



A Product Line of  
Diodes Incorporated



## SPECIFICATION FOR APPROVAL

CUSTOMER	_____
NOMINAL FREQUENCY	25.000000 MHz
PRODUCT TYPE	<b>TYPE US 1.6x1.2 SMD CRYSTAL</b>
SPEC. NO. ( P/N )	US2500002Z
CUSTOMER P/N	_____
ISSUE DATE	June 28, 2018
VERSION	B

APPROVED	PREPARED	QA
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### Diodes Incorporated

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



# TYPE US 1.6x1.2 SMD CRYSTAL

## US2500002Z

VER. B 28-Jun-18

### ELECTRICAL SPECIFICATIONS

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	Fn	25.000000	MHz	
Mode of Oscillation	MO	AT Cut-Fundamental		
Calibration Load Capacitance	CL	20	pF	
Calibration Tolerance	FL	±30	ppm	at 25°C±3°C
Operating Temperature Range	TR	-20 to +80	°C	
Frequency Stability (Frequency Deviation over the Operating Temperature Range)	F/T	± 50	ppm	Reference to the Frequency at 25°C
Operating Drive Level		10	μW	
Maximum Drive Level		200	μW	
Equivalent Series Resistance	ESR	80	Ω	Max
Shunt Capacitance	C0	0.66	pF	Typ.
Motional Capacitance	C1	1	fF	Typ.
Motional Inductance	L1	40	mH	Typ.
Aging at 25°C		±3	ppm	Max, 1st year
Storage Temperature		-55 to +125	°C	
Insulation Resistance		500	MΩ	Min

※ 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).

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**US2500002Z**

VER. B 28-Jun-18

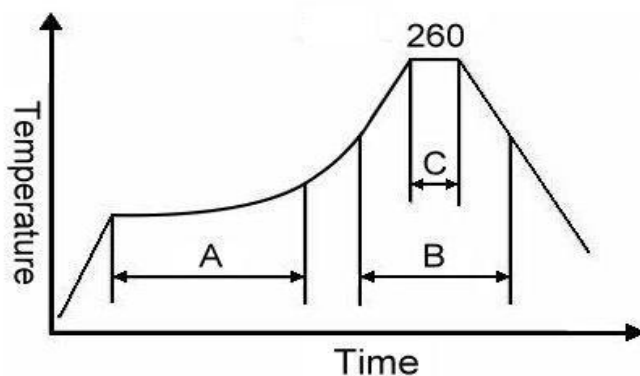
## RELIABILITY SPECIFICATIONS

### MECHANICAL AND ENVIRONMENTAL RATINGS:

- a) FINE LEAK TEST: JESD22-A109 (Condition 1A)
- b) GROSS LEAK TEST: JESD22-A109 (Condition C)
- c) MOISTURE RESISTANCE: JESD22-A113
- d) SHOCK: JESD22-B104 (Condition B)
- e) SOLDERABILITY : (RoHS version): J-STD-002
- f) VIBRATION: JESD22-B103
- g) SOLVENT RESISTANCE: JESD22-B107
- h) RESISTANCE TO SOLDERING HEAT (RoHS version): J-STD-020D Table 5.2 Pb free devices (3 cycles max)

## SUGGESTED IR REFLOW PROFILE

\*As per IPC-JEDEC J-STD-020D



Note:

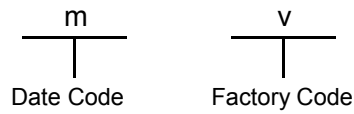
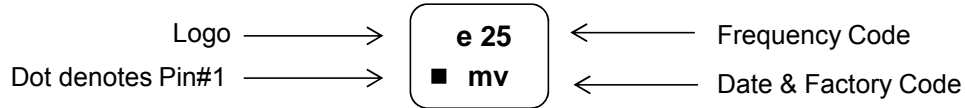
	Stage	Temperature	Time
A	Preheat	150~200°C	60~120 Sec
B	Primary Heat	217°C	60~150 Sec
C	Peak	260°C	10 Sec

