



PSE Technology Corporation

SPECIFICATION FOR APPROVAL

CUSTOMER _____

NOMINAL FREQUENCY 133.333333 MHz

PRODUCT TYPE TYPE NX 5.0x3.2 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

SPEC. NO. (P/N) NX53D3301Z

CUSTOMER P/N _____

ISSUE DATE September 25, 2015

VERSION D

APPROVED	PREPARED	QA
<i>Brenda</i>	<i>Clair</i>	<i>Song Yang</i>
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

NX53D3301Z

VER. D 25-Sep-15

ELECTRICAL SPECIFICATIONS

SRe Part Number : NX53D3301Z

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	F ₀	133.333333	MHz	
Frequency Stability	FT	± 50	ppm	**See note
Operating Temperature Range	TR	-40 to +85	°C	
Supply Voltage	V _{CC}	+3.3 ± 5.0%	V	
Logic Type	LT	Specific common mode differential		
Supply Current, Output Enabled	I _{CC/OE}	70	mA	Max.
Supply Current, Output Disabled	I _{CC/OD}	40	mA	Max.
Duty Cycle (Symmetry)	DC/SY	45 / 55	%	Measured 50% of Waveform
Rise / Fall Time	T _R /T _F	500	ps	Max. measured 20/80% of Waveform
Output Voltage "0" Level	V _{OL}	0 / 0.5	V	Min. / Max.
Output Voltage "1" Level	V _{OH}	1.4	V	Max.
Output Common Model	V _{CM}	0.50 / 0.60 / 0.65	V	Min / Typ / Max.
Differential Output Voltage	V _{OD}	0.99 / 1.32	V	Min. / Max.
Edge Rate		1 / 12	V/ns	Min. / Max., Edge rate = V _{OD} / T _R
Overshoot Voltage	V _{OVS}	+0.2	V	Max., from V _{OH}
Undershoot Voltage	V _{UDS}	-0.2	V	Min., from V _{OL}
Output Load		35Ω shunted to GND		Output requires termination(special case)
Jitter, Phase	RMS	0.4 / 1	ps	Typ. / Max. 12KHz~20MHz Frequency Band
Phase Noise		-140 / -130	dBc/Hz	Typ. / Max., At 1MHz frequency offset
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 years at 25°C Average Effective Ambient Temperature), Shock and Vibration.

Output Enable / Disable Function

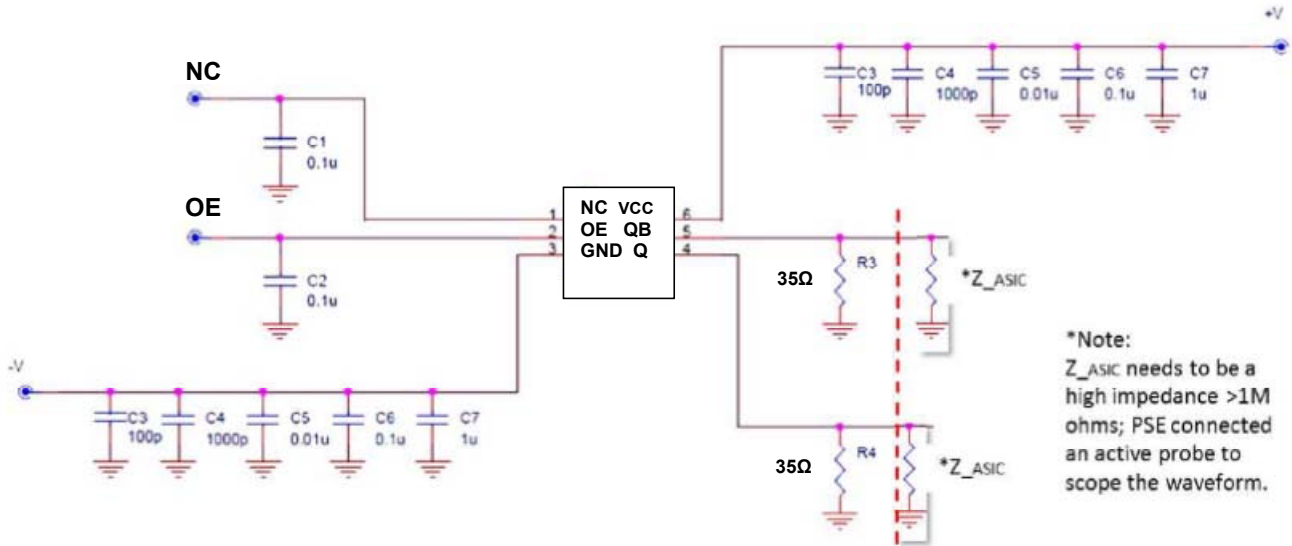
Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (Pin2), Output Enable	0.7V _{CC}			V	Or Open
Input Voltage (Pin2), Output Disable (low power standby)			0.3V _{CC}	V	Output is Hi-Z
Output Disable Delay			5	us	
Output Enable Delay			20	us	
Start Up Time			10	ms	

