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With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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## PSE Technology Corporation

### **SPECIFICATION FOR APPROVAL**

CUSTOMER \_\_\_\_\_

NOMINAL FREQUENCY 12.288000 MHz

HOLDER TYPE TYPE FK 3.2X2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

SPEC. NO. ( P/N ) FK1220016Z

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

ISSUE DATE November 11, 2013

VERSION A

APPROVED	PREPARED	QA
APPROVED BY CUSTOMER :		AVL Status

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 FK 3.2X2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

**FK1220016Z**

VER. A 11-Nov-13

## VERSION HISTORY

# TYPE FK 3.2X2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

**FK1220016Z**

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## ELECTRICAL SPECIFICATIONS

SRe Part Number : **FK1220016Z**

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	F <sub>0</sub>	12.288000	MHz	
Frequency Stability	F <sub>T</sub>	± 50	ppm	**See note
Operating Temperature Range	T <sub>R</sub>	-40 to +85	°C	
Supply Voltage	V <sub>DD</sub>	+1.8 ± 5.0%	V	
Logic Type	L <sub>T</sub>	LVCMOS		
Supply Current, Output Enabled	I <sub>DD/OE</sub>	4	mA	Max.
Supply Current, Output Disabled	I <sub>DD/OD</sub>	10	μA	Max.
Duty Cycle (Symmetry)	D <sub>C/SY</sub>	45 / 55	%	Measured 50% of Waveform
Rise / Fall Time	T <sub>R</sub> /T <sub>F</sub>	4	ns	Max. measured 20/80% of Waveform
Output Voltage "0" Level	V <sub>OL</sub>	10% V <sub>DD</sub>	V	Max.
Output Voltage "1" Level	V <sub>OH</sub>	90% V <sub>DD</sub>	V	Min.
Output Load	C <sub>L</sub>	15	pF	Max
Jitter, Phase	RMS	1	ps	Max, 12KHz ~ 5MHz Frequency Band
Jitter, Accumulated	RMS(1- $\sigma$ )	5	ps	Max, 20,000 Consecutive Periods
Jitter, Peak to Peak	P <sub>k</sub> -P <sub>k</sub>	30	ps	Max, 100,000 Random Periods
Start Up Time		10	ms	Max.
Storage Temperature Range		-55 to +125	°C	

※ 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).

\*\*Stability includes all combinations of Operating Temperature, Load changes, rated Input (Supply) Voltage changes, Initial Calibration Tolerance (25°C), Aging (1 year at 25°C Average Effective Ambient Temperature), Shock and Vibration.

### Output Enable / Disable Function

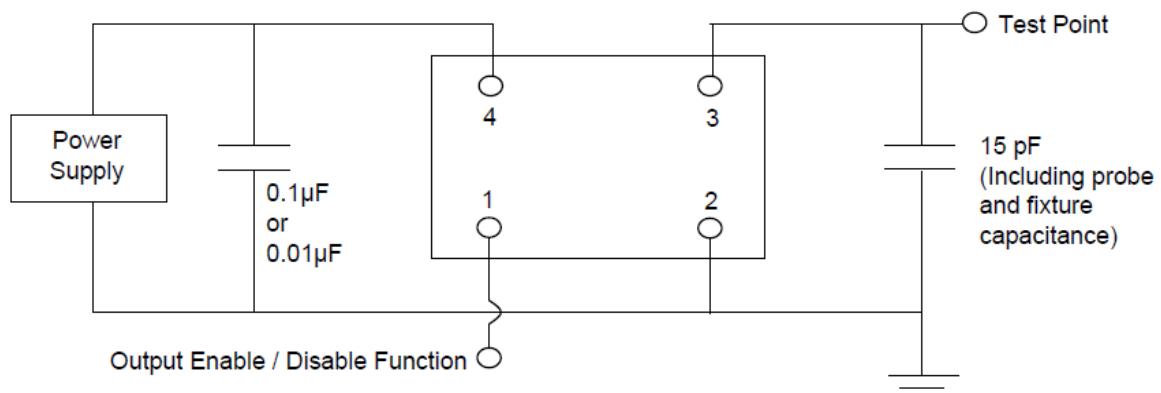
Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (Pin1), Output Enable	0.7V <sub>DD</sub>			V	Or Open
Input Voltage (Pin1), Output Disable (low power standby)			0.3V <sub>DD</sub>	V	Output is Hi-Z
Internal Pullup Resistance	30			KΩ	
Output Disable Delay			50	ns	

