



A Product Line of  
Diodes Incorporated



## **PRODUCT SPECIFICATION**

NOMINAL FREQUENCY	156.250000 MHz
PRODUCT TYPE	TYPE UX 7.0x5.0 SEAM SEALED CRYSTAL CLOCK OSCILLATOR
SPEC. NO. ( P/N )	UX7BF62001
ISSUE DATE	May 25, 2022
VERSION	A

### Diodes Incorporated

No.2, Ziqiang 5th Rd., Zhongli Industrial Park,  
Zhongli Dist., Taoyuan City 32063, Taiwan (R.O.C.)  
TEL: 886-3-451-8888  
FAX: 886-3-461-3865  
<https://www.diodes.com>

\*Pb-free  
\*RoHS Compliant  
\*HF-Halogen Free  
\*REACH Compliant  
\*MSL: Level 1



# TYPE UX 7.0x5.0 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

## UX7BF62001

VER. A 25-May-22

### ELECTRICAL SPECIFICATIONS

SRe Part Number : UX7BF62001

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	F <sub>0</sub>	156.250000	MHz	
Frequency Stability	FT	± 25	ppm	**See note
Operating Temperature Range	TR	-40 to +85	°C	
Supply Voltage	V <sub>CC</sub>	+3.3 ± 5.0%	V	
Logic Type	LT	LVPECL		
Supply Current, Output Enabled	I <sub>CC/OE</sub>	70	mA	Max.
Supply Current, Output Disabled	I <sub>CC/OD</sub>	100	µA	Max.
Duty Cycle (Symmetry)	DC/SY	45 / 55	%	Measured 50% of Waveform
Rise / Fall Time	T <sub>R</sub> /T <sub>F</sub>	0.4	ns	Max. measured 20/80% of Waveform
Output Voltage "0" Level	V <sub>OL</sub>	V <sub>CC</sub> -1.8V	V	Max.
Output Voltage "1" Level	V <sub>OH</sub>	V <sub>CC</sub> -1.2V	V	Min.
Output Load		50Ω to V <sub>CC</sub> -2V		
Jitter, Phase	RMS	0.2	ps	Max. 12KHz ~ 20MHz Frequency Band
Jitter, Accumulated	RMS(1-σ)	4	ps	Max. 20,000 Consecutive Periods
Jitter, Peak to Peak	Pk-Pk	40	ps	Max. 100,000 Random Periods
Start Up Time		10	ms	Max.
Storage Temperature Range		-55 to +125	°C	

**\*\*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

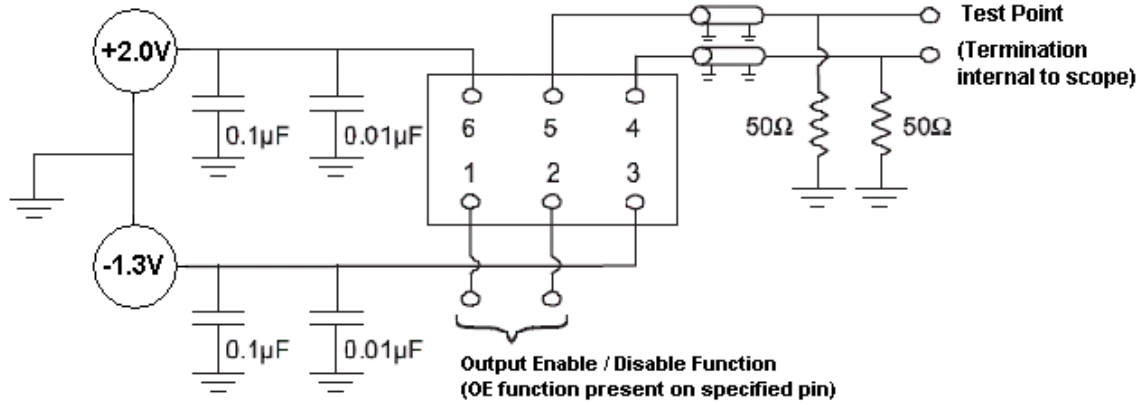
Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (Pin1), Output Enable	0.7V <sub>CC</sub>			V	Or Open
Input Voltage (Pin1), Output Disable (low power standby)			0.3V <sub>CC</sub>	V	Output is Hi-Z
Output Disable Delay			200	ns	
Output Enable Delay			2	ms	

