A Product Line of
Diodes Incorporated

SPECIFICATION FOR APPROVAL

CUSTOMER	
NOMINAL FREQUENCY	135.000000 MHz
PRODUCT TYPE	TYPE NX 3.2x2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR
SPEC. NO. (P/N)	NX33D5001Q
CUSTOMER P/N	
ISSUE DATE	February 27, 2018
VERSION	A

APPROVED	PREPARED	QA
		

Diodes Incorporated

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*Pb-free
*RoHS Compliant
*HF-Halogen Free
*REACH Compliant
*AEC-Q200 Compliant

VERSION HISTORY

Version No.	Version Date	Description	Notes
A	Feb.27,2018	Initial Release	

TYPE NX 3.2x2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

NX33D5001Q

VER. A 27-Feb-18

ELECTRICAL SPECIFICATIONS

SRe Part Number : NX33D5001Q

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	Fo	135.000000	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	LVDS		
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	0.4	ns	Max. measured 20/80% of Waveform
Output Voltage "0" Level	V_{OL}	1.10 / 0.9	V	Typ. / Min.
Output Voltage "1" Level	V_{OH}	1.43 / 1.6	V	Typ. / Max.
Output Load		100Ω connected between outputs		Output requires termination
Differential Output Voltage	V_{OD}	247 / 454	mV	Min. / 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	

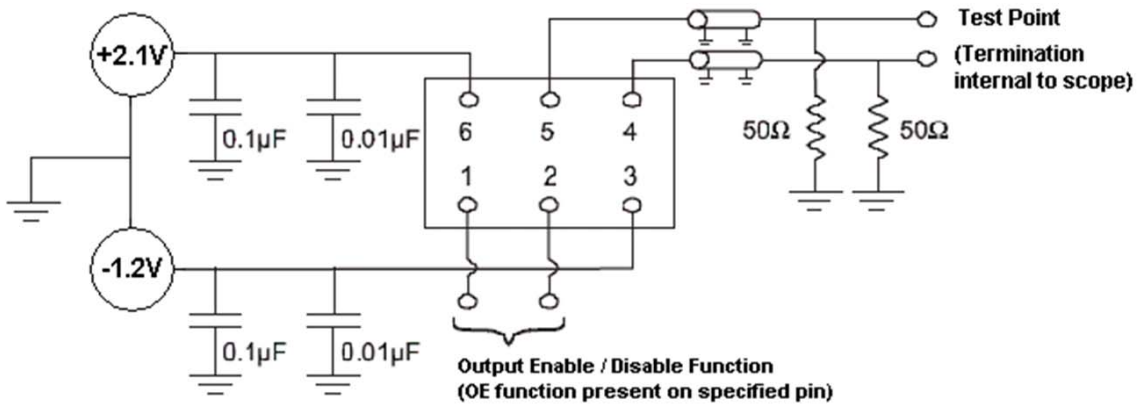
※ This product doesn't include harmful substance that stipulated by SONY SS-00259 Level 1 and S-AT2-001 Level 1 standard. RoHS Compliant (Pb - Free).