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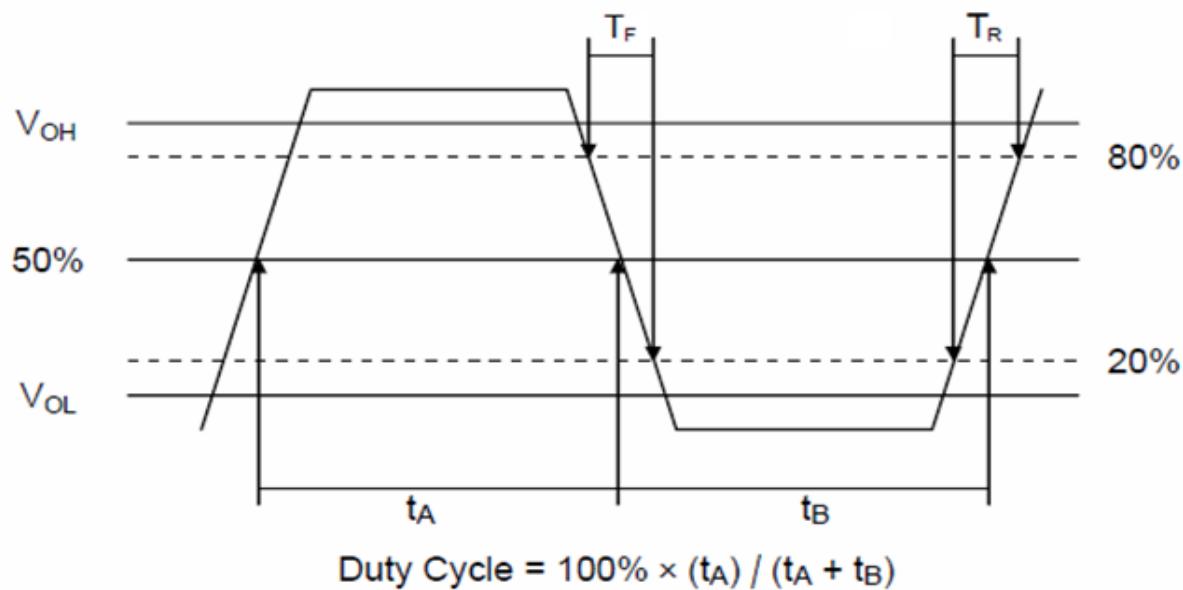
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## TEST CIRCUIT



## OUTPUT WAVEFORM



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## RELIABILITY SPECIFICATIONS

### ENVIRONMENTAL:

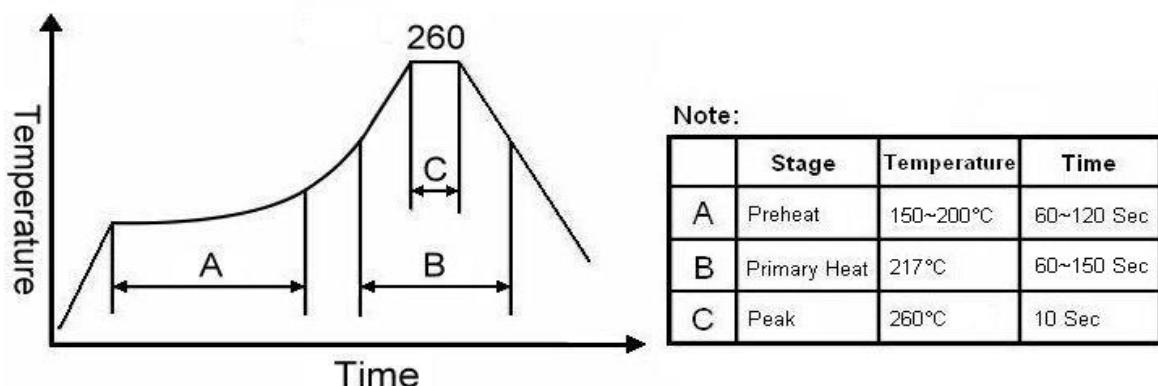
- a) THERMAL SHOCK: MIL-STD-883, Method 1011, Condition A
- b) MOISTURE RESISTANCE: MIL-STD-883, Method 1004
- c) VIBRATION: MIL-STD-883, Method 2007, Condition A
- d) RESISTANCE TO SOLDERING HEAT: J-STD-020D Table 5-2 Pb-free devices  
(except 2 cycles max)
- e) HAZARDOUS SUBSTANCE: Pb - free and RoHS Compliant.