# TYPE UX 7.0x5.0 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

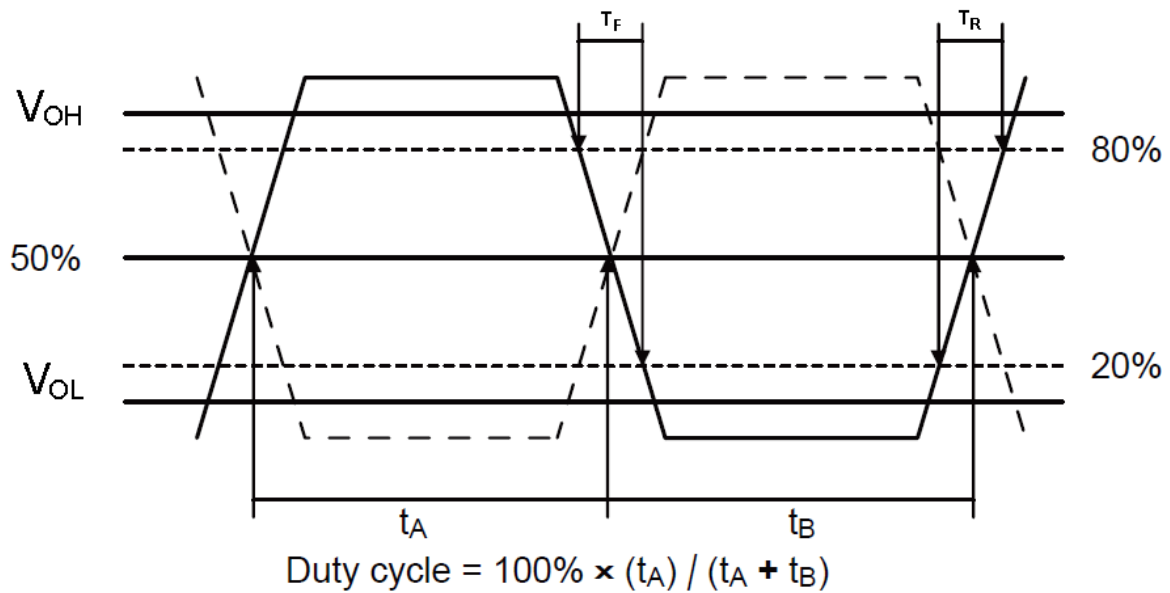
## UX7BF62001

VER. A 25-May-22

### TEST CIRCUIT



### OUTPUT WAVEFORM



# TYPE UX 7.0x5.0 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

## UX7BF62001

VER. A 25-May-22

### RELIABILITY SPECIFICATIONS

#### ENVIRONMENTAL:

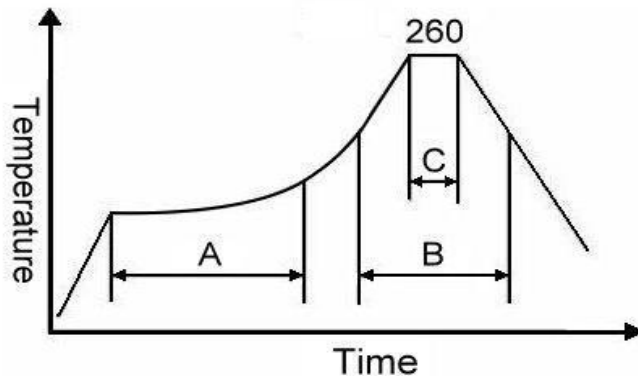
- a) THERMAL SHOCK: MIL-STD-883, Method 1011, Condition A
- b) MOISTURE RESISTANCE: MIL-STD-883, Method 1004
- c) VIBRATION: MIL-STD-883, Method 2007, Condition A
- d) RESISTANCE TO SOLDERING HEAT: J-STD-020D Table 5-2 Pb-free devices (except 2 cycles max)
- e) HAZARDOUS SUBSTANCE: Pb free, RoHS Compliant
- f) ESD Testing: JESD22 A114 / JESD22 C101
- g) Latch up Testing: JESD78