****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.**

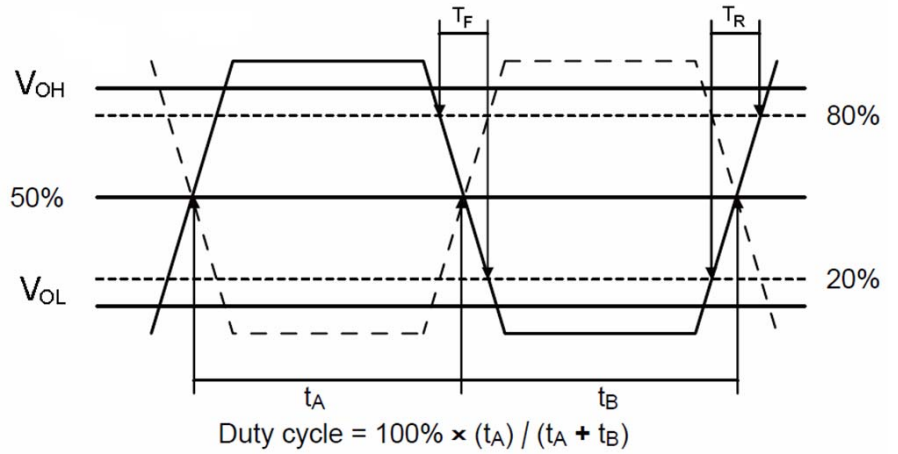
Output Enable / Disable Function

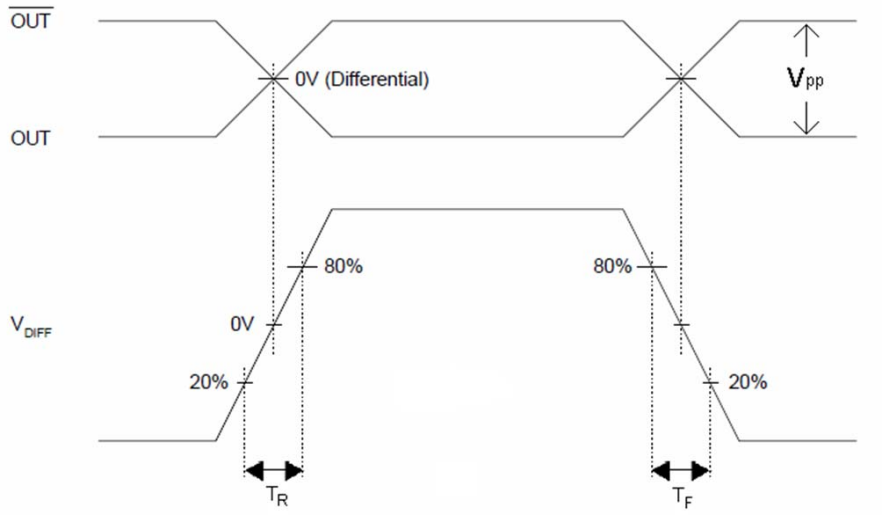
Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (Pin1), Output Enable	$0.7V_{CC}$			V	Or Open
Input Voltage (Pin1), Output Disable (low power standby)			$0.3V_{CC}$	V	Output is Hi-Z
Output Disable Delay			100	ns	
Output Enable Delay			100	ns	
Start Up Time			10	ms	

TEST CIRCUIT



OUTPUT WAVEFORM





AEC-Q200 RELIABILITY TEST SPECIFICATIONS:

1. Initial

1.1 Physical Dimensions: JESD22, Method JB1-100

1.2 External Visual: MIL-STD-883, Method 2009

1.3 Freq. Vs. Temperature: Per Specification/Datasheet

2. Mechanical

2.1 Mechanical Shock: MIL-STD-202 Method 213

2.2 Vibration: MIL-STD-202 Method 204

2.3 Solderability: J-STD-002

2.4 Board Flex: AEC Q200-005

2.5 Terminal Strength (SMD): AEC Q200-006

3.Environmental

3.1 Temp Cycle: JESD22, Method JA-104

3.2 Resistance to Solder Heat: MIL-STD-202 Method 210

3.3 High Temperature Operating Life: MIL-STD-202, Method 108

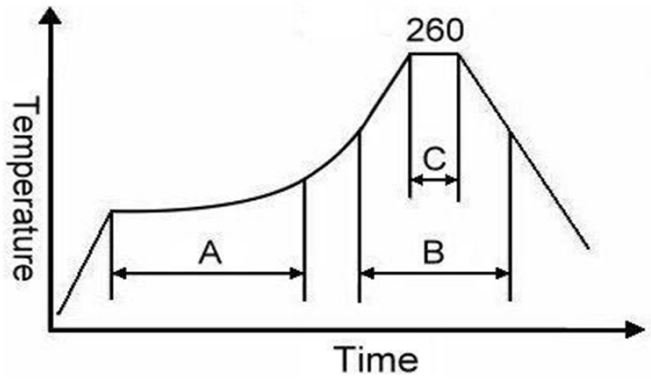
3.4 High Temp Exposure: MIL-STD-202, Method 108