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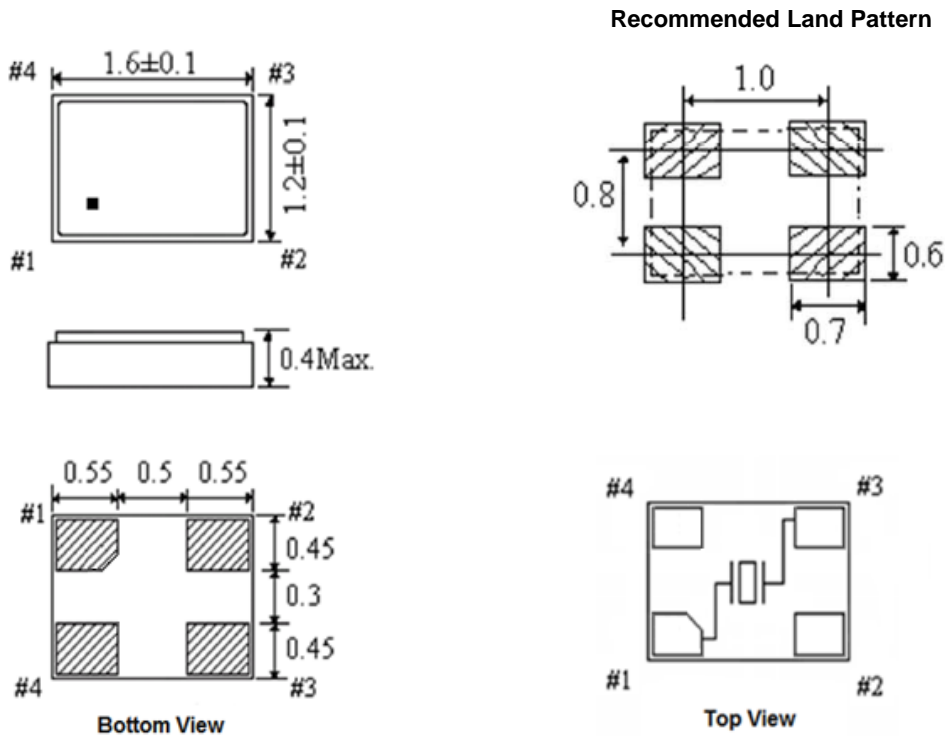
## US2500002Z

VER. B 28-Jun-18

### MARKING



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



**\*\* Recommended - Pin 1 & 3 : CRYSTAL  
Pin 2 & 4 : GND**

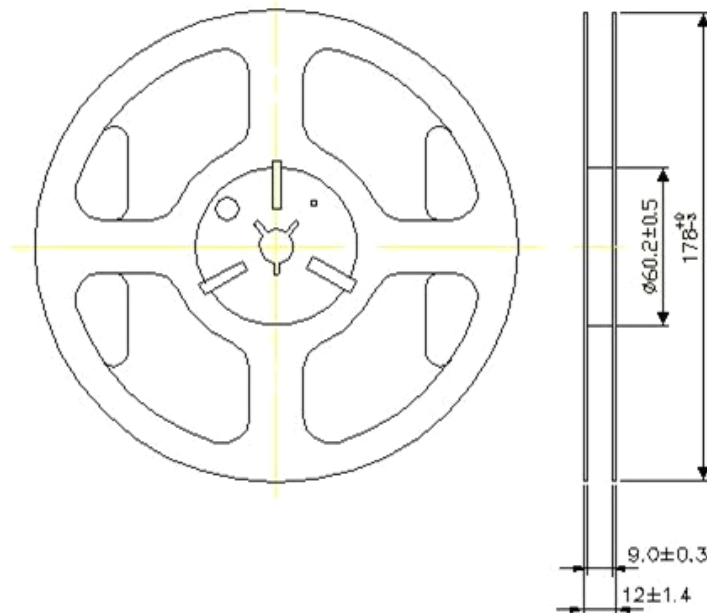
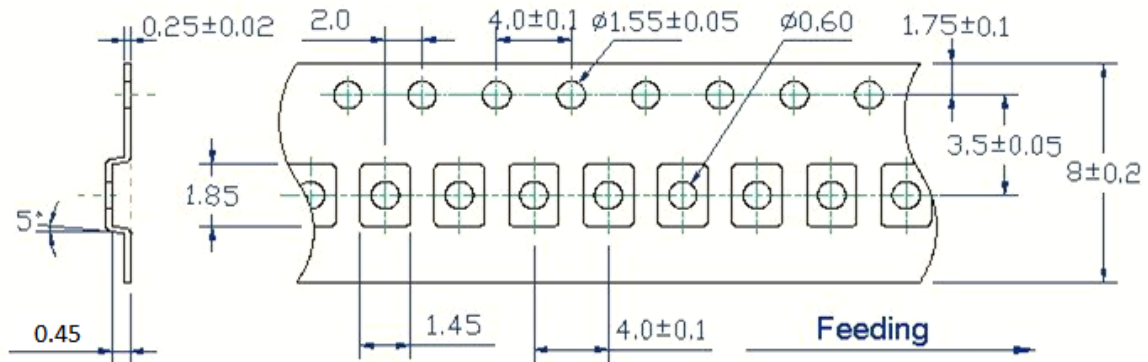
- Notes: 1. Package drawings are for reference only, and the appearances of objects may vary.  
Actual packages are based on the real product.
2. The marking dot denotes Pin#1.
3. The position and shape of the chamfer pin may vary and are based on the real product.

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## US2500002Z

VER. B 28-Jun-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.

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VER. B 28-Jun-18

### PACKING

