



**PSE Technology Corporation**

**SPECIFICATION FOR APPROVAL**

CUSTOMER \_\_\_\_\_

NOMINAL FREQUENCY \_\_\_\_\_ 38.400000 MHz \_\_\_\_\_

PRODUCT TYPE \_\_\_\_\_ **TYPE FW 2.0x1.6 SEAM SEALED CRYSTAL** \_\_\_\_\_

SPEC. NO. ( P/N ) \_\_\_\_\_ FW384WFIN1 \_\_\_\_\_

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

ISSUE DATE \_\_\_\_\_ June 22, 2016 \_\_\_\_\_

VERSION \_\_\_\_\_ A \_\_\_\_\_

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** \*\*\*

Pericom Internal Reference NO. FW3840024Z

# TYPE FW 2.0x1.6 SEAM SEALED CRYSTAL

**FW384WFIN1**

VER. A 22-Jun-16

## VERSION HISTORY

Verision No.	Version Date	Customer Receipt Date	Supplier Receipt Date	Description	Notes
A	Jun.22,2016			Initial Release	



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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	7	pF	
Calibration Tolerance	FL	±10	ppm	at 27°C±3°C
Operating Temperature Range	TR	-30 to +90	°C	
Frequency Stability (Frequency Deviation over the Operating Temperature Range)	F/T	±12	ppm	Reference to the Frequency at 27°C
Operating Drive Level		10	μW	
Maximum Drive Level		200	μW	Max.
Equivalent Series Resistance	ESR	60	Ω	Max
Shunt Capacitance	C0	2	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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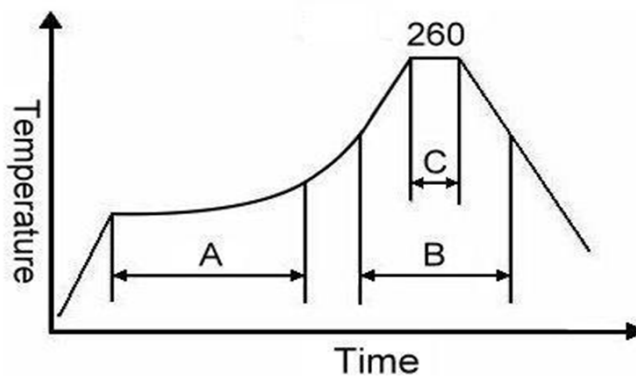
## RELIABILITY SPECIFICATIONS

### 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

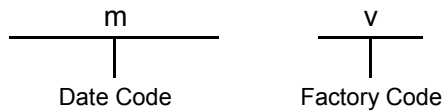
For soldering reflow profile and reliability test ratings go to: <http://www.pericom.com/pdf/sre/reflow.pdf>

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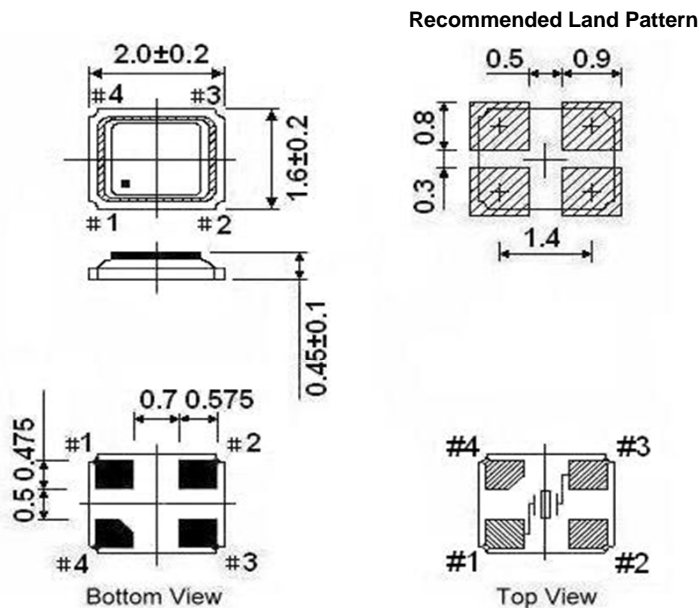
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### MARKING



