



**THE DATASHEET OF
NX51500001**





PSE Technology Corporation

SPECIFICATION FOR APPROVAL

| | |
|-------------------|--|
| CUSTOMER | _____ |
| NOMINAL FREQUENCY | 50.000000 MHz |
| PRODUCT TYPE | TYPE NX 5.0x3.2 SEAM SEALED CRYSTAL CLOCK OSCILLATOR |
| SPEC. NO. (P/N) | NX51500001 |
| CUSTOMER P/N | _____ |
| ISSUE DATE | January 22, 2016 |
| VERSION | A |

| APPROVED | PREPARED | QA |
|--|----------|------------|
| | | |
| APPROVED BY CUSTOMER : | | AVL Status |
| 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 NX 5.0x3.2 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

NX51500001

VER. A 22-Jan-16

ELECTRICAL SPECIFICATIONS

| Item | Symbol | Specifications | Units | Notes |
|---------------------------------|--------------------------------|----------------------|-------|----------------------------------|
| Nominal Frequency | Fo | 50.000000 | MHz | |
| Frequency Stability | FT | ± 25 | ppm | **See note |
| Operating Temperature Range | TR | -40 to +85 | °C | |
| Supply Voltage | V _{DD} | +3.3 ± 5.0% | V | +3.3V Typ., also support +2.5V |
| Logic Type | LT | LVC MOS | | |
| Supply Current, Output Enabled | I _{DD} /OE | 60 | mA | Max. |
| Supply Current, Output Disabled | I _{DD} /OD | 40 | mA | Max. |
| Duty Cycle (Symmetry) | DC/SY | 45 / 55 | % | Measured 50% of Waveform |
| Rise / Fall Time | T _R /T _F | 3 | ns | Max. measured 20/80% of Waveform |
| Output Voltage "0" Level | V _{OL} | 0.4 | V | Max. |
| Output Voltage "1" Level | V _{OH} | V _{DD} -0.4 | V | Min. |
| Output Load | CL | 15 | pF | Max. |
| Jitter, Phase | RMS | 1 | ps | Max. 12KHz~20MHz Frequency Band |
| Jitter, Accumulated | RMS(1-σ) | 6 | ps | Max, 20,000 Consecutive Periods |
| Jitter, Peak to Peak | Pk-Pk | 40 | ps | Max, 100,000 Random Periods |
| 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 _{DD} | | | V | Or Open |
| Input Voltage (Pin1), Output Disable (low power standby) | | | 0.3V _{DD} | V | Output is Hi-Z |
| Output Disable Delay | | | 100 | ns | |
| Output Enable Delay | | | 100 | ns | |
| Start Up Time | | | 10 | ms | |