TYPE NX 5.0x3.2 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

NX53D3301Z

VER. D 25-Sep-15

TEST CIRCUIT



▪ Test Condition:

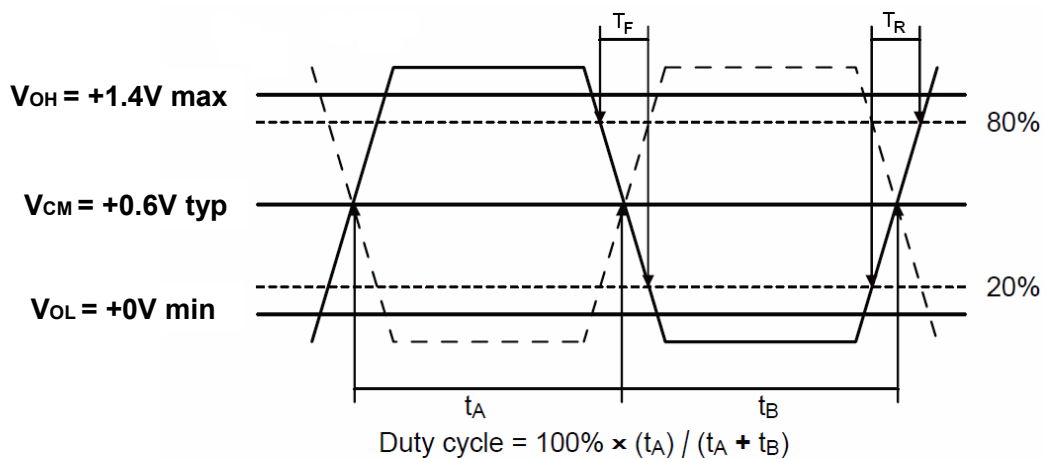
V+ : 3.3V, V- : GND.

OE & Pin2 : Hi-Z or Floated.

Q : Shunt a R4 to GND, and scope by a Hi-Z probe.

QB : Shunt a R3 to GND, and scope by a Hi-Z probe.

OUTPUT WAVEFORM



TYPE NX 5.0x3.2 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

NX53D3301Z

VER. D 25-Sep-15

RELIABILITY SPECIFICATIONS

ENVIRONMENTAL:

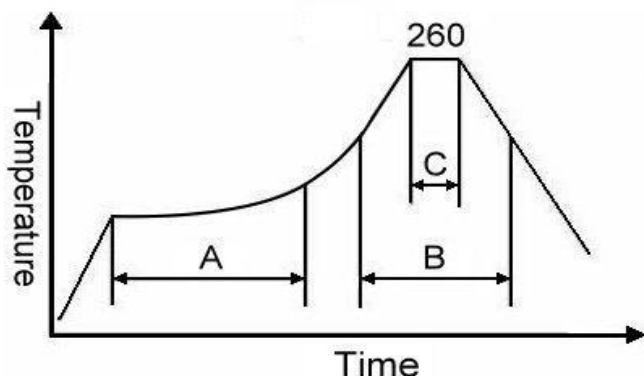
- a) THERMAL SHOCK: MIL-STD-883, Method 1011, Condition A
- b) MOISTURE RESISTANCE: MIL-STD-883, Method 1004
- c) VIBRATION: MIL-STD-883, Method 2007, Condition A
- d) RESISTANCE TO SOLDERING HEAT: J-STD-020D Table 5-2 Pb-free devices (except 2 cycles max)
- e) HAZARDOUS SUBSTANCE: Pb - free and RoHS/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

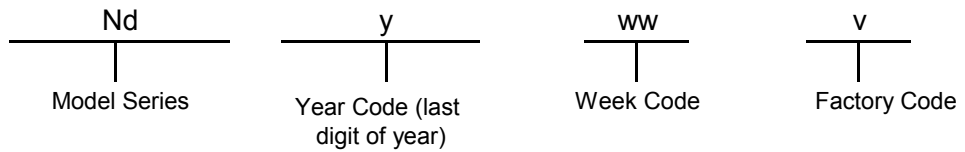
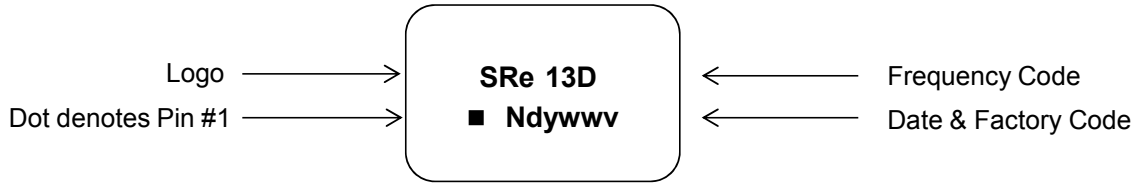
For soldering reflow profile and reliability test ratings go to: <http://www.pericom.com/pdf/sre/reflow.pdf>

