



A Product Line of  
Diodes Incorporated



## SPECIFICATION FOR APPROVAL

CUSTOMER \_\_\_\_\_

NOMINAL FREQUENCY 125.000000 MHz



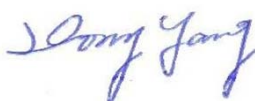
PRODUCT TYPE TYPE SX 7.0x5.0 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

SPEC. NO. ( P/N ) SXC500009

CUSTOMER P/N \_\_\_\_\_

ISSUE DATE March 13, 2019

VERSION C

APPROVED	PREPARED	QA
		

### Diodes Incorporated

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\*RoHS Exception

\*REACH Compliant



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

## SXC500009

VER. C 13-Mar-19

### ELECTRICAL SPECIFICATIONS

SRe Part Number : SXC500009

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	Fo	125.000000	MHz	
Frequency Stability	FT	± 25	ppm	**See note
Operating Temperature Range	TR	-10 to +70	°C	
Supply Voltage	V <sub>DD</sub>	+3.3 ± 10.0%	V	
Logic Type	LT	LVC MOS		
Supply Current, Output Enabled	I <sub>DD</sub> /OE	30	mA	Max.
Supply Current, Output Disabled	I <sub>DD</sub> /OD	10	mA	Max.
Duty Cycle (Symmetry)	DC/SY	45 / 55	%	Measured 50% of Waveform
Rise / Fall Time	T <sub>R</sub> /T <sub>F</sub>	2	ns	Max. measured 20/80% of Waveform
Output Voltage "0" Level	V <sub>OL</sub>	10% V <sub>DD</sub>	V	Max.
Output Voltage "1" Level	V <sub>OH</sub>	90% V <sub>DD</sub>	V	Min.
Output Load	CL	15	pF	Max
Jitter, Phase	RMS	1	ps	Max. 12KHz ~ 20MHz Frequency Band
Jitter, Accumulated	RMS(1-σ)	7	ps	Typ. 20,000 Consecutive Periods
Jitter, Peak to Peak	Pk-Pk	50	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	2			V	Or Open
Input Voltage (Pin1), Output Disable (low power standby)			0.8	V	Output is Hi-Z
Internal Pullup Resistance	50			KΩ	
Output Disable Delay			100	ns	
Output Enable Delay			100	ns	

