

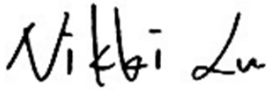
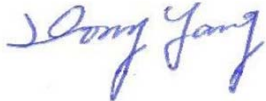


A Product Line of
Diodes Incorporated



SPECIFICATION FOR APPROVAL

CUSTOMER	_____
NOMINAL FREQUENCY	100.000000 MHz
HOLDER TYPE	TYPE NX 3.2x2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR
SPEC. NO. (P/N)	NX34A0007Q
CUSTOMER P/N	_____
ISSUE DATE	November 23, 2018
VERSION	A

APPROVED	PREPARED	QA
		

Diodes Incorporated

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

TYPE NX 3.2x2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

NX34A0007Q

VER. A

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VERSION HISTORY

[illegible]

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ELECTRICAL SPECIFICATIONS

SRe Part Number : NX34A0007Q

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	Fo	100.000000	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	+3.3V Typ., also support +2.5V
Logic Type	LT	HCSL		
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	700	ps	Max. measured from Vol=0.175V to Voh=0.525V
Output Voltage "0" Level	V _{OL}	-0.150 / 0	V	Min. / Typ.
Output Voltage "1" Level	V _{OH}	0.66 / 0.70 / 0.90	V	Min. / Typ. / Max.
Output Load		Rs=33Ω, Rp=50Ω, CL=2pF		Output requires termination
Output Phase Jitter-PCIe Gen2		2.0 / 3.0	ps RMS	Typ. / Max., As defined by PCI-SIG for PCIe Gen 2.0 reference clock
Output Phase Jitter-PCIe Gen3		0.43 / 1.0	ps RMS	Typ. / Max., As defined by PCI-SIG for PCIe Gen 3.0 reference clock
Jitter, Phase	RMS	0.4 / 0.6	ps	Typ./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

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	



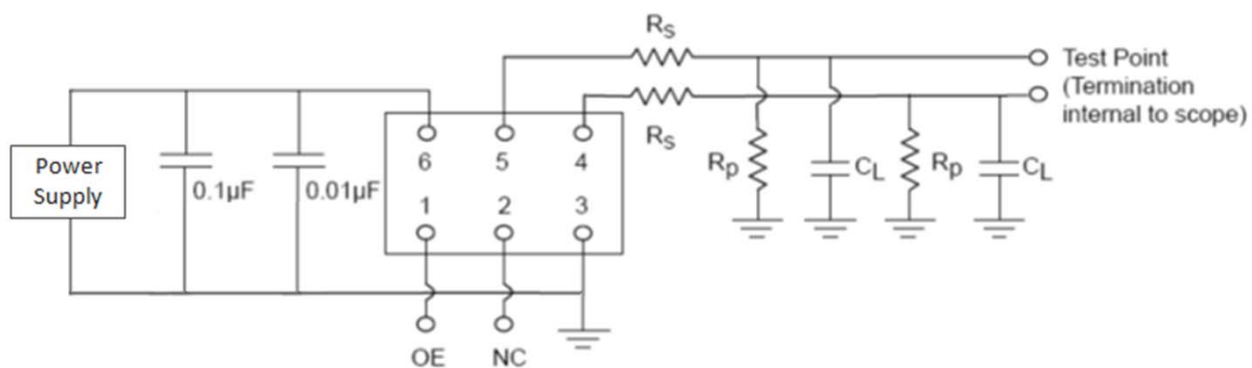
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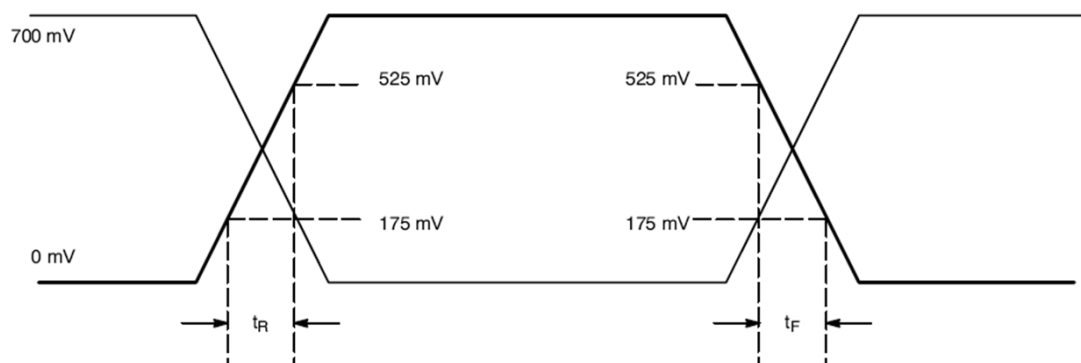
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TEST CIRCUIT



$$R_S = 33\Omega \quad R_P = 50\Omega, \quad C_L = 2\text{pF}$$

OUTPUT WAVEFORM



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AEC-Q200 RELIABILITY TEST SPECIFICATIONS:

1. Initial

- 1 Physical Dimensions: JESD22, Method JB1-100
- 1 External Visual: MIL-STD-883, Method 2009
- 1 Freq. Vs. Temperature: Per Specification/Datasheet

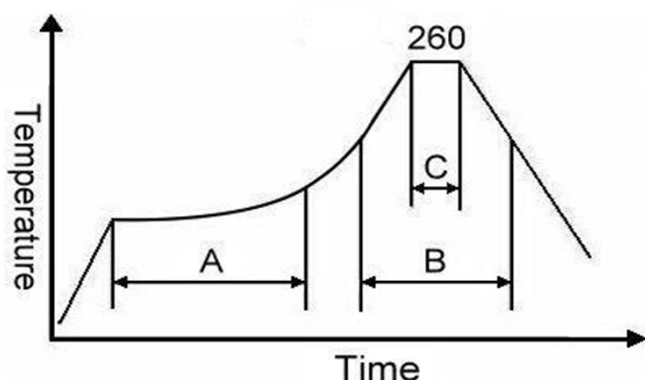
2. Mechanical

- 2 Mechanical Shock: MIL-STD-202 Method 213
- 2 Vibration: MIL-STD-202 Method 204
- 2 Solderability: J-STD-002
- 2 Board Flex: AEC Q200-005
- 3 Terminal Strength (SMD): AEC Q200-006

3.Environmental

- 3 Temp Cycle: JESD22, Method JA-104
- 3 Resistance to Solder Heat: MIL-STD-202 Method 210
- 3 High Temperature Operating Life: MIL-STD-202, Method 108
- 3 High Temp Exposure: MIL-STD-202, Method 108
- 4 High temp & High humidity: MIL-STD-202, Method 103
- 4 Thermal Shock: MIL-STD-202, Method 107

SUGGESTED IR REFLOW PROFILE



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

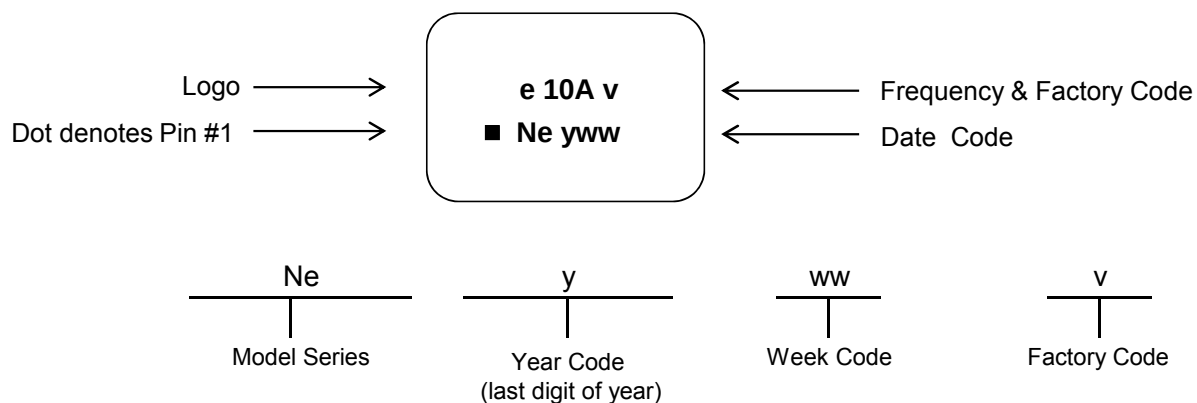
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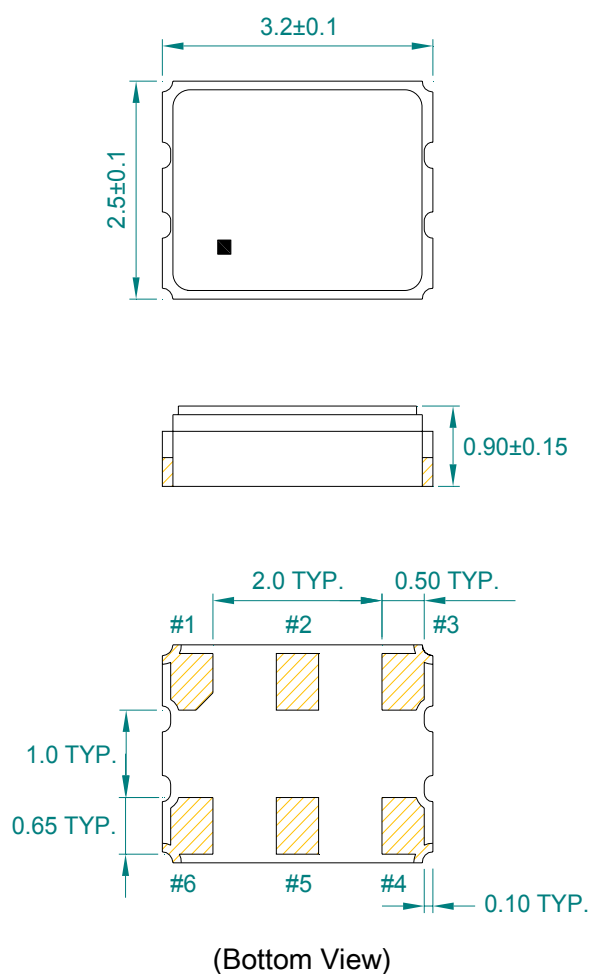
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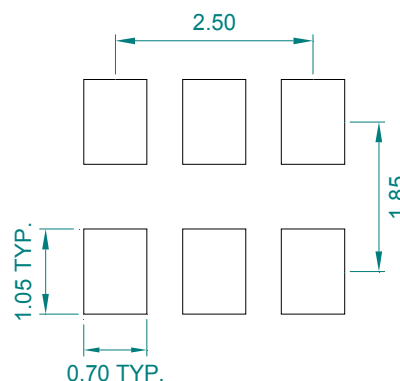
MARKING



