



A Product Line of  
Diodes Incorporated



# SPECIFICATION FOR APPROVAL

CUSTOMER \_\_\_\_\_

NOMINAL FREQUENCY \_\_\_\_\_ 26.000000 MHz \_\_\_\_\_

PRODUCT TYPE \_\_\_\_\_ TYPE WL 2.5X2.0 HIGH PRECISION CRYSTAL OSCILLATOR \_\_\_\_\_

SPEC. NO. ( P/N ) \_\_\_\_\_ WL2126003Q \_\_\_\_\_

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

ISSUE DATE \_\_\_\_\_ August 26, 2018 \_\_\_\_\_

VERSION \_\_\_\_\_ B \_\_\_\_\_

| APPROVED | PREPARED | QA |
|----------|----------|----|
|          |          |    |

## Diodes Incorporated

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



# TYPE WL 2.5X2.0 HIGH PRECISION CRYSTAL OSCILLATOR

## WL2126003Q

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### ELECTRICAL SPECIFICATIONS

**SRe Part Number :    WL2126003Q**

| Item                        | Symbol                         | Specifications      | Units | Notes                            |
|-----------------------------|--------------------------------|---------------------|-------|----------------------------------|
| Nominal Frequency           | F <sub>o</sub>                 | 26.000000           | MHz   |                                  |
| Operating Temperature Range | T <sub>R</sub>                 | -40 to +105         | °C    |                                  |
| Supply Voltage              | V <sub>DD</sub>                | +3.3 ± 5.0%         | V     |                                  |
| Frequency Stability         | FT                             | ± 10                | ppm   | **See note                       |
| Logic Type                  | LT                             | LVC MOS             |       |                                  |
| Supply Current              | I <sub>DD</sub>                | 7                   | mA    | Max.                             |
| Output Logic "0" Level      | V <sub>OL</sub>                | 20% V <sub>DD</sub> | V     | Max.                             |
| Output Logic "1" Level      | V <sub>OH</sub>                | 80% V <sub>DD</sub> | V     | Min.                             |
| Output Load                 |                                | 15                  | pF    |                                  |
| Duty Cycle                  | DC                             | 45 / 55             | %     | Measured 50% V <sub>DD</sub>     |
| Rise / Fall Time            | T <sub>R</sub> /T <sub>F</sub> | 2                   | ns    | Max. measured 20/80% of Waveform |
| Jitter, Phase               | RMS                            | 1                   | ps    | Max. 12KHz ~ 5MHz 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      |
| Aging at 25°C               |                                | ± 5                 | ppm   | Max, 1st year                    |
| Aging at 25°C               |                                | ± 1                 | ppm   | Max, per year after 1st year     |
| Start Up Time               |                                | 1.5                 | ms    | Max.                             |
| Storage Temperature Range   |                                | -40 to +105         | °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), Shock and Vibration.**

**Output Enable / Disable Function**

| Parameter  | Min.               | Typ. | Max.               | Units | Notes          |
|--|--------------------|------|--------------------|-------|----------------|
| Input Voltage (Pin1), Output Enable                      | 0.7V <sub>DD</sub> |      |                    | V     |                |
| Input Voltage (Pin1), Output Disable (low power standby) |                    |      | 0.3V <sub>DD</sub> | V     | Output is Hi-Z |