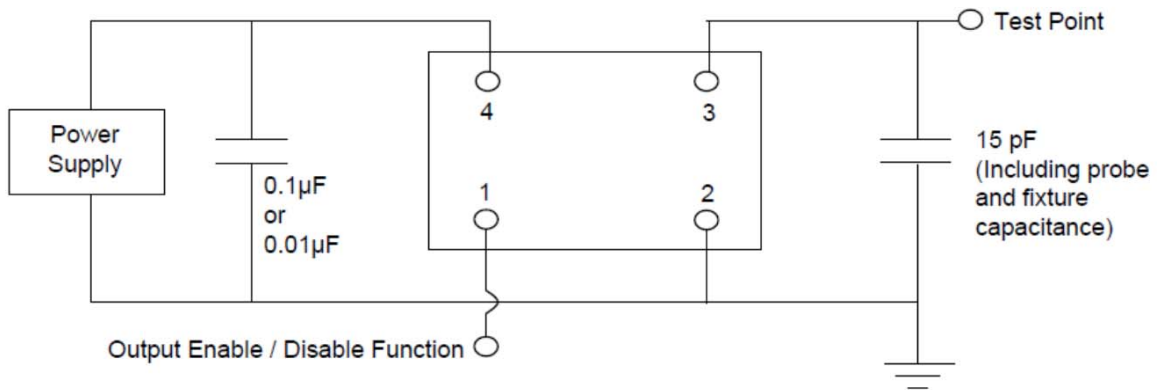


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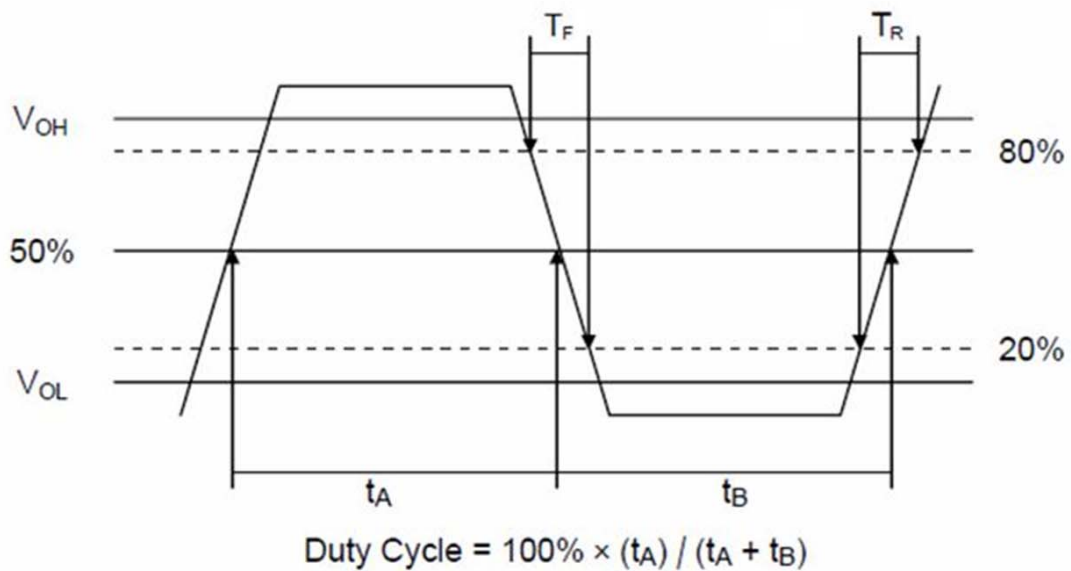
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### TEST CIRCUIT



### OUTPUT WAVEFORM



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### RELIABILITY SPECIFICATIONS

#### ENVIRONMENTAL:

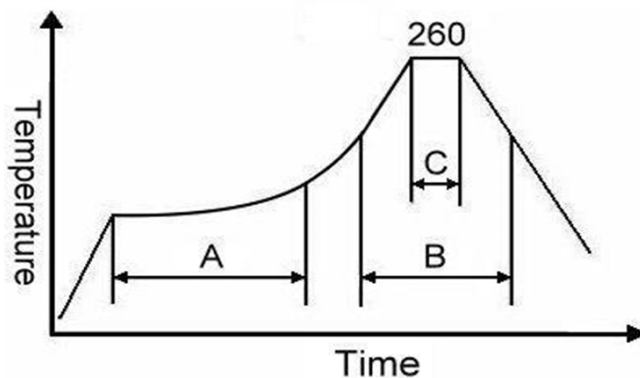
- a) THERMAL SHOCK: MIL-STD-883, Method 1011, Condition A
- b) MOISTURE RESISTANCE: MIL-STD-883, Method 1004
- c) VIBRATION: MIL-STD-883, Method 2007, Condition A
- d) RESISTANCE TO SOLDERING HEAT: J-STD-020D Table 5-2 Pb-free devices (except 2 cycles max)
- e) HAZARDOUS SUBSTANCE: RoHS Exception

#### 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:

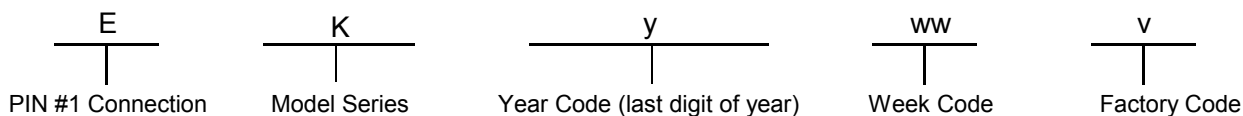
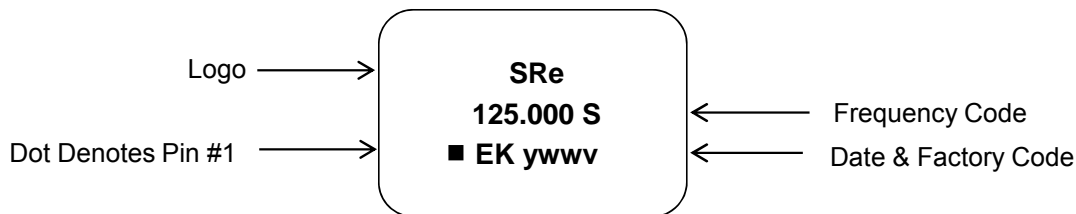
	Stage	Temperature	Time
A	Preheat	150~200°C	60~120 Sec
B	Primary Heat	217°C	60~150 Sec
C	Peak	260°C	10 Sec

