



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

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- *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

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VERSION HISTORY

Version No.	Version Date	Customer Receipt Date	Supplier Receipt Date	Description	Notes
A	Sep.7,2015			Initial Release	
B	Sep.11,2015			Updated Nominal Frequency to 133.333333MHz	
C	Sep.22,2015			Changed Rise / Fall Time & Output Voltage "1" Level	
D	Sep.25,2015			1. Added edge rate, overshoot voltage & undershoot voltage 2. Updated logic type & output enable / disable Function table	

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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

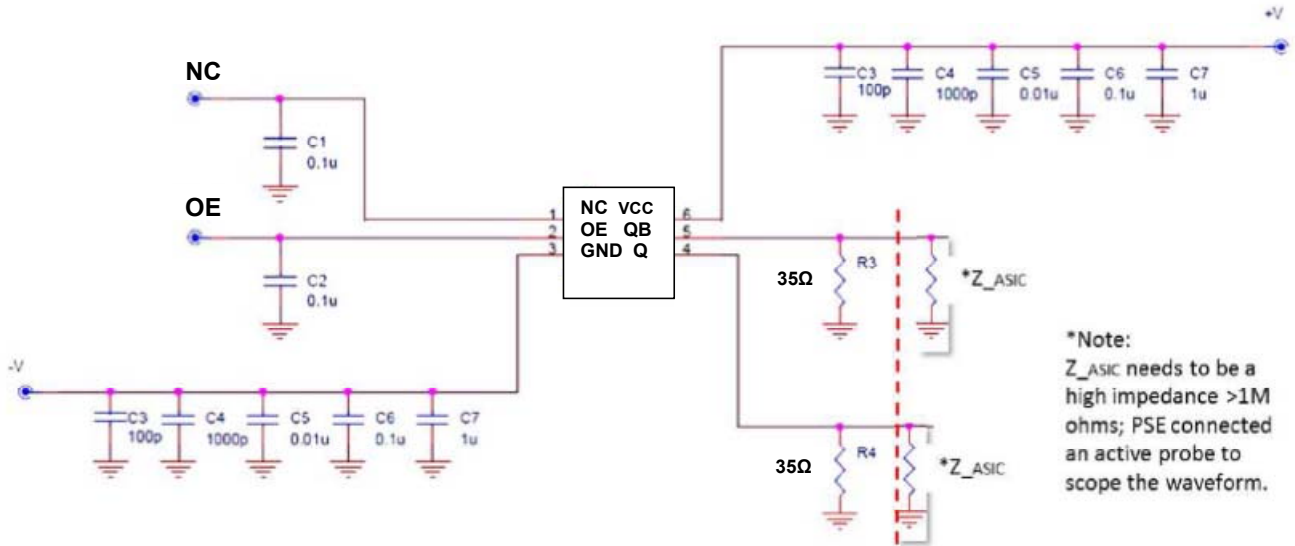
Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (Pin2), Output Enable	0.7V _{CC}			V	Or Open
Input Voltage (Pin2), Output Disable (low power standby)			0.3V _{CC}	V	Output is Hi-Z
Output Disable Delay			5	us	
Output Enable Delay			20	us	
Start Up Time			10	ms	

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TEST CIRCUIT



▪ Test Condition:

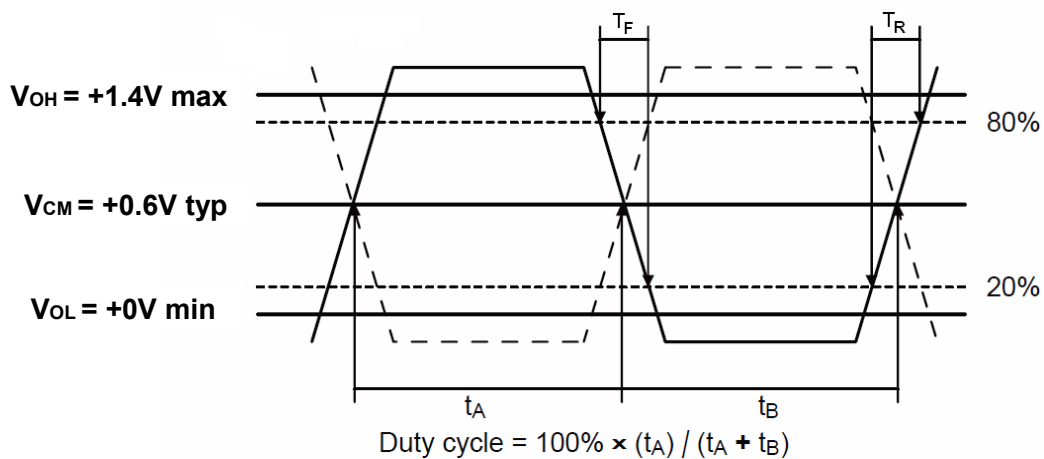
V+ : 3.3V, V- : GND.