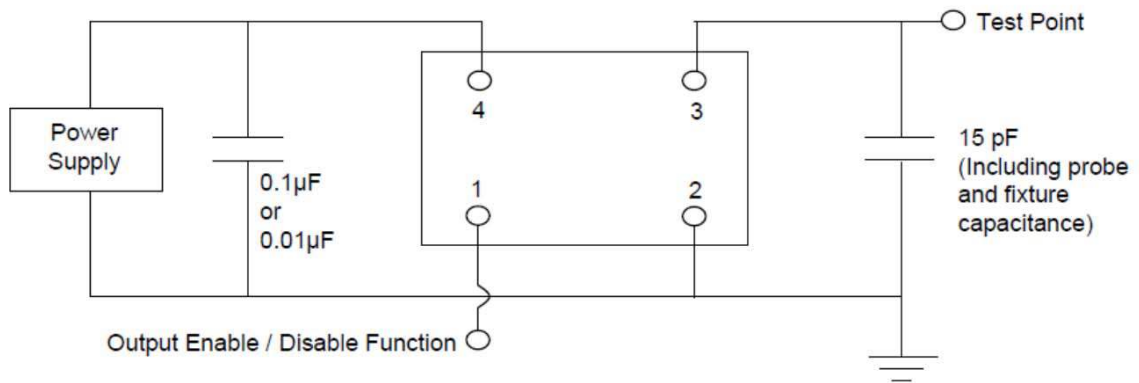


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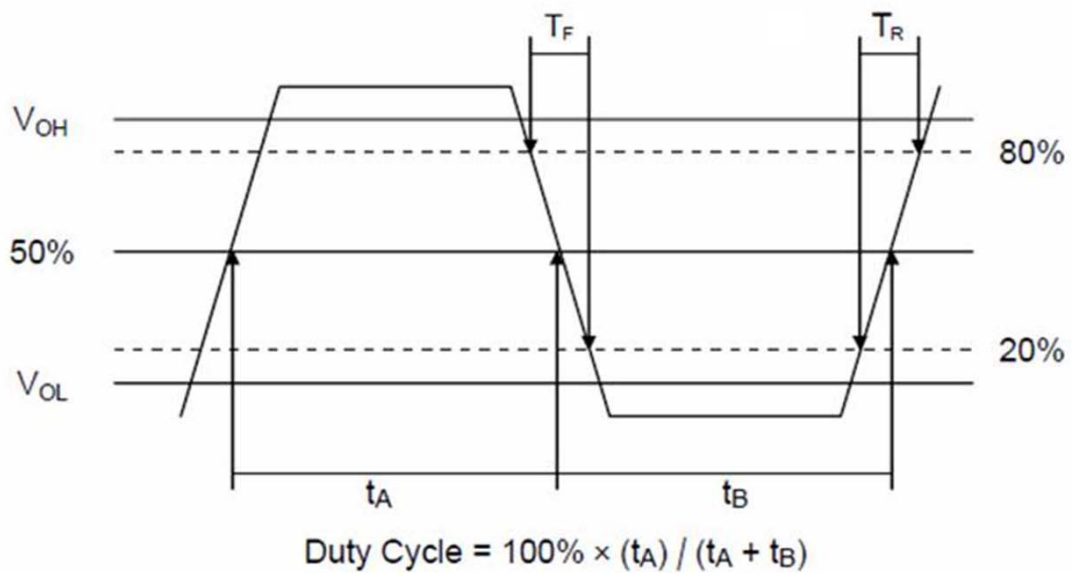
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### TEST CIRCUIT



### OUTPUT WAVEFORM



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### 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

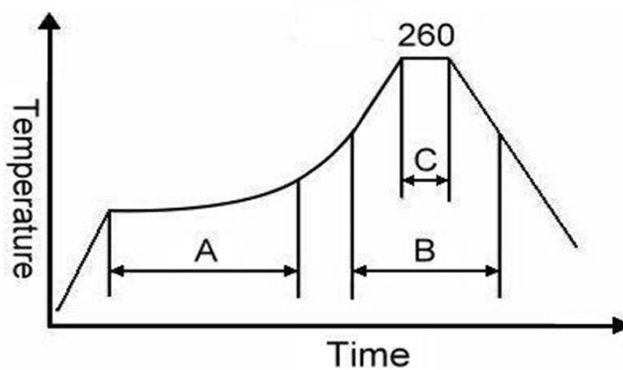
- 2.1 Mechanical Shock: MIL-STD-202 Method 213
- 2.2 Vibration: MIL-STD-202 Method 204
- 2.3 Solderability: J-STD-002
- 2.4 Board Flex: AEC Q200-005
- 2.5 Terminal Strength (SMD): AEC Q200-006

#### 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     |

**DIODES**  
INCORPORATED

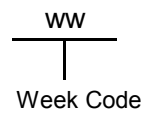
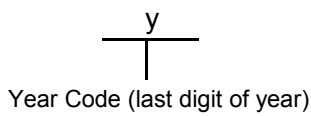
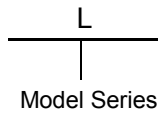
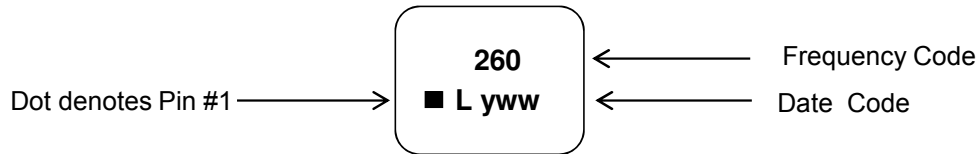
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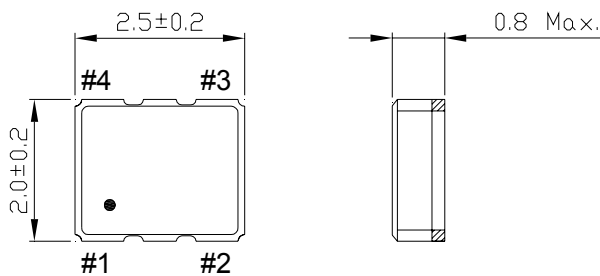
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### MARKING