### MECHANICAL:

- a) SHOCK: MIL-STD-883, Method 2002, Condition B
- b) SOLDERABILITY: JESD22-B102-D Method 2 (Preconditioning E)
- c) TERMINAL STRENGTH: MIL-STD-883, Method 2004, Test Condition D
- d) GROSS LEAK: MIL-STD-883, Method 1014, Condition C
- e) FINE LEAK: MIL-STD-883, Method 1014, Condition A2,  $R1=2\times10^{-8}$  atm cc/s
- f) SOLVENT RESISTANCE: MIL-STD-202, Method 215

## SUGGESTED IR REFLOW PROFILE

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



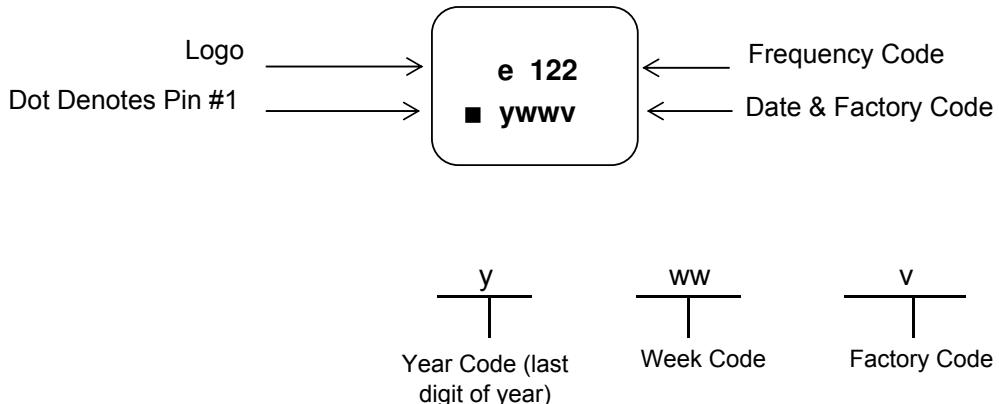
For soldering reflow profile and reliability test ratings go to: <http://www.pericom.com/pdf/sre/reflow.pdf>