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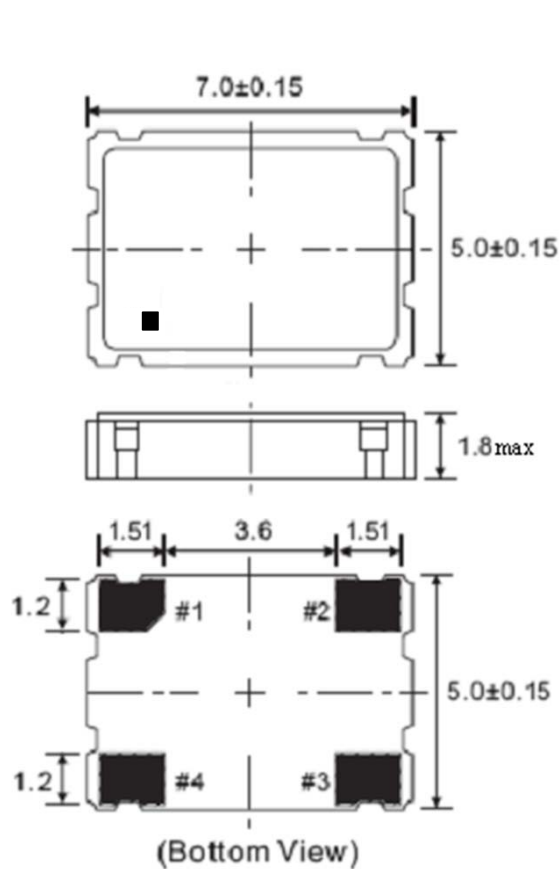
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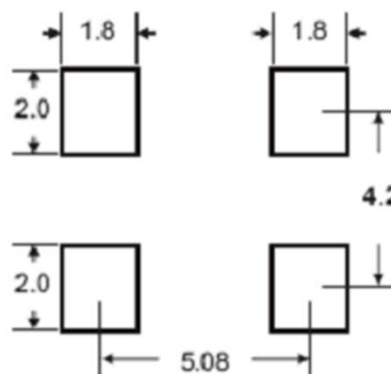
### MARKING



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



#### Recommended Land Pattern\*



\*Extended high frequency power decoupling is recommended (see test circuit for minimum recommendation). To ensure optimal performance, do not route traces beneath the package.

