



# PSE Technology Corporation

## SPECIFICATION FOR APPROVAL

CUSTOMER \_\_\_\_\_

NOMINAL FREQUENCY 24.000000 MHz

PRODUCT TYPE TYPE WT 3.2X2.5 TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR

SPEC. NO. ( P/N ) WT3251F0024.000000

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

ISSUE DATE November 10, 2012

VERSION 02

| APPROVED                                       | PREPARED      | QA           |
|--|---------------|--------------|
| <i>Alan Yang</i>                               | <i>Brenda</i> | <i>Becky</i> |
| 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 \*\*\*

Pericom Internal Reference NO. WT3524001A



# TYPE WT 3.2X2.5 TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR

**WT3251F0024.000000**

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## ELECTRICAL SPECIFICATIONS

**SRe Part Number : WT3251F0024.000000**

| Item                           | Symbol          | Specifications   | Units  | Notes  |
|--------------------------------|-----------------|------------------|--------|--|
| Nominal Frequency              | F <sub>o</sub>  | 24.000000        | MHz    |  |
| Operating Temperature Range    | TR              | -30 to +85       | °C     |  |
| Storage Temperature Range      |                 | -40 to +85       | °C     |  |
| Supply Voltage                 | V <sub>DD</sub> | +3.3 ± 5.0%      | V      |  |
| Frequency Stability            | FT              | ± 0.5            | ppm    | vs. Temperature (Refer to the mid-point between minimum and maximum frequency values over the specified temperature range) |
| Frequency Stability            |                 | ± 0.2            | ppm    | vs. Load varied 10pF//10kΩ±10%   |
| Frequency Stability            |                 | ± 0.1            | ppm    | vs. Supply Voltage varied V <sub>DD</sub> ±5% at 25°C  |
| Frequency Tolerance            |                 | ± 2.0            | ppm    | Max. After 2 times reflow (Refer to nominal frequency)   |
| Frequency Slope                |                 | ± 0.3            | ppm/°C | Max. (measurement every 2°C from -30°C to +85°C )  |
| Static Temperature Hysteresis  |                 | ± 0.6            | ppm    | Max.   |
| Aging                          |                 | ±1               | ppm    | per year at 25°C   |
| Logic Type                     | LT              | Clipped Sinewave |        |  |
| Supply Current                 | I <sub>DD</sub> | 2                | mA     | Max.   |
| Start Up Time v.s Output Level |                 | 2.5              | msec   | Max, 90% of specified output level   |
| Output Voltage                 |                 | 0.8 to 1.4       | Vp-p   |  |
| Output Load Resistance         |                 | 10               |        | 9KΩ Min / 11KΩ Max   |
| Output Load Capacitance        |                 | 10               | pF     | 9pF Min / 11pF Max   |
| Harmonics                      |                 | -7               | dBc    | Max.   |
| Phase Noise                    |                 | -128             | dBc/Hz | Max, at 1kHz offset  |

※ 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).

