



A Product Line of
Diodes Incorporated



SPECIFICATION FOR APPROVAL

CUSTOMER _____

NOMINAL FREQUENCY 25.000000 MHz

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

SPEC. NO. (P/N) WL2125004Q

CUSTOMER P/N _____

ISSUE DATE August 26, 2018

VERSION B

APPROVED	PREPARED	QA

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
- *AEC-Q200 Compliant

TYPE WL 2.5X2.0 HIGH PRECISION CRYSTAL OSCILLATOR

WL2125004Q

VER. B 26-Aug-18

ELECTRICAL SPECIFICATIONS

SRe Part Number : WL2125004Q

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	F _o	25.000000	MHz	
Operating Temperature Range	TR	-40 to +85	°C	
Supply Voltage	V _{DD}	+1.8 ± 5.0%	V	
Frequency Stability	FT	± 15	ppm	**See note
Logic Type	LT	LVC MOS		
Supply Current	I _{DD}	3	mA	Max.
Output Logic "0" Level	V _{OL}	0.4	V	Max.
Output Logic "1" Level	V _{OH}	V _{DD} -0.4	V	Min.
Output Load		15	pF	
Duty Cycle	DC	45 / 55	%	Measured 50% V _{DD}
Rise / Fall Time	T _R /T _F	5	ns	Max. measured 20/80% of Waveform
Jitter, Phase	RMS	1	ps	Max. 12KHz ~ 5MHz 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		2	ms	Max.
Storage Temperature Range		-40 to +85	°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 Function

Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (Pin1), Output Enable	0.7V _{DD}			V	
Input Voltage (Pin1), Output Disable (low power standby)			0.3V _{DD}	V	Output is Hi-Z