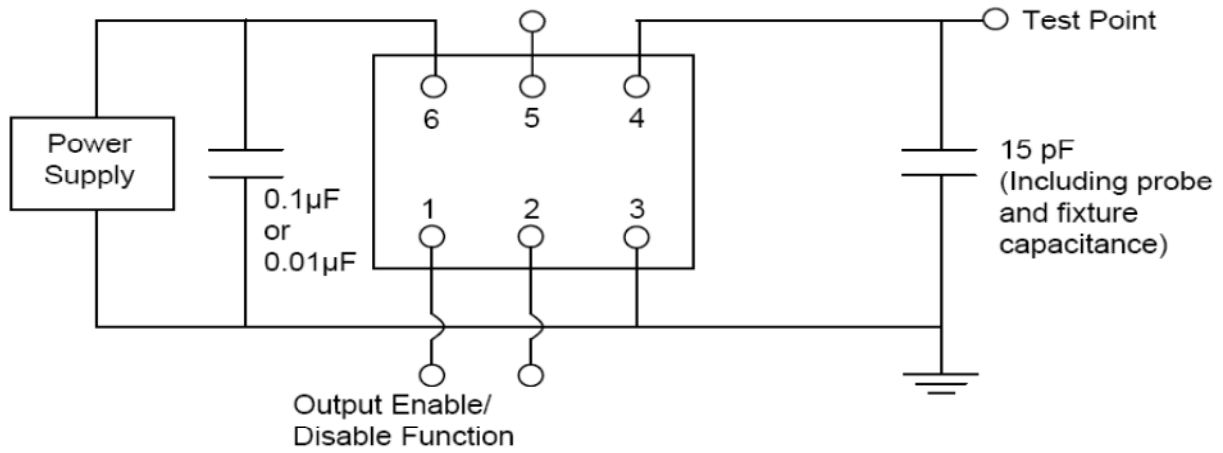


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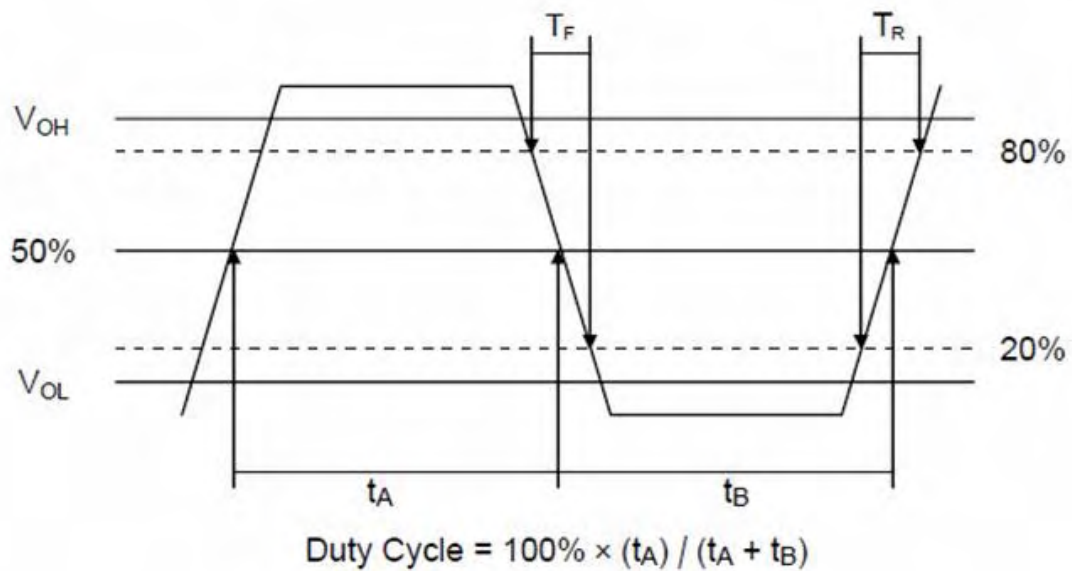
NX51500001

VER. A 22-Jan-16

TEST CIRCUIT



OUTPUT WAVEFORM



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NX51500001

VER. A 22-Jan-16

RELIABILITY SPECIFICATIONS

ENVIRONMENTAL:

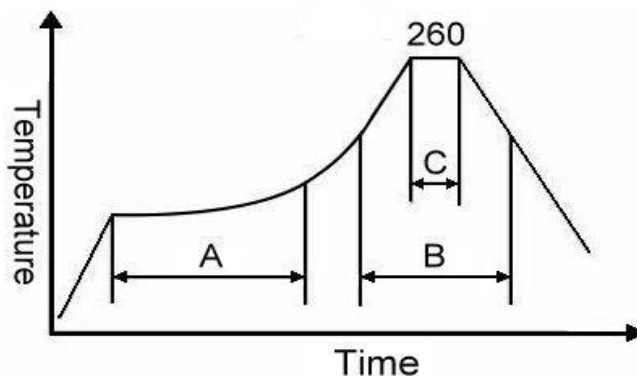
- a) THERMAL SHOCK: MIL-STD-883, Method 1011, Condition A
- b) MOISTURE RESISTANCE: MIL-STD-883, Method 1004
- c) VIBRATION: MIL-STD-883, Method 2007, Condition A
- d) RESISTANCE TO SOLDERING HEAT: J-STD-020D Table 5-2 Pb-free devices (except 2 cycles max)
- e) HAZARDOUS SUBSTANCE: Pb - free and RoHS 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, $R1=2 \times 10^{-8}$ atm cc/s
- f) 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 |