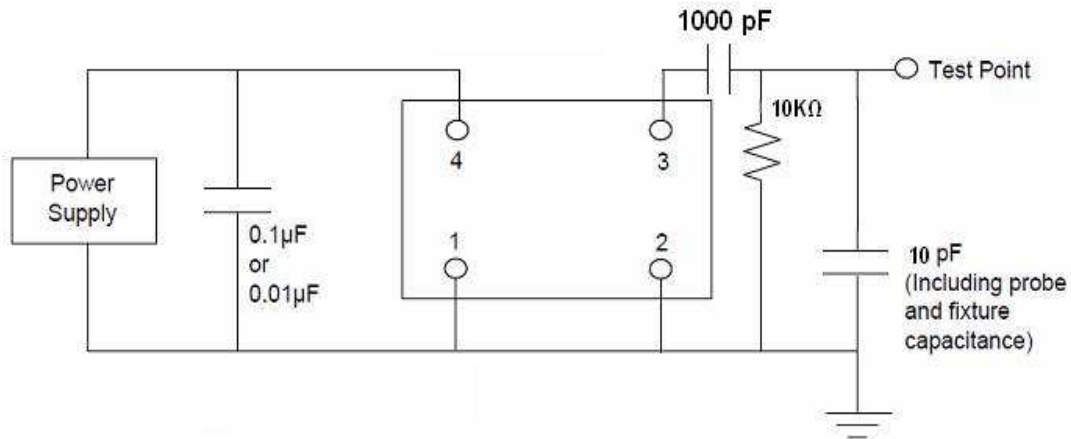


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## TEST CIRCUIT



## RELIABILITY SPECIFICATIONS

### ENVIRONMENTAL:

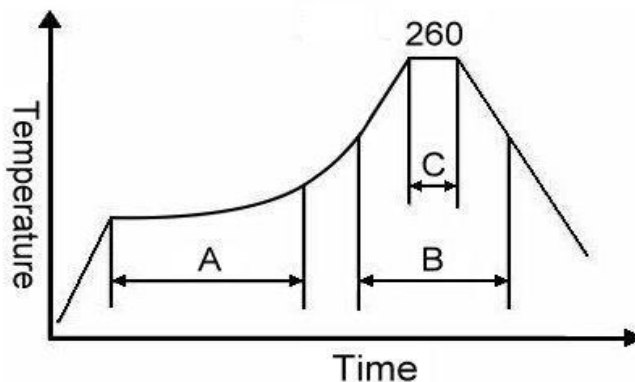
- THERMAL SHOCK: MIL-STD-883, Method 1011, Condition A
- MOISTURE RESISTANCE: MIL-STD-883, Method 1004
- VIBRATION: MIL-STD-883, Method 2007, Condition A
- RESISTANCE TO SOLDERING HEAT: J-STD-020D Table 5-2 Pb-free devices (except 2 cycles max)
- HAZARDOUS SUBSTANCE: Pb - free and RoHS Compliant.

### MECHANICAL:

- SHOCK: MIL-STD-883, Method 2002, Condition B
- SOLDERABILITY: JESD22-B102-D Method 2 (Preconditioning E)
- TERMINAL STRENGTH: MIL-STD-883, Method 2004, Test Condition D
- GROSS LEAK: MIL-STD-883, Method 1014, Condition C
- FINE LEAK: MIL-STD-883, Method 1014, Condition A2,  $R1=2 \times 10^{-8}$  atm cc/s
- SOLVENT RESISTANCE: MIL-STD-202, Method 215

## SUGGESTED IR REFLOW PROFILE

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



Note:

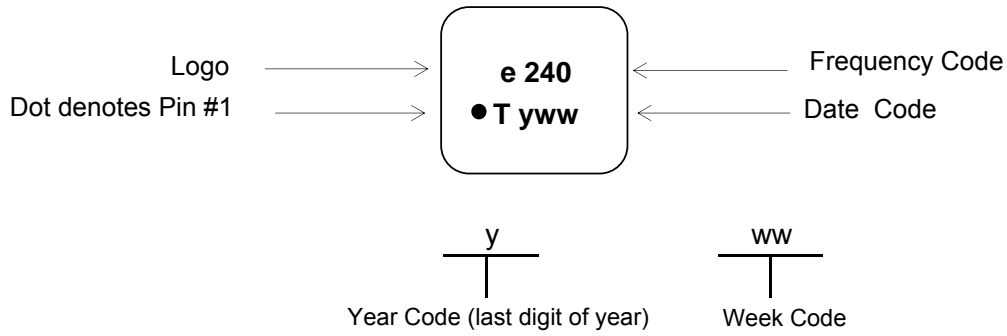
|   | Stage        | Temperature | Time       |
|---|--------------|-------------|------------|
| A | Preheat      | 150~200°C   | 60~120 Sec |
| B | Primary Heat | 217°C       | 60~150 Sec |
| C | Peak         | 260°C       | 10 Sec     |