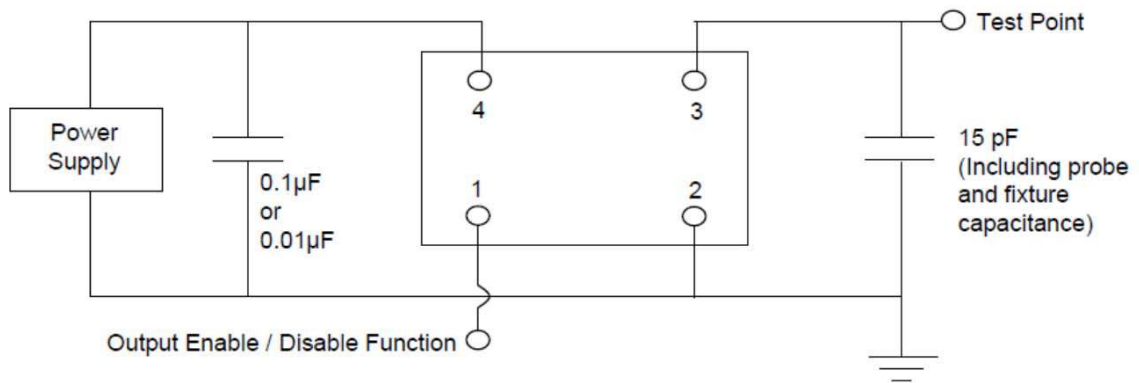


TYPE WL 2.5X2.0 HIGH PRECISION CRYSTAL OSCILLATOR

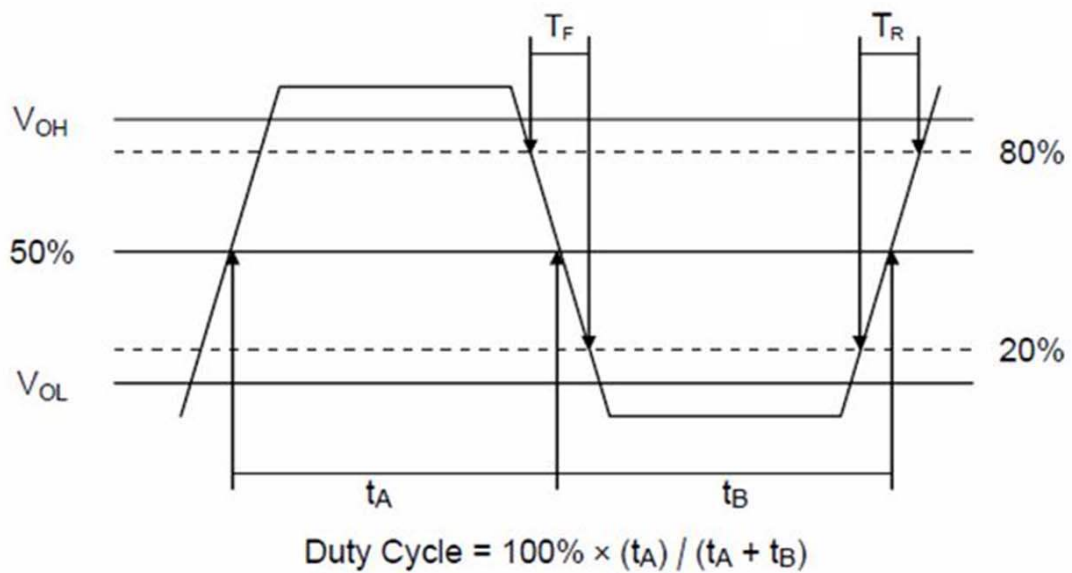
WL2125004Q

VER. B 26-Aug-18

TEST CIRCUIT



OUTPUT WAVEFORM



TYPE WL 2.5X2.0 HIGH PRECISION CRYSTAL OSCILLATOR

WL2125004Q

VER. B 26-Aug-18

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

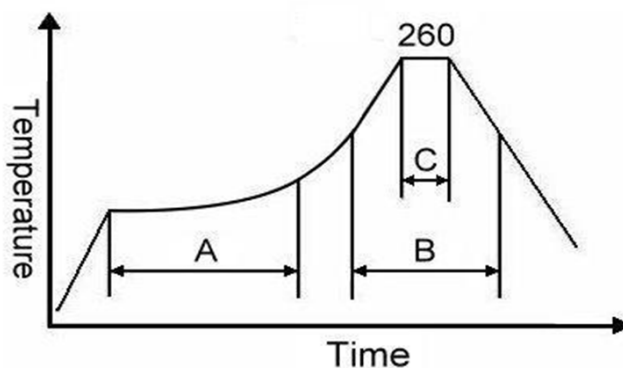
- 2.1 Mechanical Shock: MIL-STD-202 Method 213
- 2.2 Vibration: MIL-STD-202 Method 204
- 2.3 Solderability: J-STD-002
- 2.4 Board Flex: AEC Q200-005
- 2.5 Terminal Strength (SMD): AEC Q200-006

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

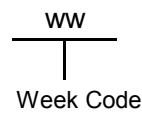
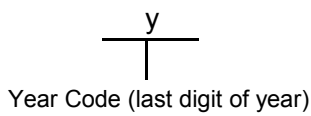
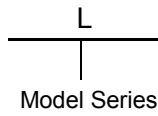
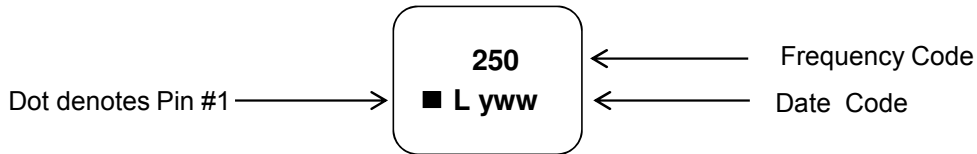
TYPE WL 2.5X2.0 HIGH PRECISION CRYSTAL OSCILLATOR

WL2125004Q

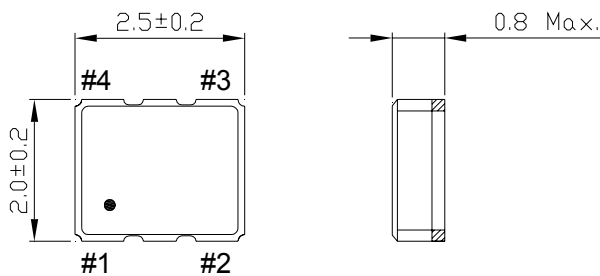
VER. B

26-Aug-18

MARKING

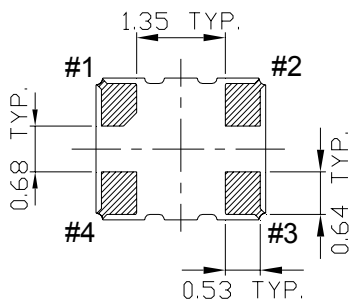
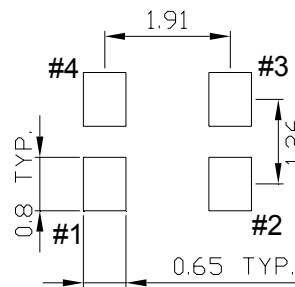


MECHANICAL DRAWINGS (Scale: None. Dimensions are in mm.)