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



Recommended Land Pattern*



*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	V _{EE}
4	OUTPUT
5	OUTPUT N
6	V _{CC}

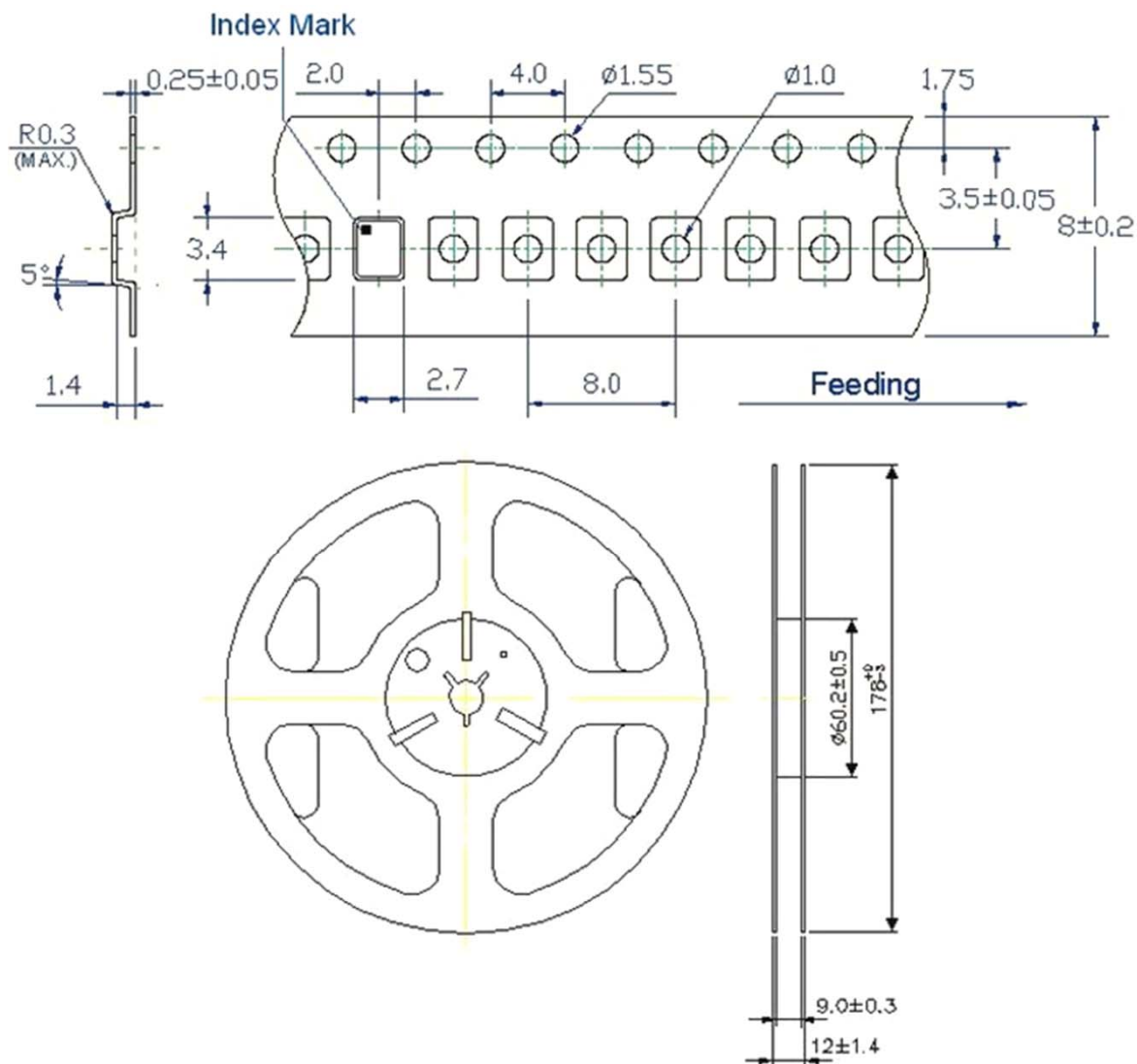
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TAPE&REEL



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.

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PACKING