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



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

#### Notes:

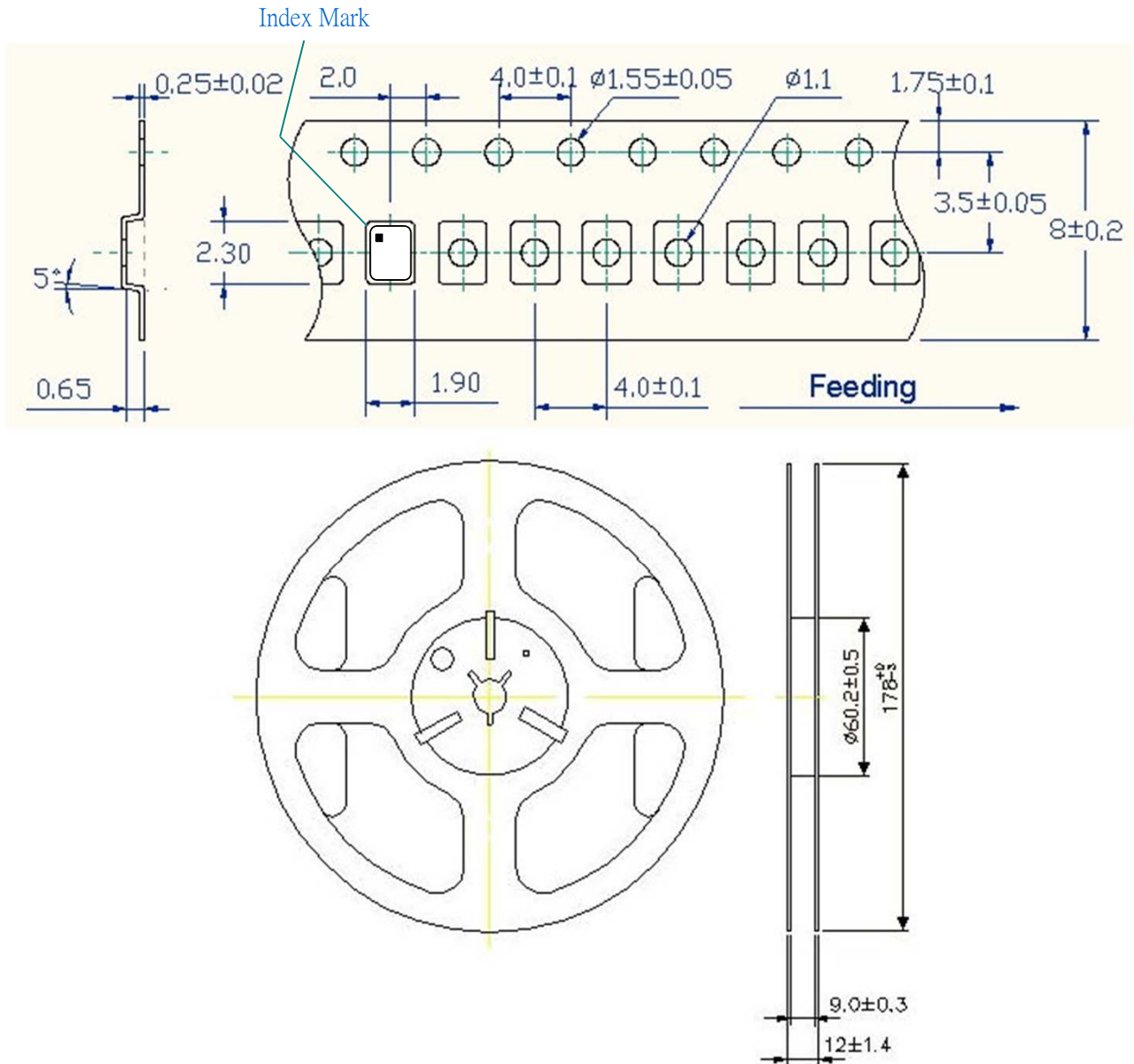
1. Package drawings are for reference only, and the appearances of objects may vary. Actual packages are based on the real product.
2. The marking dot denotes Pin#1.
3. The position and shape of the chamfer pin may vary and are based on the real product.

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### Tape & Reel



1. 230mm minimum 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