Recommended Land Pattern

(TOP VIEW)



Pin Functions:

Pin	Function
1	OE
2	Ground
3	Output
4	V _{DD}

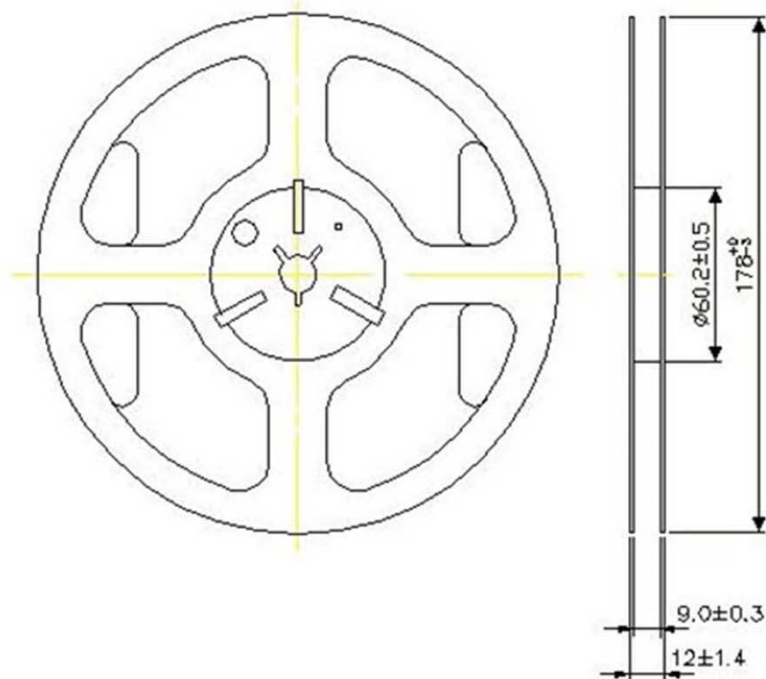
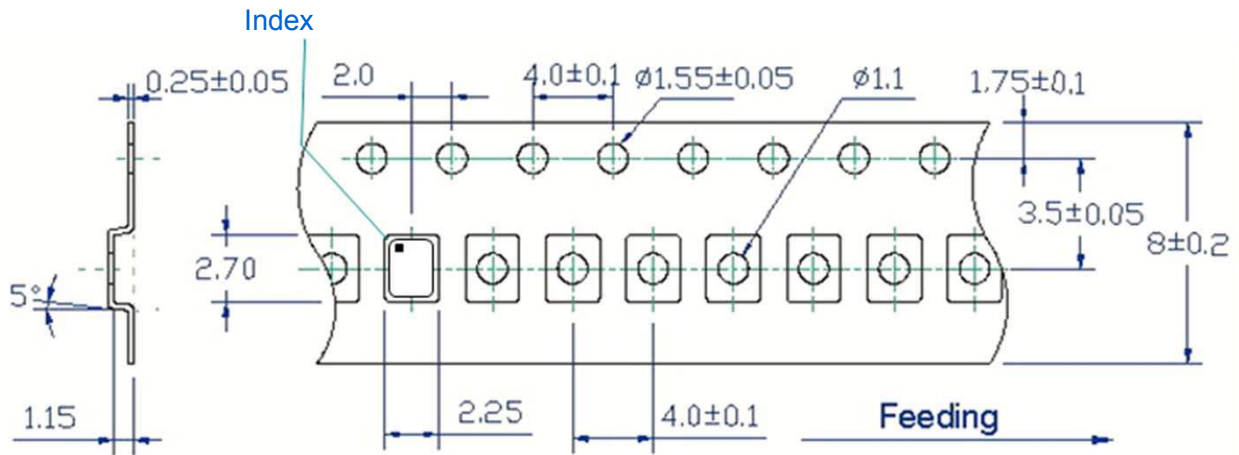
TYPE WL 2.5X2.0 HIGH PRECISION CRYSTAL OSCILLATOR

WL2125004Q

VER. B

26-Aug-18

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 WL 2.5X2.0 HIGH PRECISION CRYSTAL OSCILLATOR

WL2125004Q

VER. B

26-Aug-18

PACKING