3.5 High Temp & High humidity: MIL-STD-202, Method 103

3.6 Thermal Shock: MIL-STD-202, Method 107

SUGGESTED IR REFLOW PROFILE

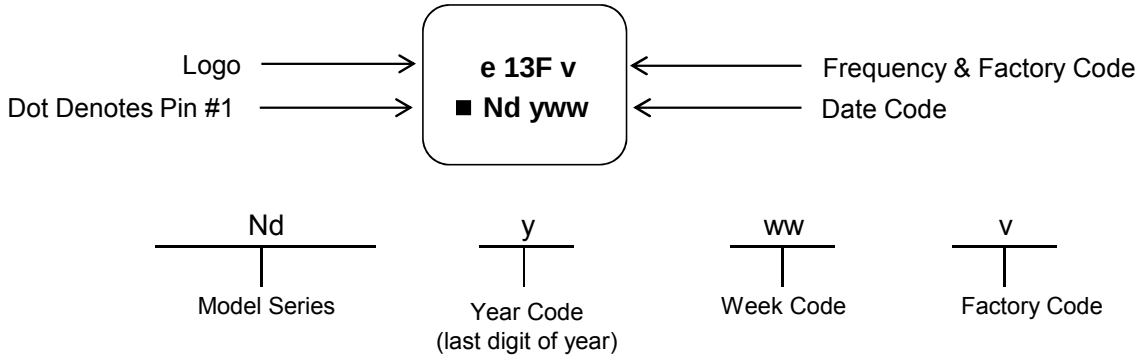
*As per IPC-JEDEC J-STD-020D



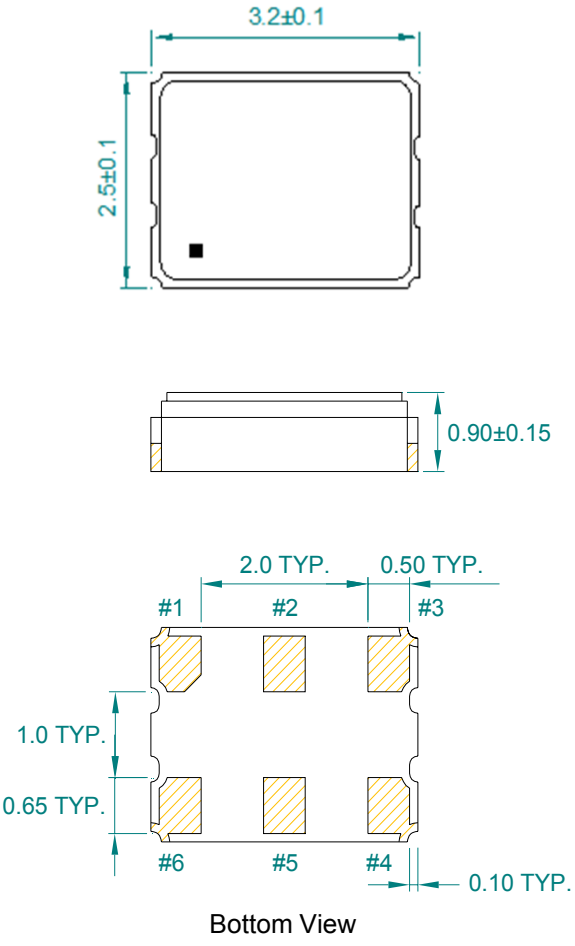
Note:

	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

MARKING

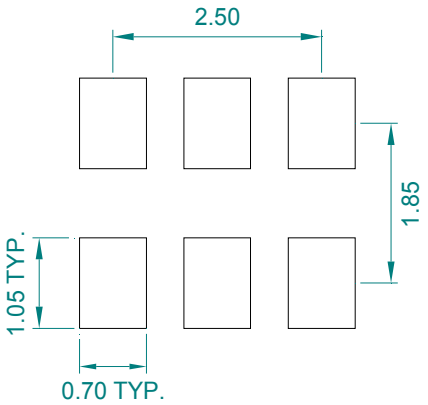


MECHANICAL DRAWINGS (Scale: None. Dimensions are in mm.)