TYPE NX 5.0x3.2 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

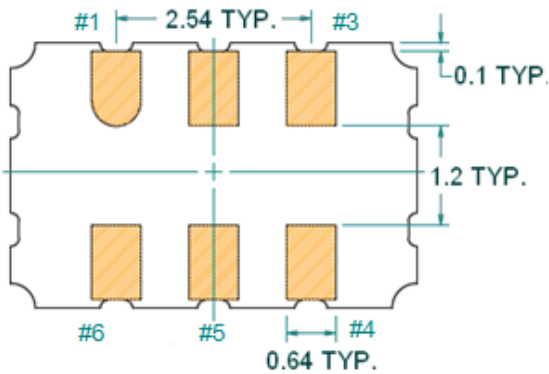
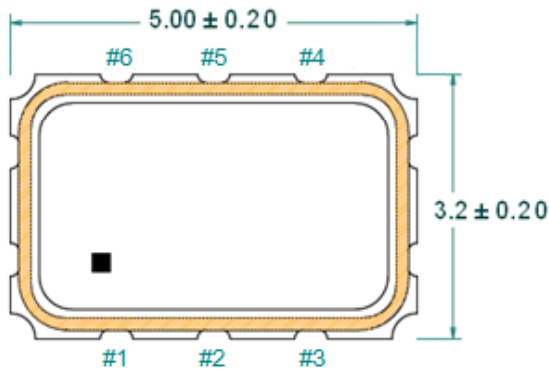
NX53D3301Z

VER. D 25-Sep-15

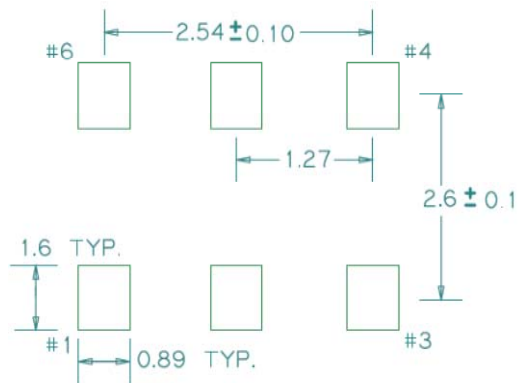
MARKING



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.

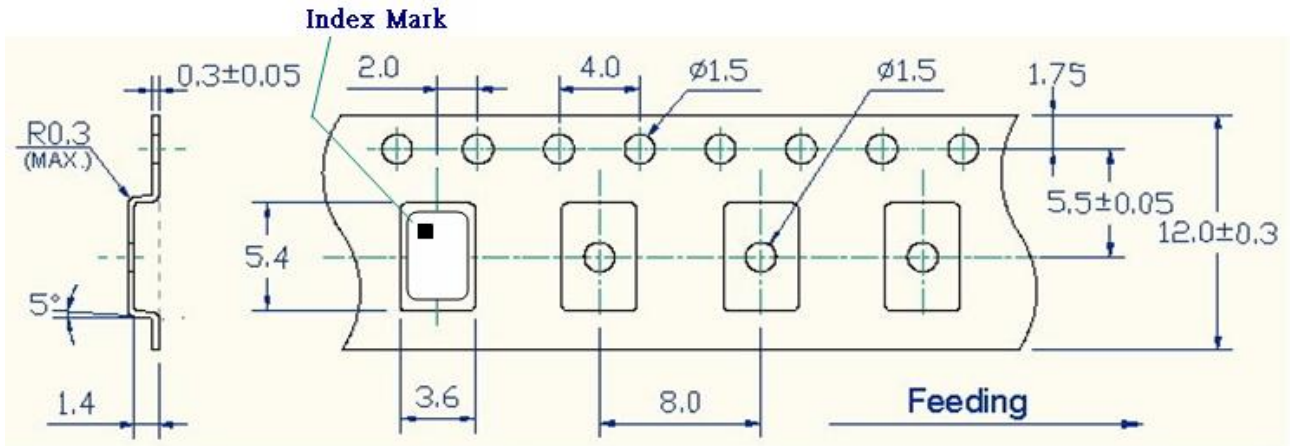
Pin	Function
1	NC
2	OE
3	Ground
4	Q
5	\bar{Q}
6	V _{CC}

TYPE NX 5.0x3.2 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

NX53D3301Z

VER. D 25-Sep-15

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

NX53D3301Z

VER. D 25-Sep-15

PACKING