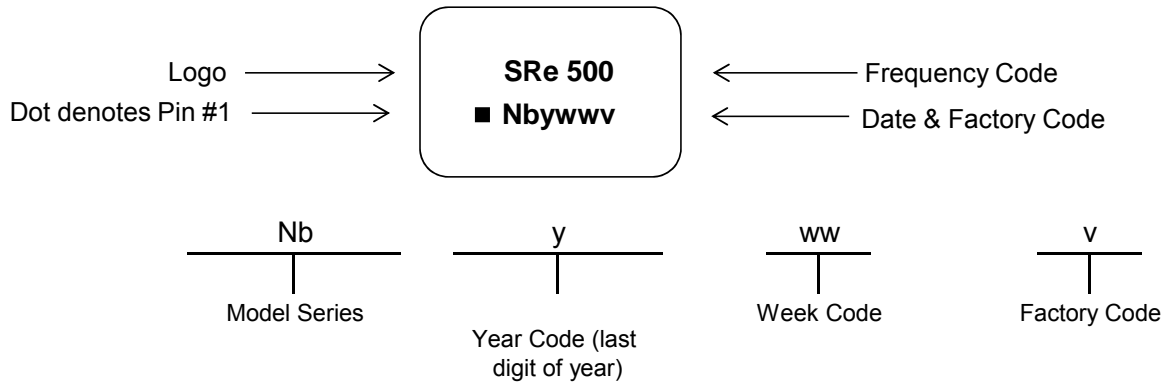
For soldering reflow profile and reliability test ratings go to: <http://www.pericom.com/pdf/sre/reflow.pdf>

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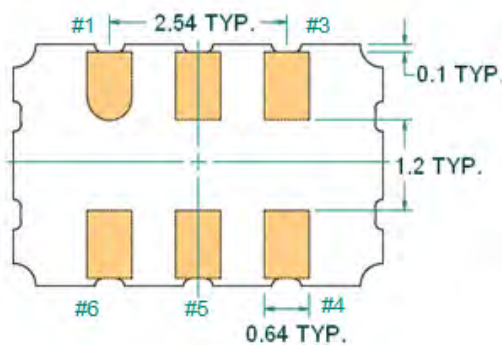
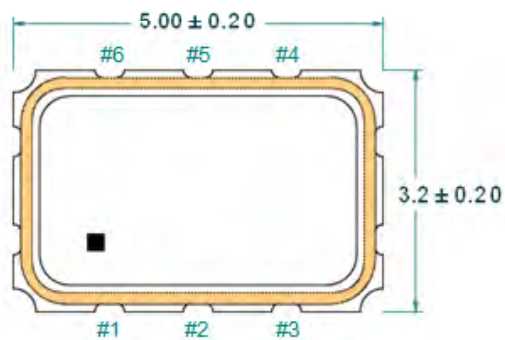
NX51500001

VER. A 22-Jan-16

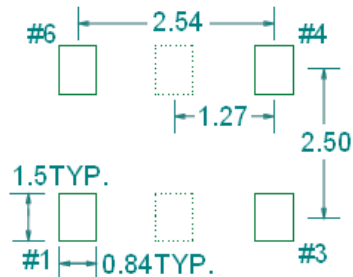
MARKING



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



Recommended Land Pattern*



*Note: pads 2 and 5 are optional (shown as dotted lines). XO's are designed to fit on industry standard, 4 pad layouts.

| Pin | Function |
|-----|-----------------|
| 1 | OE Function |
| 2 | N/C |
| 3 | Ground |
| 4 | Output |
| 5 | N/C |
| 6 | V _{DD} |