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



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RELIABILITY SPECIFICATIONS

ENVIRONMENTAL:

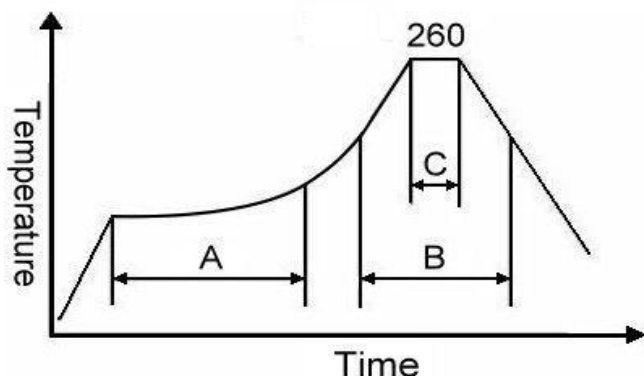
- a) THERMAL SHOCK: MIL-STD-883, Method 1011, Condition A
- b) MOISTURE RESISTANCE: MIL-STD-883, Method 1004
- c) VIBRATION: MIL-STD-883, Method 2007, Condition A
- d) RESISTANCE TO SOLDERING HEAT: J-STD-020D Table 5-2 Pb-free devices (except 2 cycles max)
- e) HAZARDOUS SUBSTANCE: Pb - free and RoHS/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

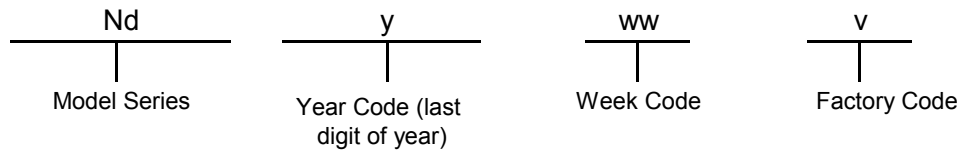
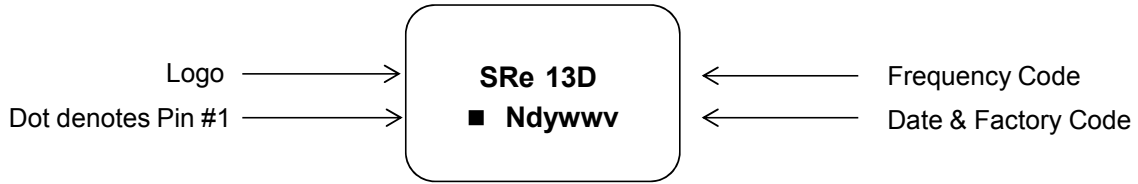
For soldering reflow profile and reliability test ratings go to: <http://www.pericom.com/pdf/sre/reflow.pdf>

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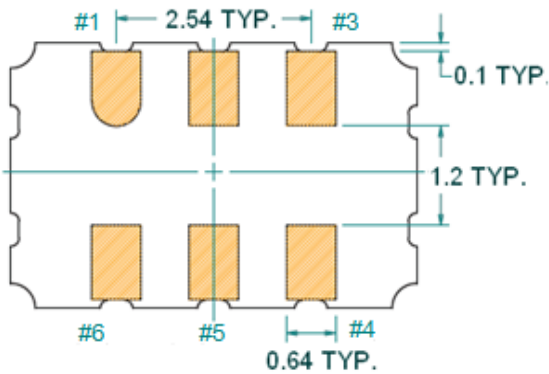
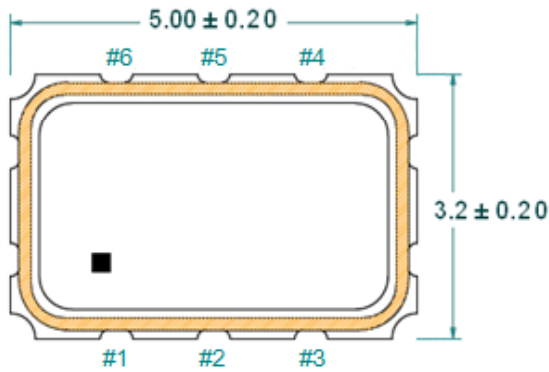
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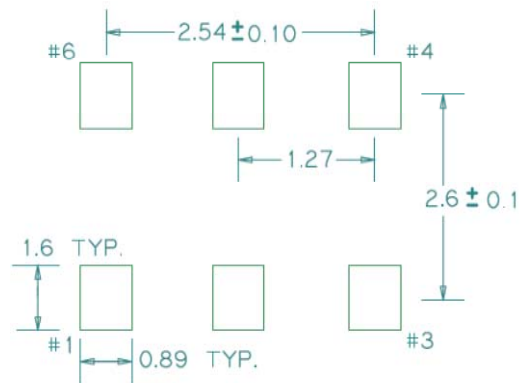
MARKING



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.