#### 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:

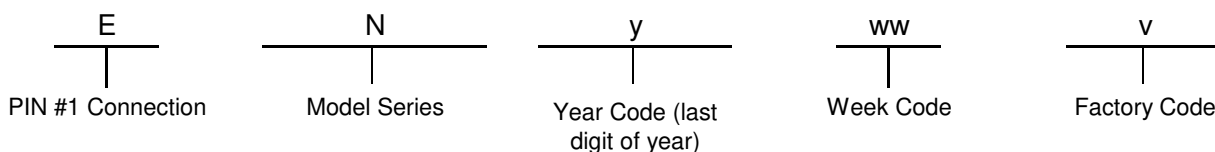
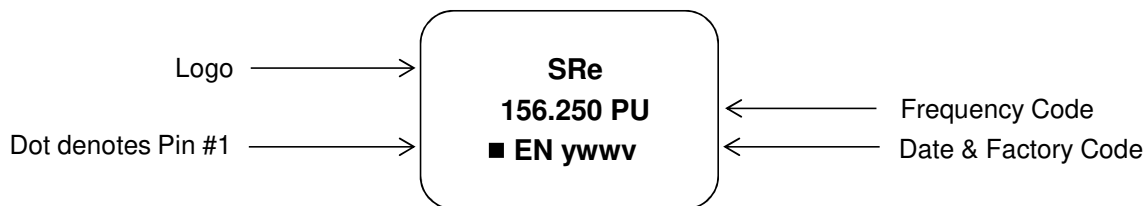
	Stage	Temperature	Time
A	Preheat	150~200°C	60~120 Sec
B	Primary Heat	217°C	60~150 Sec
C	Peak	260°C	10 Sec

# TYPE UX 7.0x5.0 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

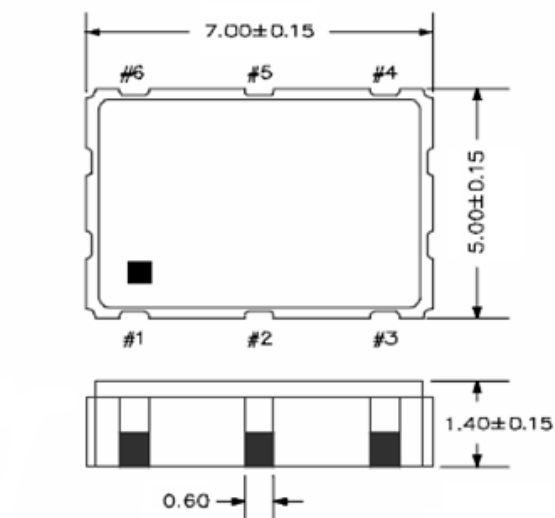
## UX7BF62001

VER. A 25-May-22

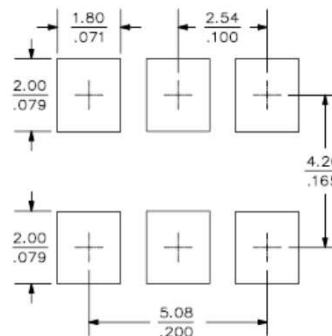
### MARKING



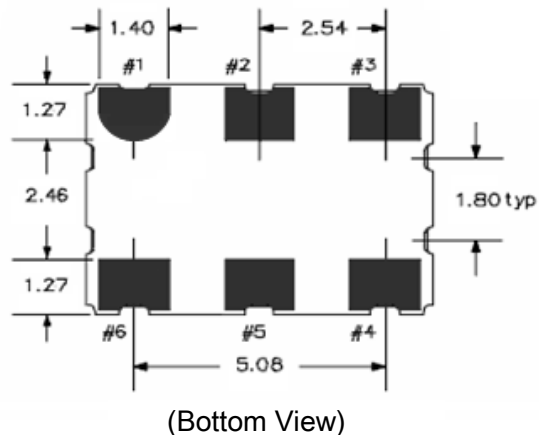
### MECHANICAL DRAWINGS ( Scale:None. Dimensions are in mm.)