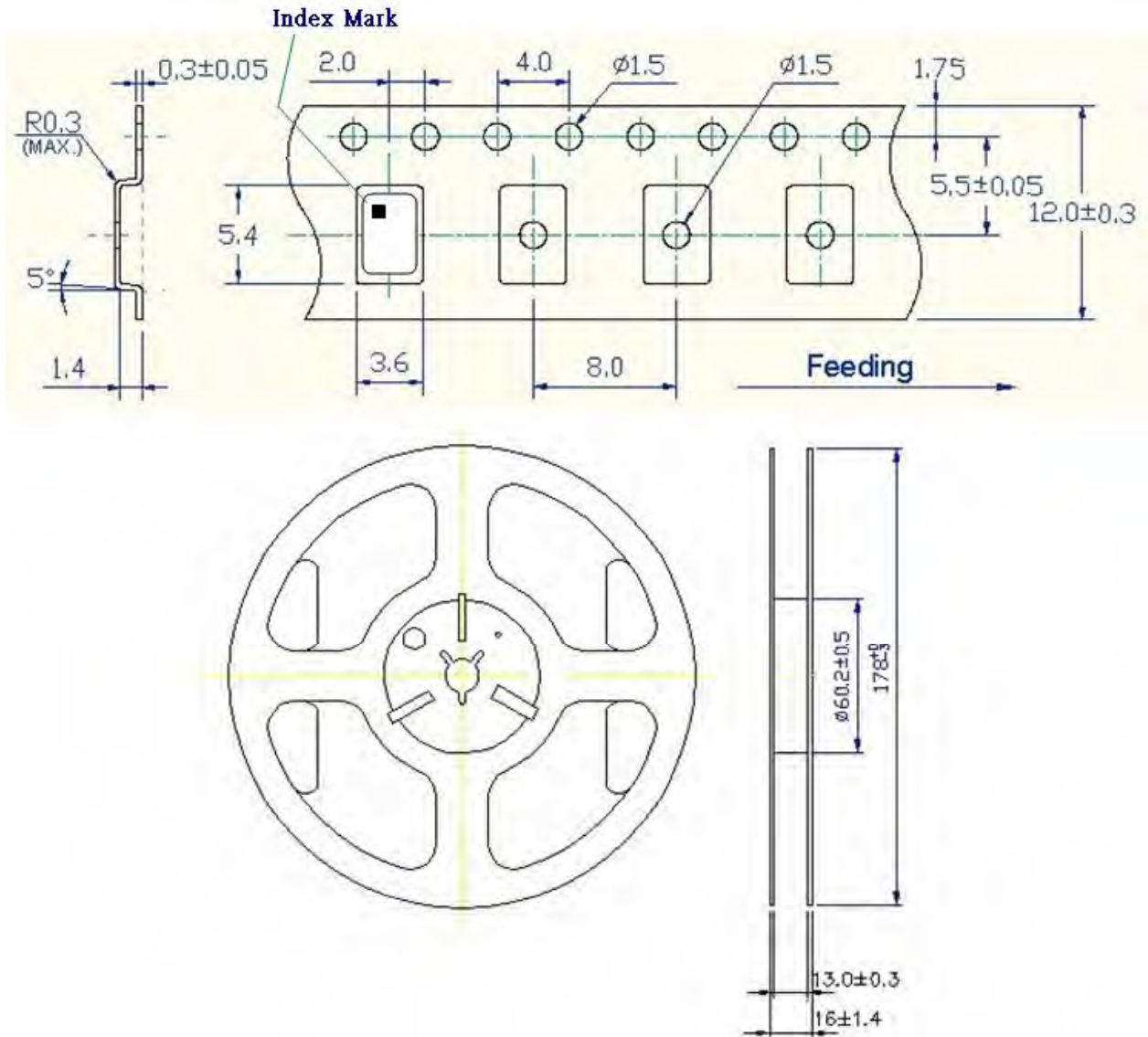
*Extended high frequency power decoupling is recommended (see test circuit for minimum recommendation). To ensure optimal performance, do not route RF traces beneath the package.

