY

Version No.	Version Date	Customer Receipt Date	Supplier Receipt Date	Description	Notes
A	Sep.4,2008			Initial Release	
B	Apr.20,2010			Revise Format	
C	Sep.24,2010			New Logo	
D	Nov.21,2012			Changed tolerance in mechanical drawing & Updated Suggested IR Reflow Profile	



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### ELECTRICAL SPECIFICATIONS

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	Fn	38.400000	MHz	
Mode of Oscillation	MO	AT Cut-Fundamental		
Calibration Load Capacitance	CL	9	pF	
Calibration Tolerance	FL	±10	ppm	at 25°C±3°C
Operating Temperature Range	TR	-20 to +70	°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	
Equivalent Series Resistance	ESR	50	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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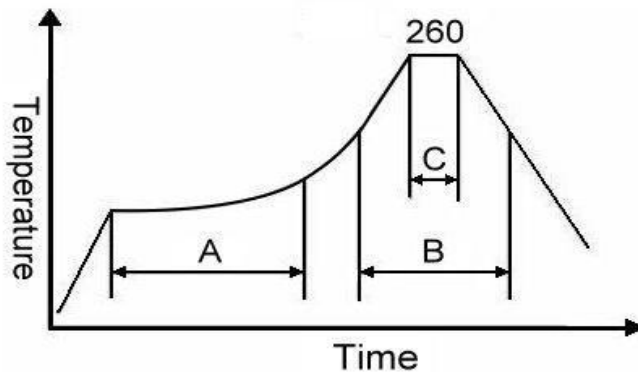
## RELIABILITY SPECIFICATIONS

### MECHANICAL AND ENVIRONMENTAL RATINGS:

- a) FINE LEAK TEST: JESD22-A109 (Condition 1A)  
( $3 \times 10^{-9}$  Pa m<sup>3</sup>/s)
- 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

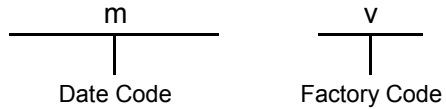
For soldering reflow profile and reliability test ratings go to: <http://www.pericom.com/pdf/sre/reflow.pdf>

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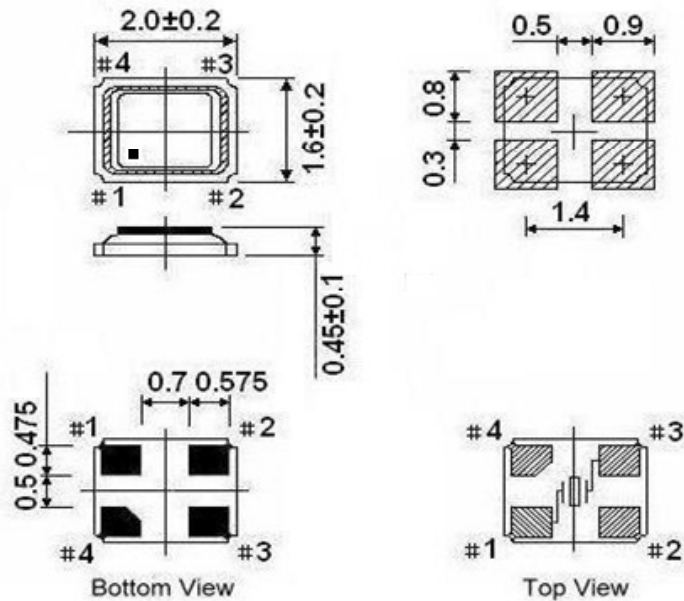
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## MARKING



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



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

**Note:**

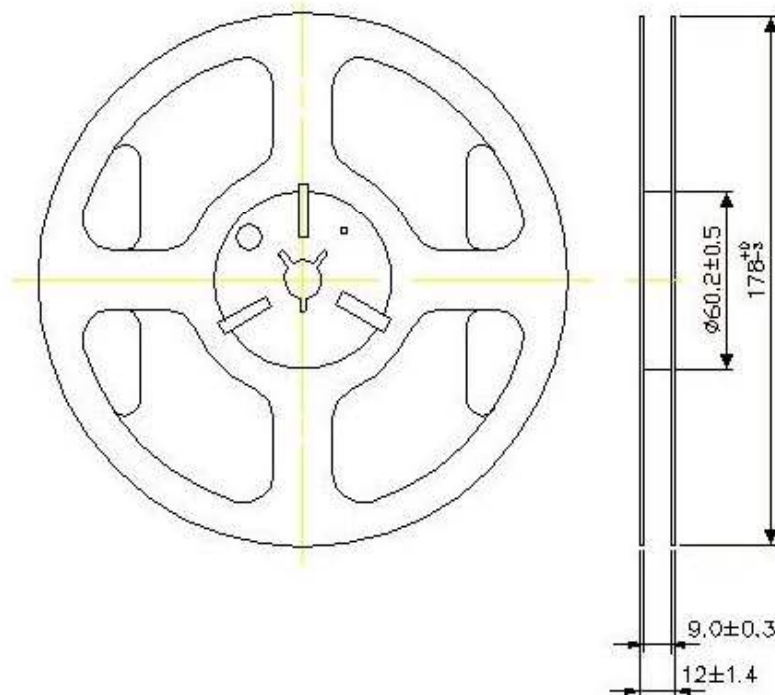
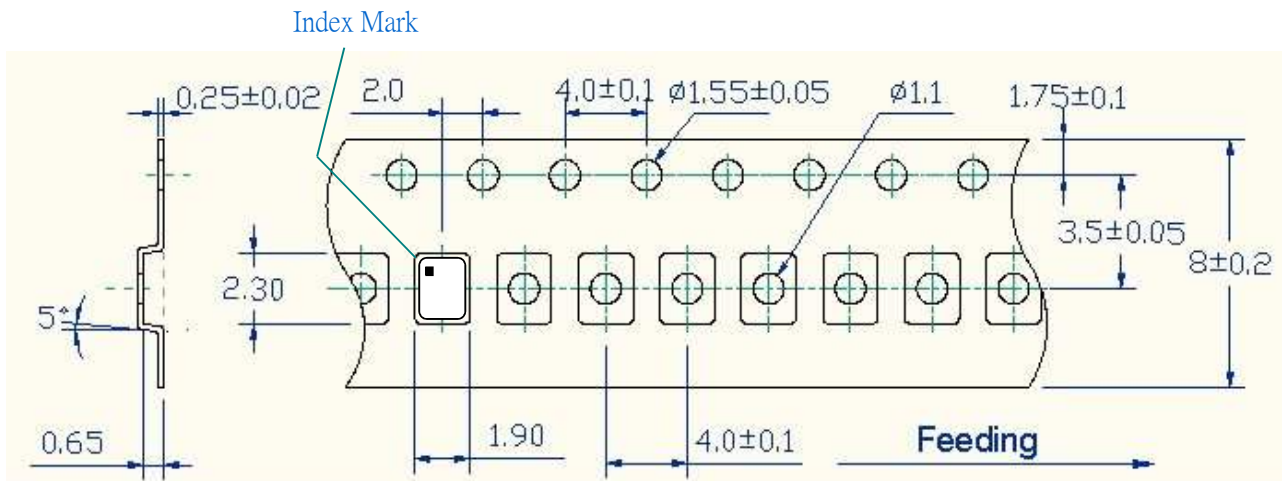
1. The marking dot denotes Pin#1.
2. Pin positions of the drawing is only for reference, and the Pin with chamfer is based on the real product.

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## Tape & Reel



1. 230mm minimum leader 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