# TYPE FK 3.2X2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

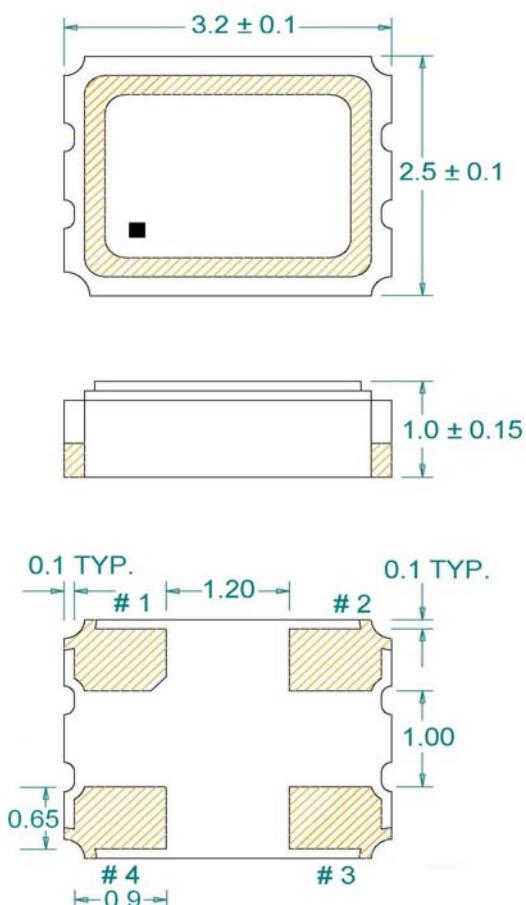
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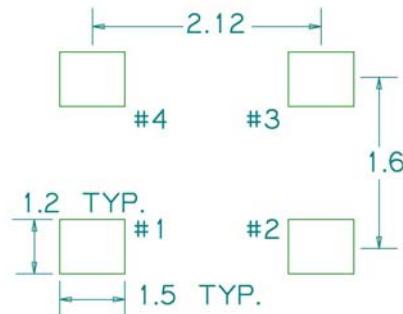
## MARKING



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



### Recommended Land Pattern\*



\*External high-frequency power decoupling is recommended (see test circuit for minimum recommendation). To ensure optimal performance, do not route traces beneath the package.

Pin	Function
1	OE
2	Ground
3	Clock Output
4	V <sub>DD</sub>

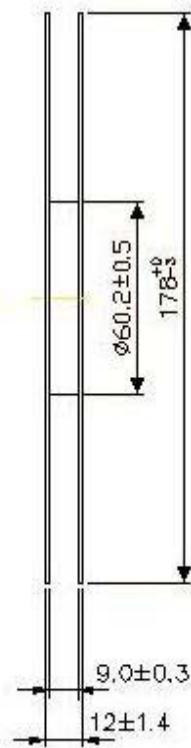
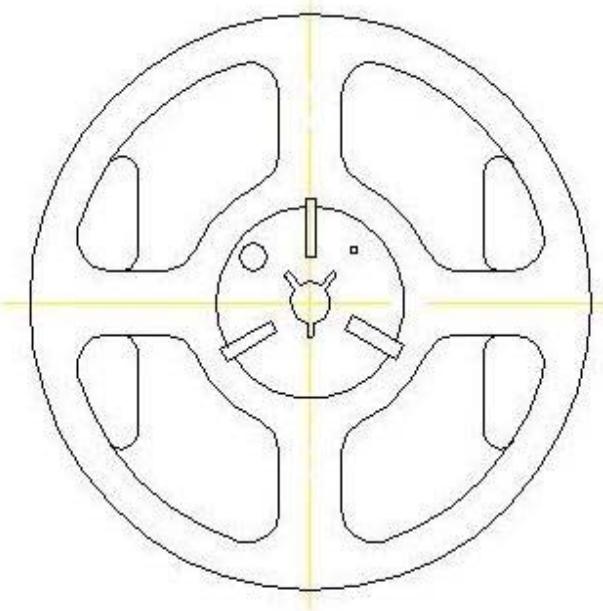
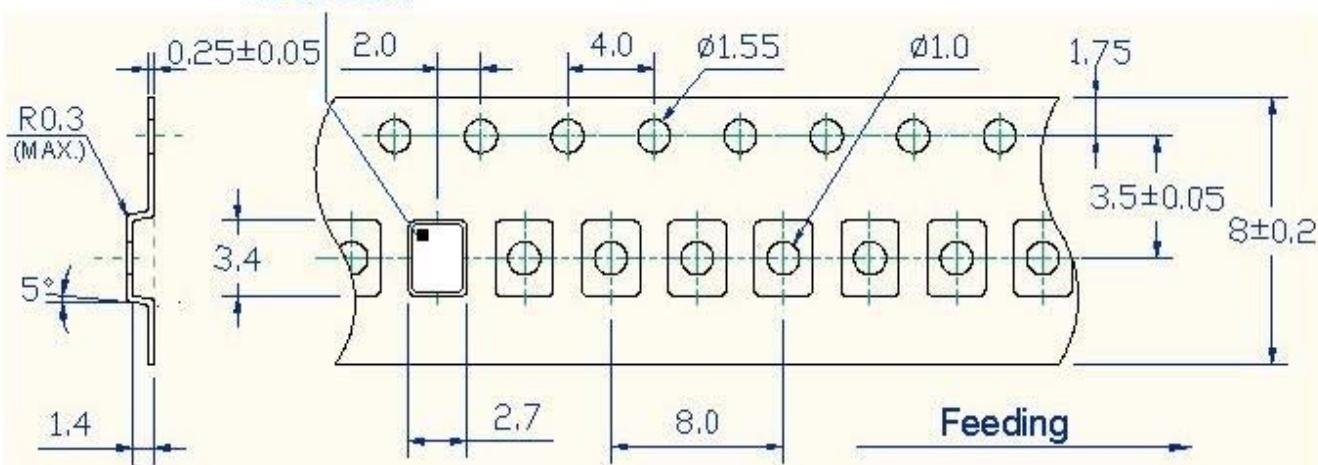
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## TAPE&REEL