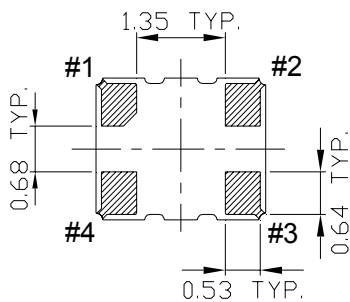
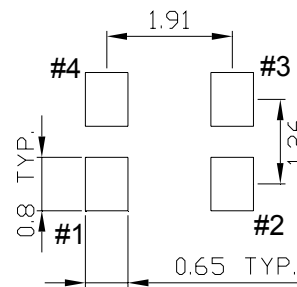


### MECHANICAL DRAWINGS ( Scale: None. Dimensions are in mm.)



#### Recommended Land Pattern

(TOP VIEW)



#### Pin Functions:

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

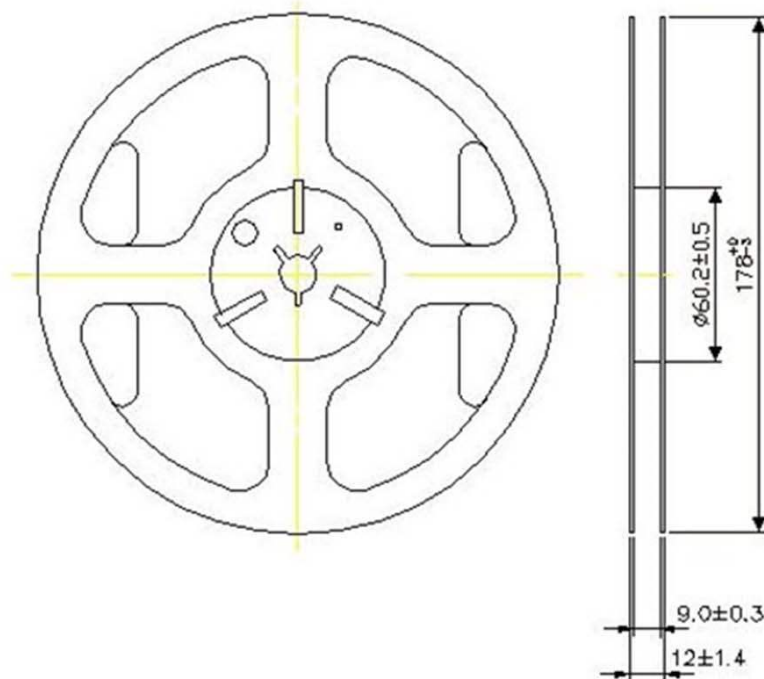
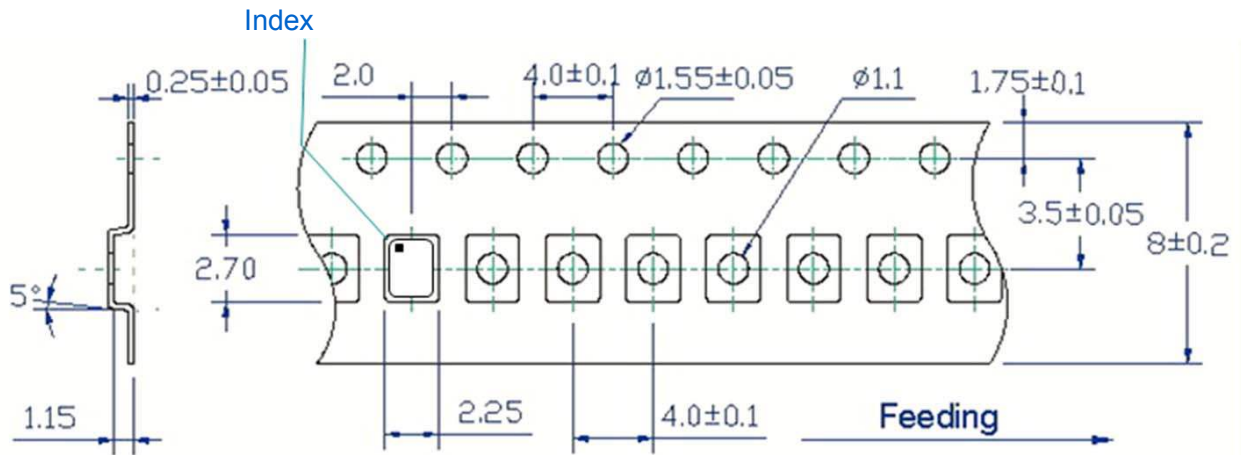
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### TAPE&REEL



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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### PACKING