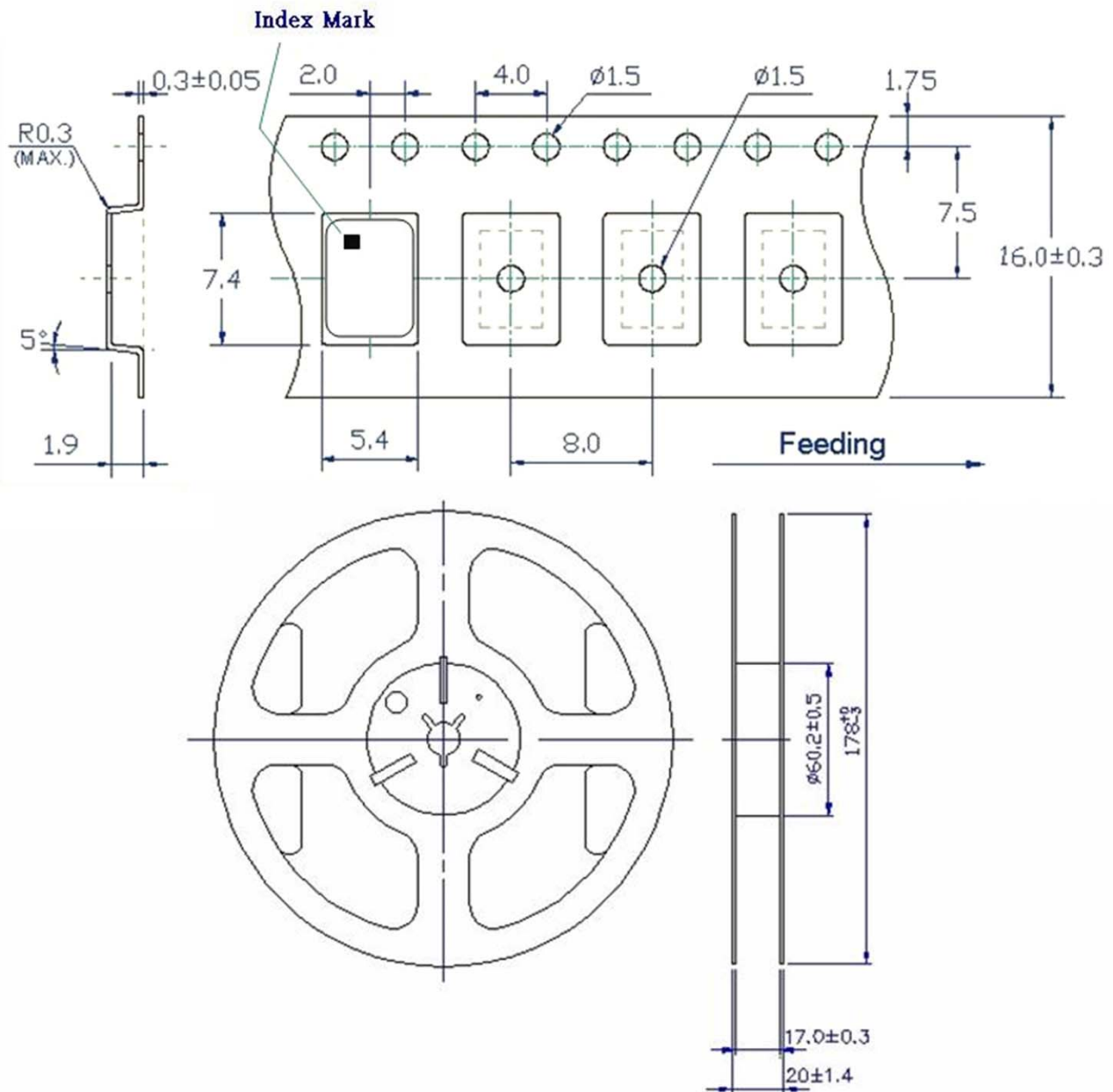
Pin	Function
1	OE
2	Ground
3	Clock Output
4	V <sub>DD</sub>

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### TAPE&REEL



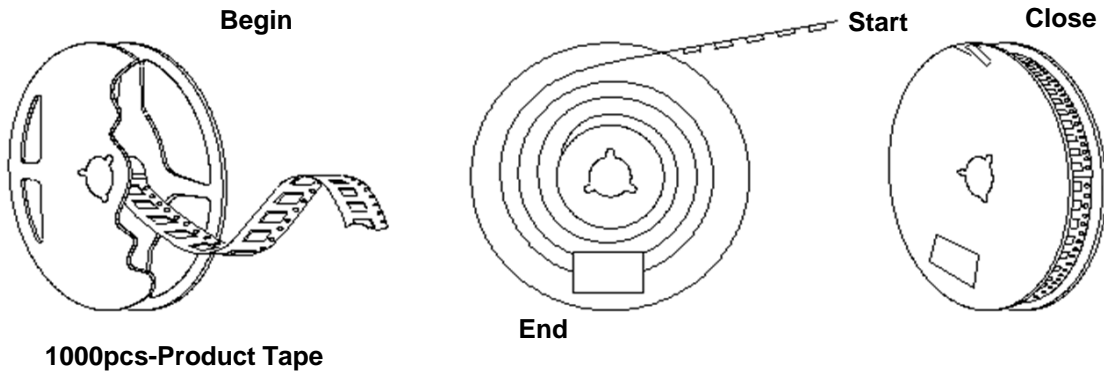
1. 230mm minimum leader which consist of carrier and/or tape followed by a minimum of 160mm of empty carrier tape sealed with cover tape.
2. 160mm minimum trailer of empty carrier tape sealed with cover tape.