Bottom View

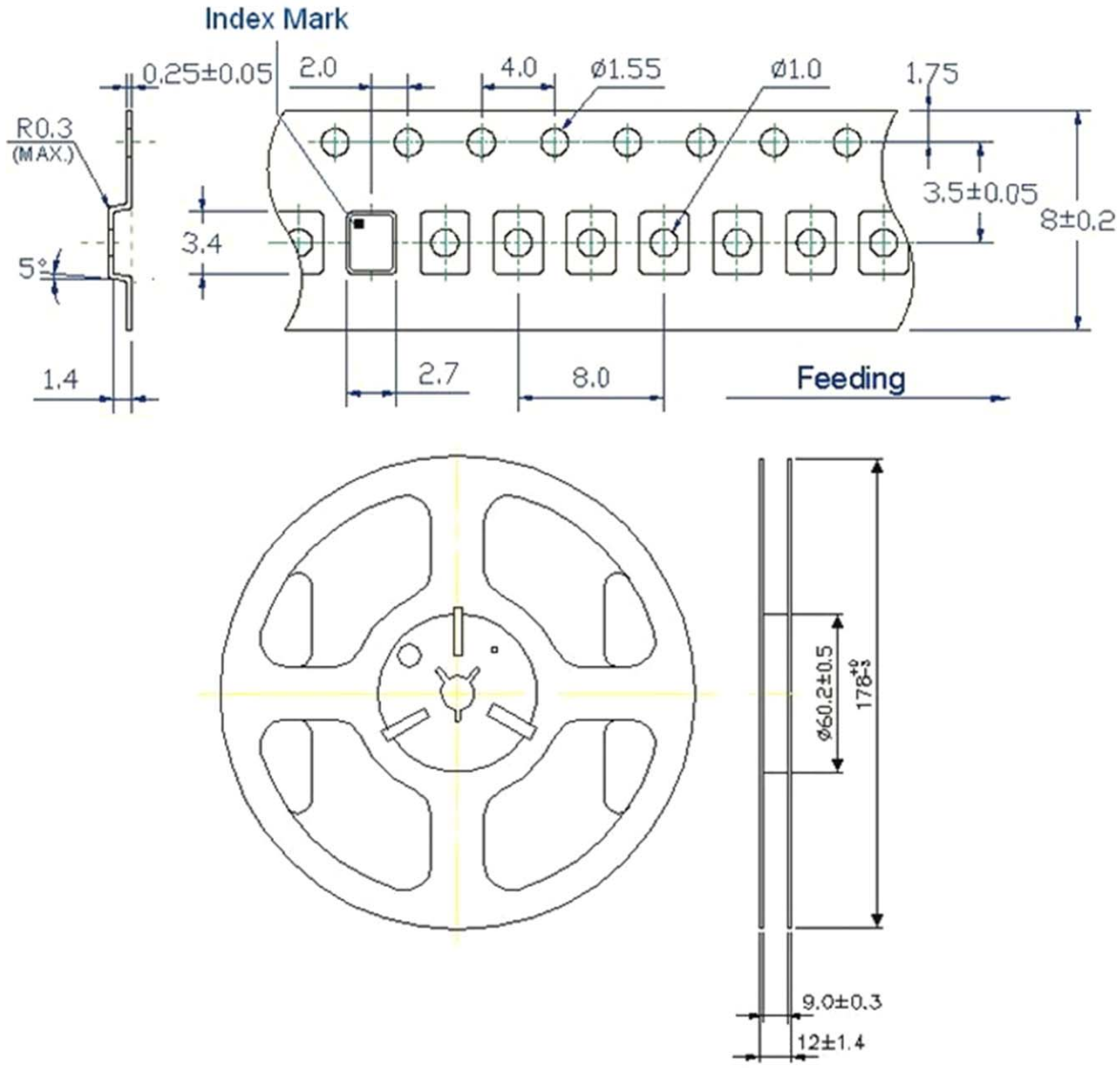
Recommended Land Pattern*



*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	NC
3	Ground
4	Q
5	$\overline{Q}$
6	V_{CC}

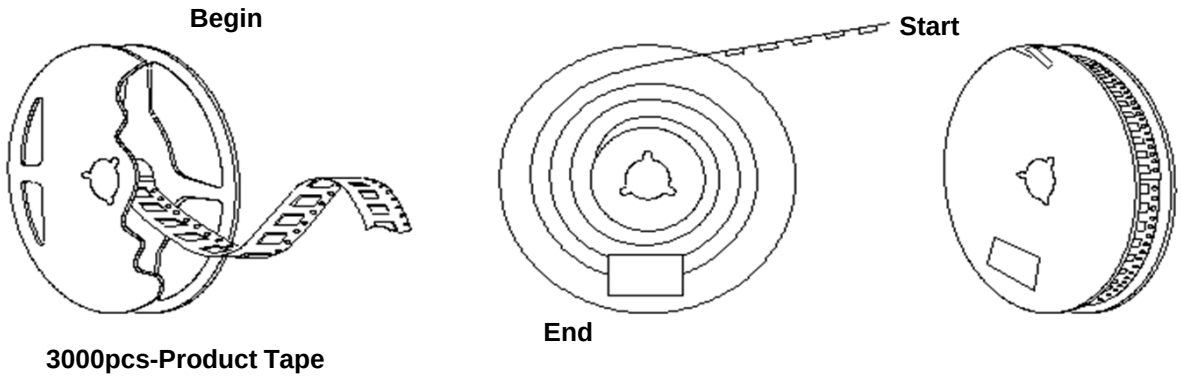
TAPE & REEL



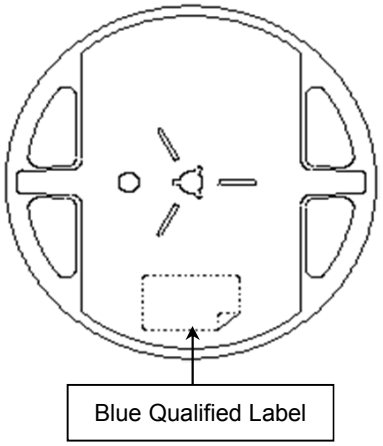
1. 230mm minimum leafer which consist of carrier and/or tape followed by a minimum of 160mm of empty carrier tape sealed with cover tape.