Index Mark



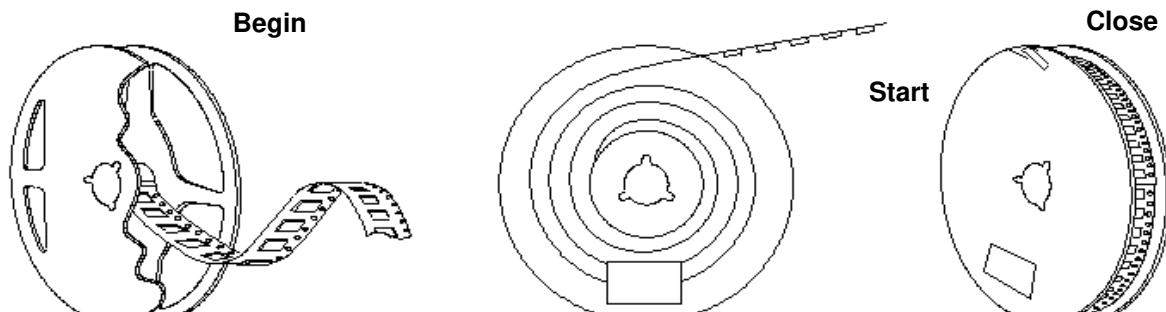
1. 230mm minimum leafer which consist of carrier and/or tape followed by a minimum of 160mm of empty carrier tape sealed with cover tape.
2. 160mm minimum trailer of empty carrier tape sealed with cover tape.

# TYPE FK 3.2X2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

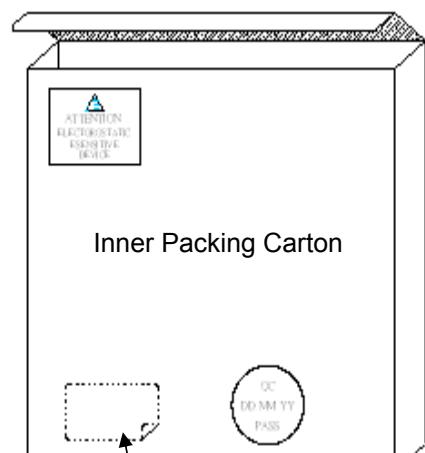
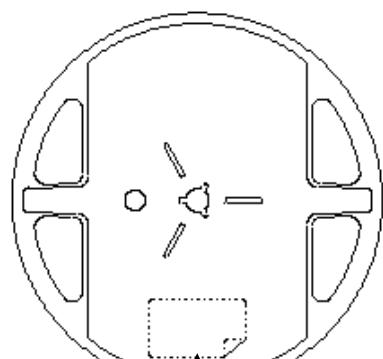
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## PACKING



3000pcs-Product Tape



Storeroom Label

