



A Product Line of
Diodes Incorporated



SPECIFICATION FOR APPROVAL

CUSTOMER _____

NOMINAL FREQUENCY _____ 25.000000 MHz _____




PRODUCT TYPE _____ **TYPE FW 2.0x1.6 SEAM SEALED CRYSTAL** _____

SPEC. NO. (P/N) _____ FW2500023Q _____

CUSTOMER P/N _____

ISSUE DATE _____ January 23, 2018 _____

VERSION _____ C _____

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

Diodes Incorporated

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

TYPE FW 2.0x1.6 SEAM SEALED CRYSTAL

FW2500023Q

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ELECTRICAL SPECIFICATIONS

| Item | Symbol | Specifications | Units | Notes |
|--|--------|--------------------|-------|---------------------------------------|
| Nominal Frequency | Fn | 25.000000 | MHz | |
| Mode of Oscillation | MO | AT Cut-Fundamental | | |
| Calibration Load Capacitance | CL | 10 | pF | |
| Calibration Tolerance | FL | ±15 | ppm | at 25°C±3°C |
| Operating Temperature Range | TR | -40 to +125 | °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 | Max. |
| Equivalent Series Resistance | ESR | 60 | Ω | Max |
| Shunt Capacitance | C0 | 3 | pF | Max |
| 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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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

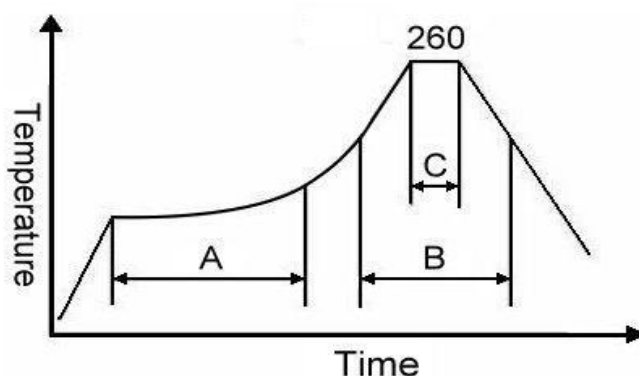
- 2.1 Mechanical Shock: MIL-STD-202 Method 213
- 2.2 Vibration: MIL-STD-202 Method 204
- 2.3 Solderability: J-STD-002
- 2.4 Board Flex: AEC Q200-005
- 2.5 Terminal Strength (SMD): AEC Q200-006

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:

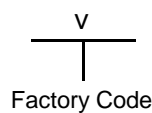
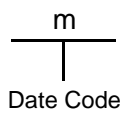
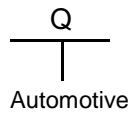
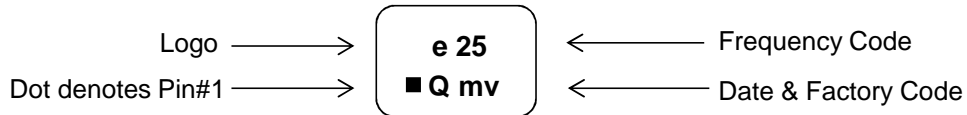
| | Stage | Temperature | Time |
|---|--------------|-------------|------------|
| A | Preheat | 150~200°C | 60~120 Sec |
| B | Primary Heat | 217°C | 60~150 Sec |
| C | Peak | 260°C | 10 Sec |

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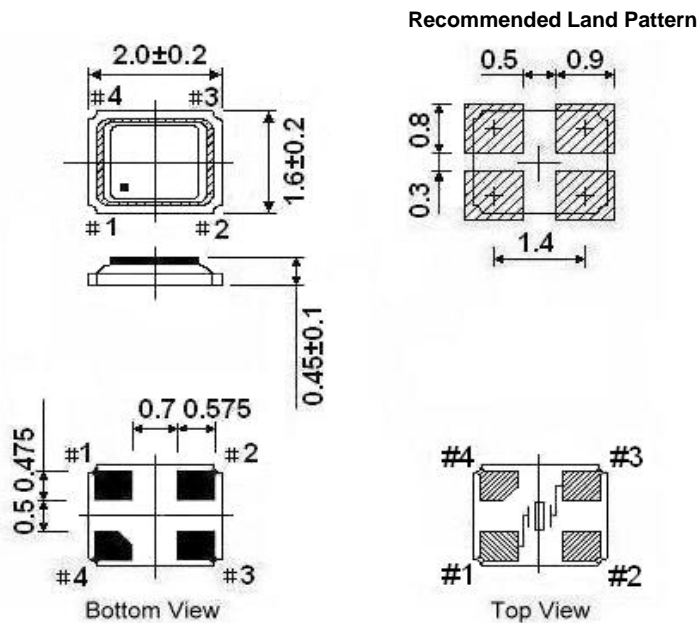
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MARKING