#### 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.



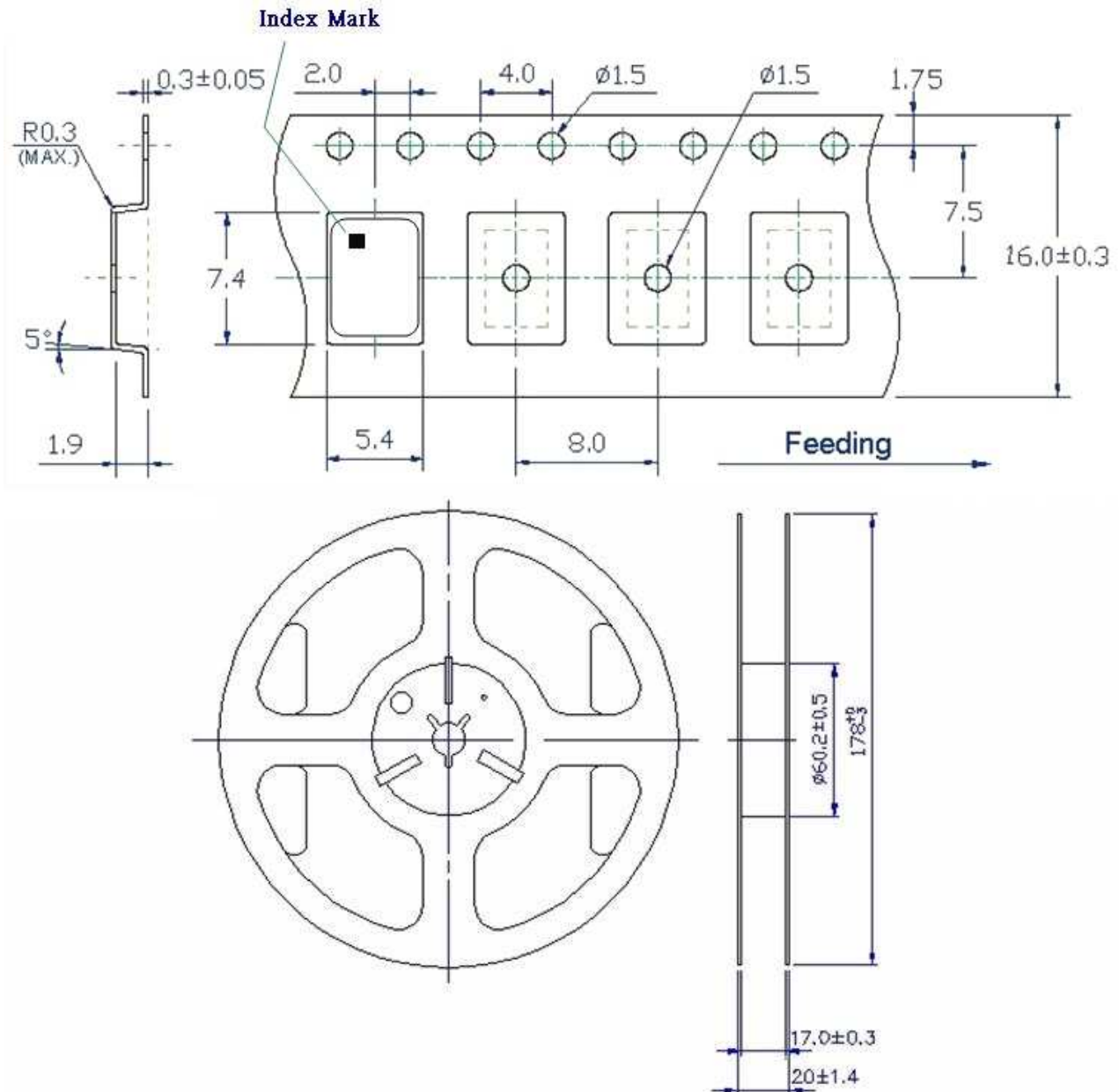
Pin	Function
1	OE
2	NC
3	V <sub>EE</sub>
4	OUTPUT
5	OUTPUT N
6	V <sub>CC</sub>

# TYPE UX 7.0x5.0 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

## UX7BF62001

VER. A 25-May-22

### 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 UX 7.0x5.0 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

## UX7BF62001

VER. A 25-May-22

### PACKING