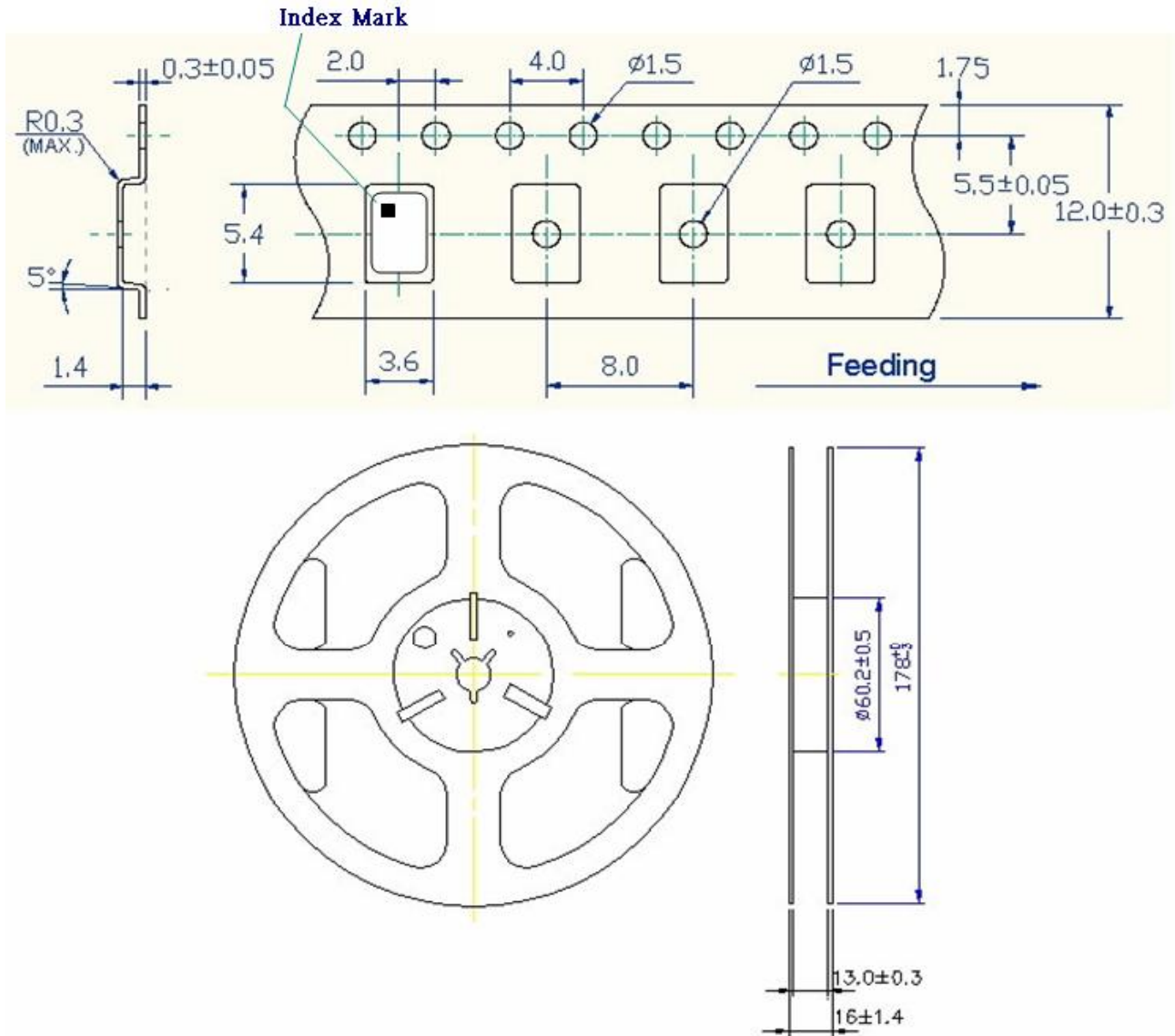
Pin	Function
1	NC
2	OE
3	Ground
4	Q
5	\bar{Q}
6	V _{CC}

