

PSE Technology Corporation

SPECIFICATION FOR APPROVAL

CUSTOMER	
NOMINAL FREQUENCY	16.000000 MHz
PRODUCT TYPE	TYPE FL 3.2x2.5 SEAM SEALED CRYSTAL
PART NUMBER	FL1600087
CUSTOMER P/N	
ISSUE DATE	May 2, 2012
VERSION	F

APPROVED	PREPARED	QA
		
APPROVED BY CUSTOMER		
Please return one copy with approval to PSE-TW		

PSE Technology Corporation

No.2, Tzu-Chiang 5th Rd., Chung Li Industrial Park,
 Chung Li City, Taoyuan County, Taiwan (R.O.C.)
 TEL:886-3-451-8888
 FAX:886-3-461-3865
<http://www.saronix-ecera.com.tw/>

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

A Company of PERICOM Semiconductor Corporation

TYPE FL 3.2x2.5 SEAM SEALED CRYSTAL

FL1600087

VER.F 02-MAY-12

VERSION HISTORY

Version No.	Version Date	Customer Receipt Date	Supplier Receipt Date	Description	Notes
A	Apr. 9, 2012			Initial Release	
B	Apr. 13, 2012			Added individual specs in the note for Frequency Stability	
C	Apr. 18, 2012			Change note of aging spec from 6 years to 10 years	
D	Apr. 24, 2012			Changed Operating Temperature Range from 0~50°C to 0~85°C & updated the note	
E	Apr. 25, 2012			Added note of Calibration tolerance:Including $\pm 0.1\text{pF}$ CL changes	
F	May. 2, 2012			Revised note of Calibration Tolerance: Including $\pm 1\text{pF}$ CL changes	

TYPE FL 3.2x2.5 SEAM SEALED CRYSTAL

FL1600087

VER.F 02-MAY-12

ELECTRICAL SPECIFICATIONS

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	Fn	16.000000	MHz	
Mode of Oscillation	MO	AT Cut-Fundamental		
Calibration Load Capacitance	CL	20	pF	
Calibration Tolerance	FL	± 15	ppm	at 25°C±3°C. Including ±1pF CL changes
Operating Temperature Range	TR	0 to 85	°C	
Frequency Stability(Frequency Deviation over the Operating Temperature Range)	F/T	± 15	ppm	Reference to the Frequency at 25°C
Operating Drive Level		10	μW	
Maximum Drive Level		250	μW	
Equivalent Series Resistance	ESR	28.9	Ω	Max.
Shunt Capacitance	C0	1.5	pF	Max.
Aging at 25°C		± 3	ppm	Max, 1st year
Aging at 25°C		± 10	ppm	Max, 10 years
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).

Note: The Overall Frequency Deviation is the sum of Calibration Tolerance, Frequency Stability over the Operating Temperature Range and the Aging.

TYPE FL 3.2x2.5 SEAM SEALED CRYSTAL

FL1600087

VER.F 02-MAY-12

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

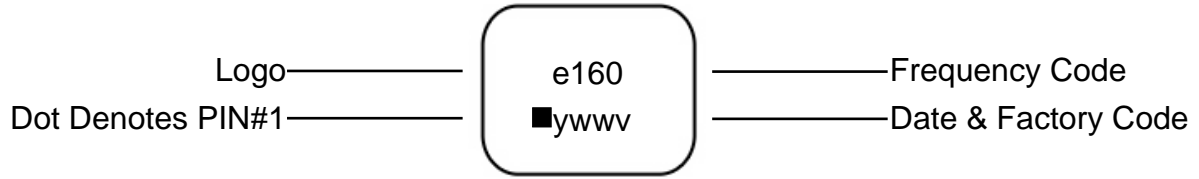
For soldering reflow profile and reliability test ratings go to: <http://www.pericom.com/pdf/sre/reflow.pdf>