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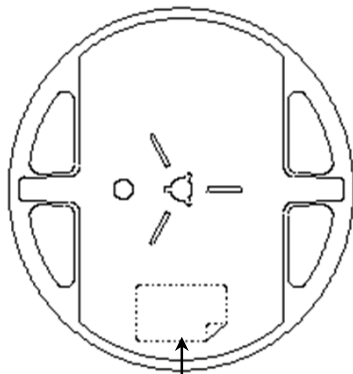
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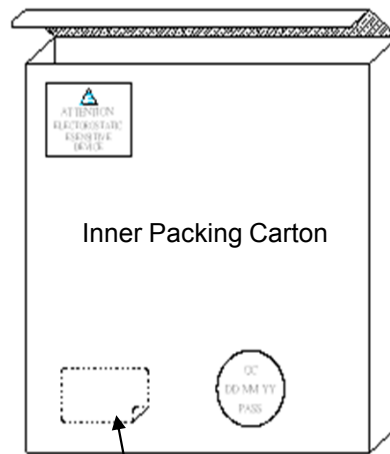
### PACKING



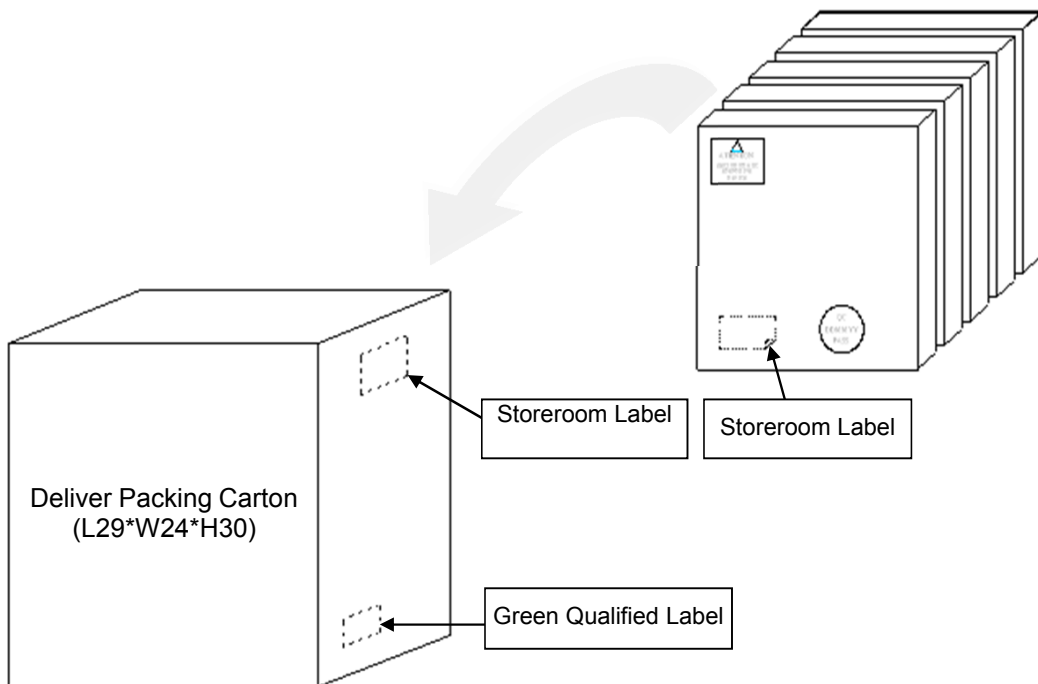
1000pcs-Product Tape



Blue Qualified Label



Storeroom Label



Storeroom Label

Storeroom Label

Green Qualified Label