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NX51500001

VER. A 22-Jan-16

TAPE&REEL



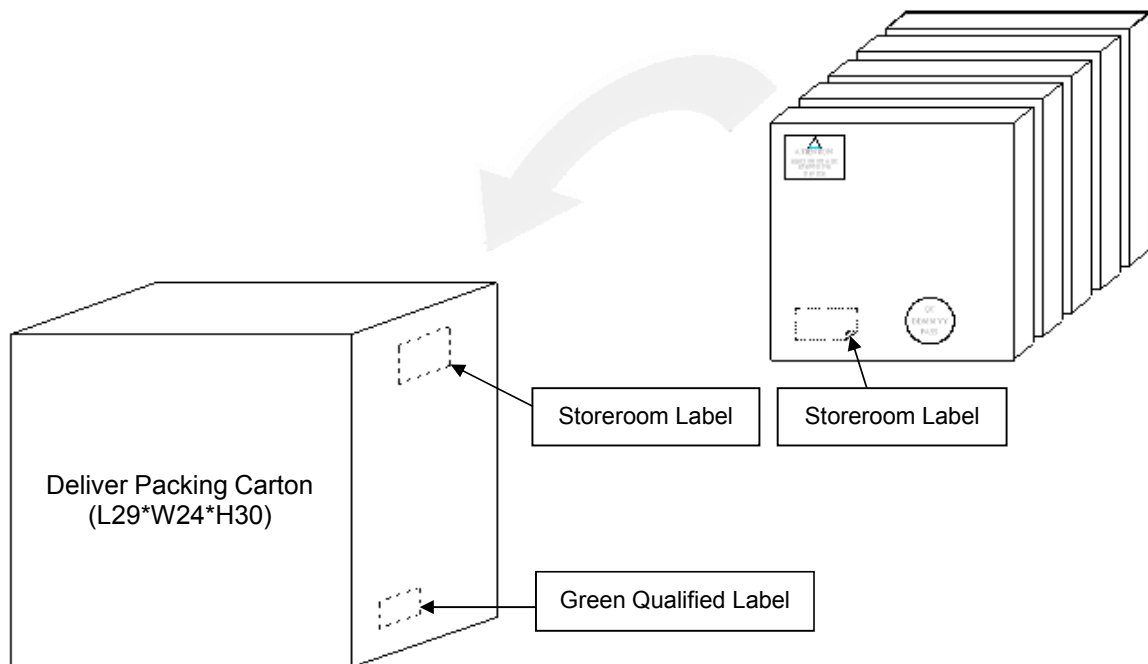
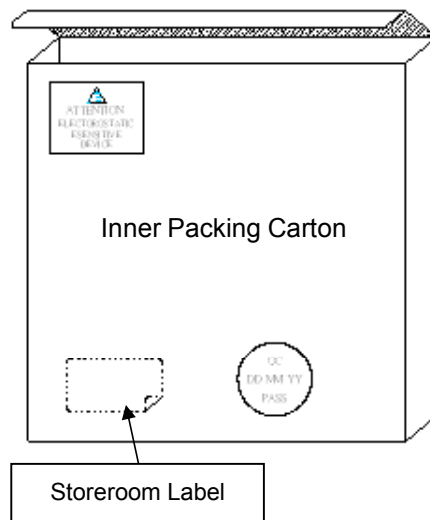
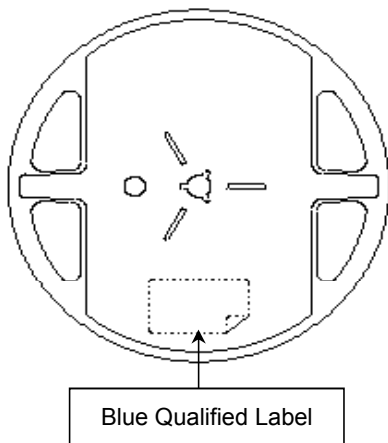
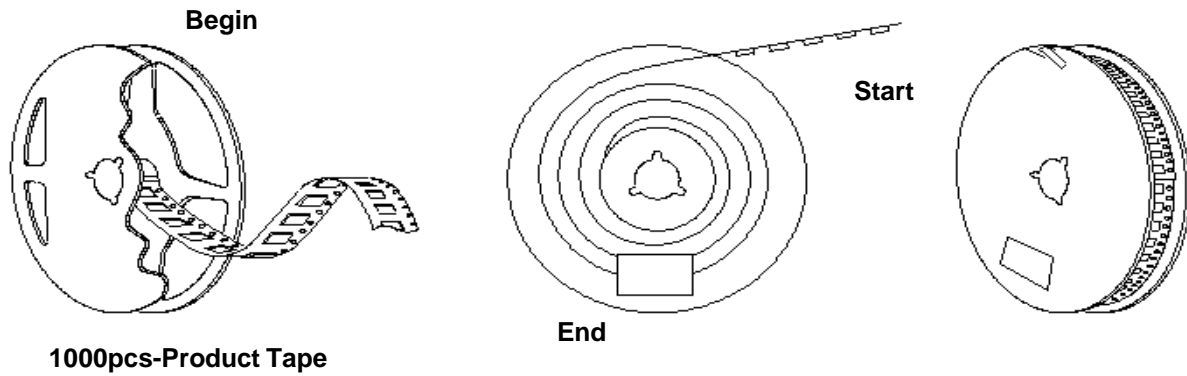
1. 230mm minimum leader which consist of carrier and/or tape followed by a minimum of 160mm of empty carrier tape sealed with cover tape.
2. 160mm minimum trailer of empty carrier tape sealed with cover tape.

TYPE NX 5.0x3.2 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

NX5150001



VER. A 22-Jan-16

PACKING



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