TYPE FL 3.2x2.5 SEAM SEALED CRYSTAL

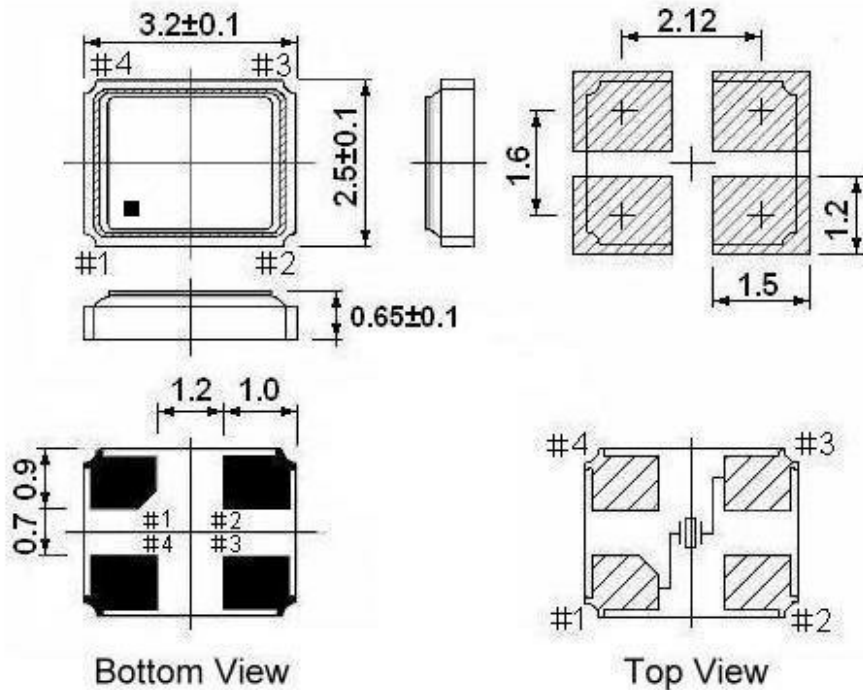
FL1600087

VER.F 02-MAY-12

MARKING



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



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

Note:

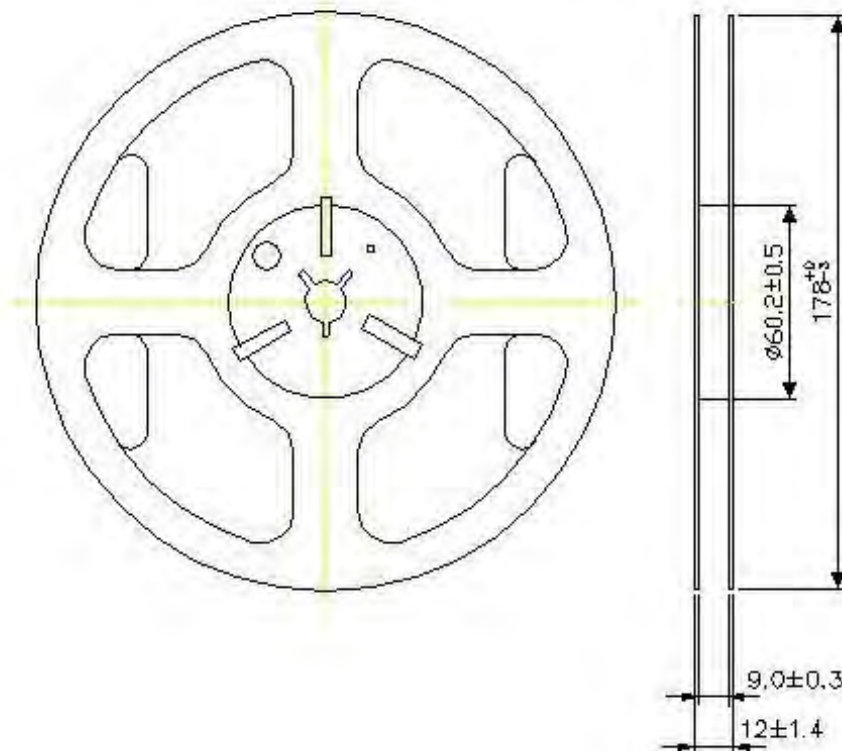
1. The marking dot denotes Pin#1.
2. Pin positions of the drawing is only for reference, and the Pin with chamfer is based on the real product.

TYPE FL 3.2x2.5 SEAM SEALED CRYSTAL

FL1600087

VER.F 02-MAY-12

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.

TYPE FL 3.2x2.5 SEAM SEALED CRYSTAL

FL1600087

VER.F 02-MAY-12

PACKING