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



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

Notes:

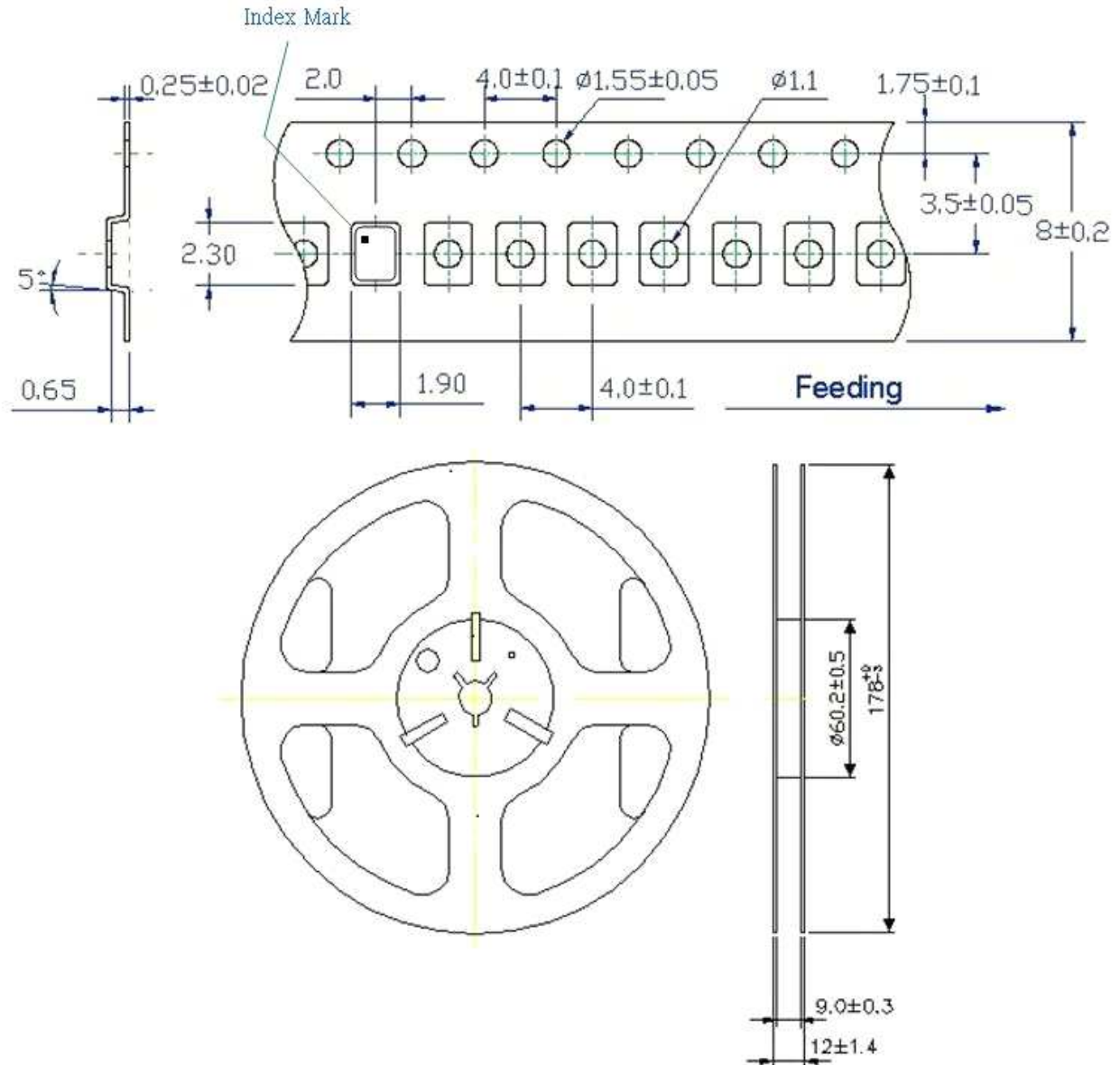
1. Package drawings are for reference only, and the appearances of objects may vary.
 Actual packages are based on the real product.
2. The marking dot denotes Pin#1.
3. The position and shape of the chamfer pin may vary and are based on the real product.

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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