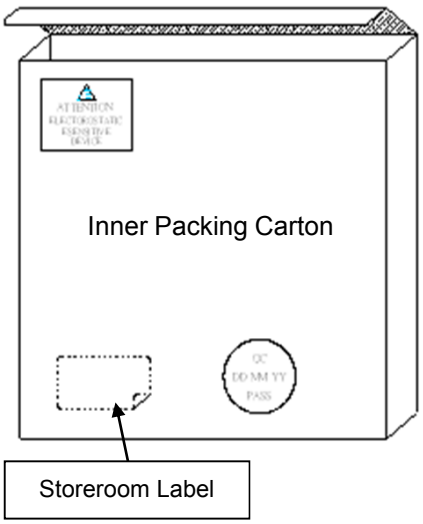
2. 160mm minimum trailer of empty carrier tape sealed with cover tape.

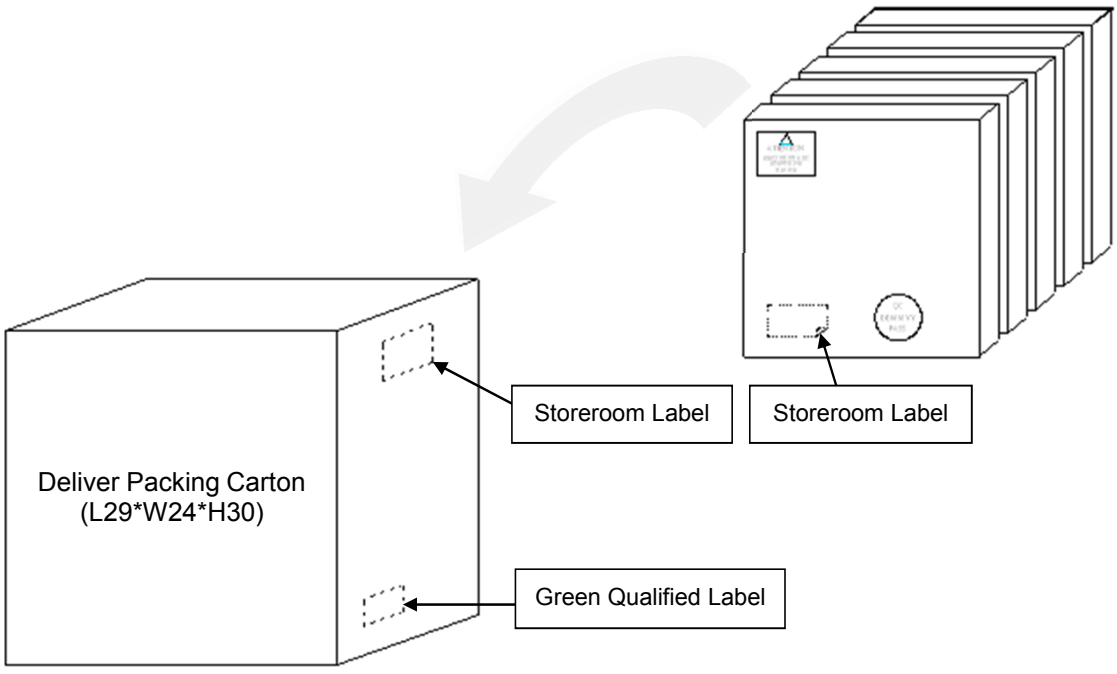
PACKING



3000pcs-Product Tape







Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

DIODES:

BZT52C5V1T-7 DMG1013UWQ-13 PDS540-13 SDT3A45SA-13 ZHCS500TA ZXMP6A13FQTA
APX809S-46SA-7 MMBTA13-7-F SBR20A300CTB-13 SMAJ22CAQ-13-F ZXTP718MATA S1G-13-F
ZVN4424GTA DMTH41M8SPS-13 74AHC1G02W5-7 AL5822W6-7 B190-13-F BZT52C3V3LP-7
DZ9F3V6S92-7 BAS40-06-7-F DF04M SDT10A45P5-13 SMBJ30A-13-F 74AHCT1G02QSE-7
TLV272IM8-13 AP7343D-18W5-7 DDTD142JC-7-F SMCJ24A-13-F BC857BT-7-F FZT605TA