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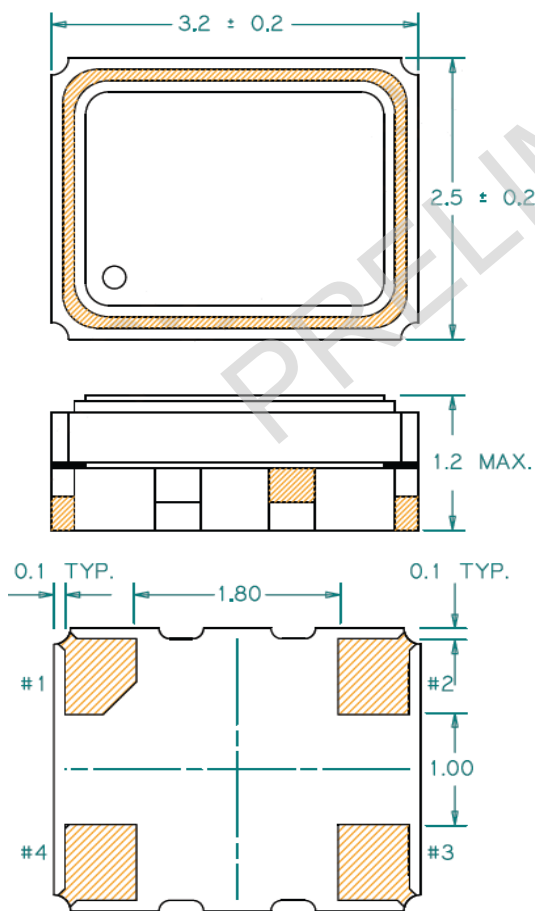
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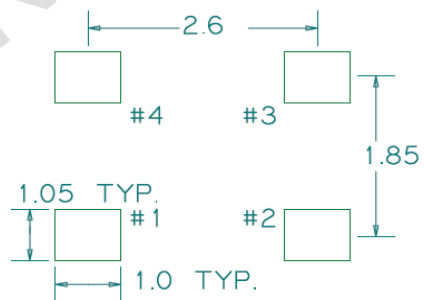
## MARKING



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



Recommended Land Pattern:



### Pin Functions:

| Pin | Function        |
|-----|-----------------|
| 1   | Ground          |
| 2   | Ground          |
| 3   | Output          |
| 4   | V <sub>DD</sub> |

**\* NOTE**

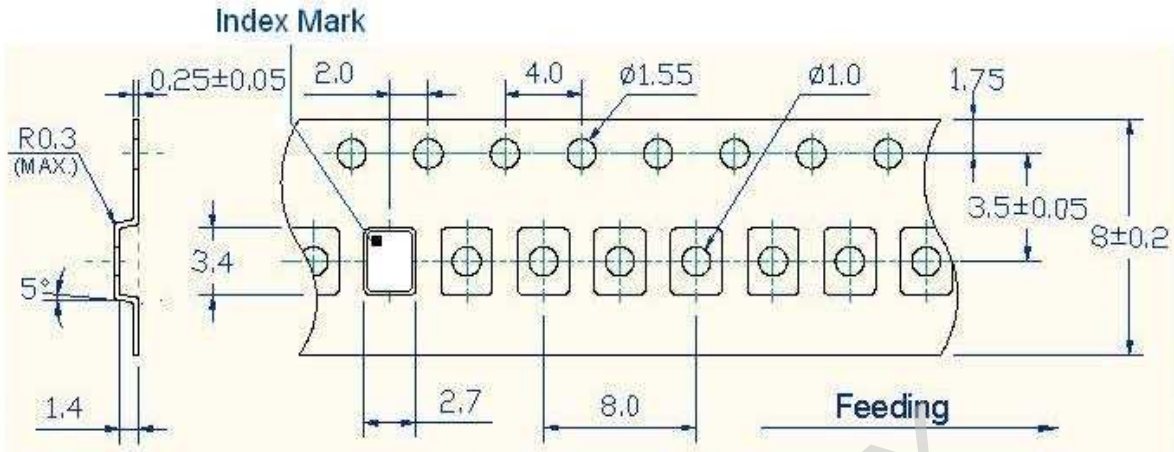
#1 pad. Must be connected to ground on your circuit, otherwise oscillation frequency will shift from the output frequency specified.

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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.

PACKING