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TAPE & REEL



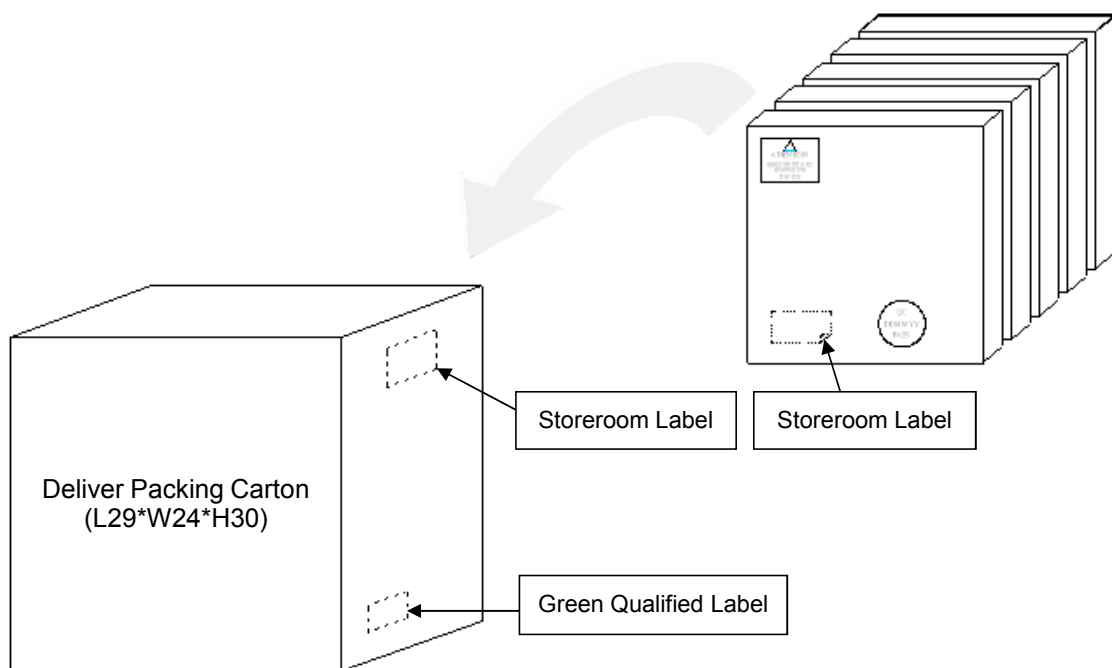
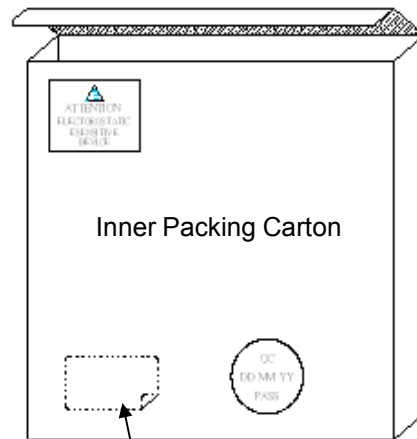
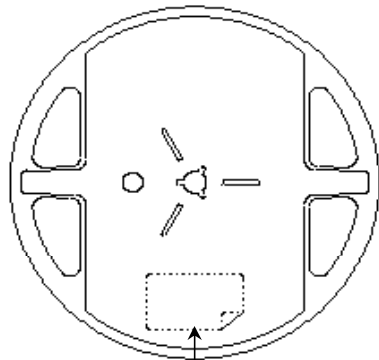
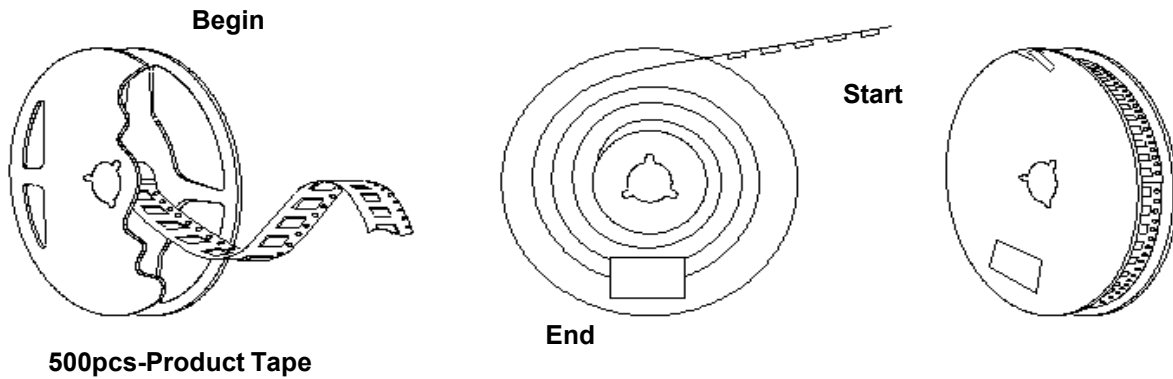
1. 230mm minimum leader which consist of carrier and/or tape followed by a minimum of 160mm of empty carrier tape sealed with cover tape.
2. 160mm minimum trailer of empty carrier tape sealed with cover tape.

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PACKING



Mouser Electronics

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