




PSE Technology Corporation

SPECIFICATION FOR APPROVAL

| | |
|-------------------|----------------------------|
| CUSTOMER | _____ |
| NOMINAL FREQUENCY | 32.768 KHz |
| PRODUCT TYPE | TYPE G5 SMD CRYSTAL |
| SPEC. NO. (P/N) | G53270004 |
| CUSTOMER P/N | _____ |
| ISSUE DATE | Mar.10,2014 |
| VERSION | G |

| APPROVED | PREPARED | QA |
|---|---|---|
|  |  |  |
| APPROVED BY CUSTOMER : | | AVL Status |
| Please return one copy with approval to PSE-TW | | |

PSE Technology Corporation

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- *RoHS Exception
- *HF-Halogen Free
- *REACH Compliant

TYPE G5 SMD CRYSTAL

G53270004

VER. G 10-Mar-14

ELECTRICAL SPECIFICATIONS

SRe Part Number : G53270004

| Parameters | Symbol | Specifications | Units | Notes |
|------------------------------|--------|----------------|--------|-----------------|
| Nominal Frequency | Fn | 32.768 | KHz | |
| Frequency Tolerance | FT | ± 20 | ppm | at 25 °C ± 5 °C |
| Load Capacitance | CL | 12.5 | pF | Typ. |
| Drive Level | DL | 1 | μW | Max. |
| Equivalent Series Resistance | ESR | 65 | KΩ | Max. |
| Temperature Coefficient | K | -0.035 | ppm/°C | Typ. |
| Operating Temperature Range | TR | -40~85 | °C | |
| Storage Temperature Range | | -55~85 | °C | |
| Aging | | ± 3 | ppm | Max 1st year |
| Insulation Resistance | | 500 | MΩ | Min. |

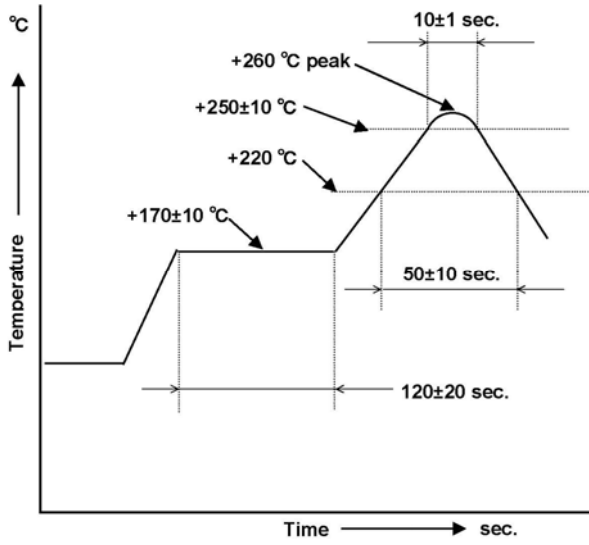
Reliability (Mechanical and Environmental Endurance)

| No. | Test Items | Test Method and Condition | Requirements |
|-----|------------|--|--|
| 1 | Vibration | (1) Vibration Frequency: 10 to 55Hz (2) Vibration Amplitude: 1.5mm (3) Cycle Time: 1-2min(10-55-10Hz) (4) Direction: X.Y.Z (5) Duration: 2h/each direction | Frequency Change: ±10ppm Max. Resistance Change: ±15% or 5kΩ Max. |
| 2 | Shock | 3 Times free drop from 75cm height to hard wooden board of thickness more than 30mm | Frequency Change: ±10ppm Max. Resistance Change: ±15% or 5kΩ Max. |
| 3 | Leakage | Put crystal units into a hermetic container and Helium for 0.5-0.6Mpa, and keep it for 1h; Check the leakage by a Helium leak detector | Leakage: 1×10^{-8} Pa·m ³ /s Max. |

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|----|----------------------------|---|--|
| 4 | Reflow soldering |  <p>Note: the temperature used herein means the temperature on the circuit board. Reflow: 2 times max.</p> | <p>Frequency Change: ± 10ppm Max. Frequency Change: ± 10ppm Max. Resistance Change: $\pm 25\%$ or $10k\Omega$ Max.</p> |
| 5 | Lead Strength (DIP) | The crystal lead with the 0.9kg(9N) power (keep it for 30s \pm 5s) and bend the crystal lead 90° with 0.45kg power and two times | The crystal lead is not abnormality |
| 6 | High Temperature Endurance | The crystal units shall be put in somewhere for 2 hrs at temperature of $-85^{\circ}\text{C} \pm 2^{\circ}\text{C}$, then keep it for 1 to 2 hrs under room temperature. | Frequency Change: ± 10 ppm Max. Resistance Change: $\pm 15\%$ or $5k\Omega$ Max. |
| 7 | Low Temperature Endurance | The crystal units shall be put in somewhere for 2 hrs at temperature of -25°C , then keep it for 1 to 2 hrs under room temperature. | |
| 8 | Humidity Endurance | The crystal units shall be put in somewhere at 40°C in relative humidity of 90-95% for 48 hrs, then keep it for one or two hours under room temperature. | |
| 9 | Temperature Cycle | Temperature shift from low(-40°C) to high(100°C , keep 30 mins), satisfy high(100°C) to low(-40°C , keep 30 mins), then go up to room temperature for 5 cycles. | |
| 10 | Salt Spray Test | Put the crystal units in the salt spray room (salt density: 5%) at the temperature of 35°C for 96 hrs. Then clean it with water and dry its surface. | The appearance shall has no abnormality and soldering is good. Frequency Change: ± 10 ppm Max. Resistance Change: $\pm 15\%$ or $5k\Omega$ Max. |

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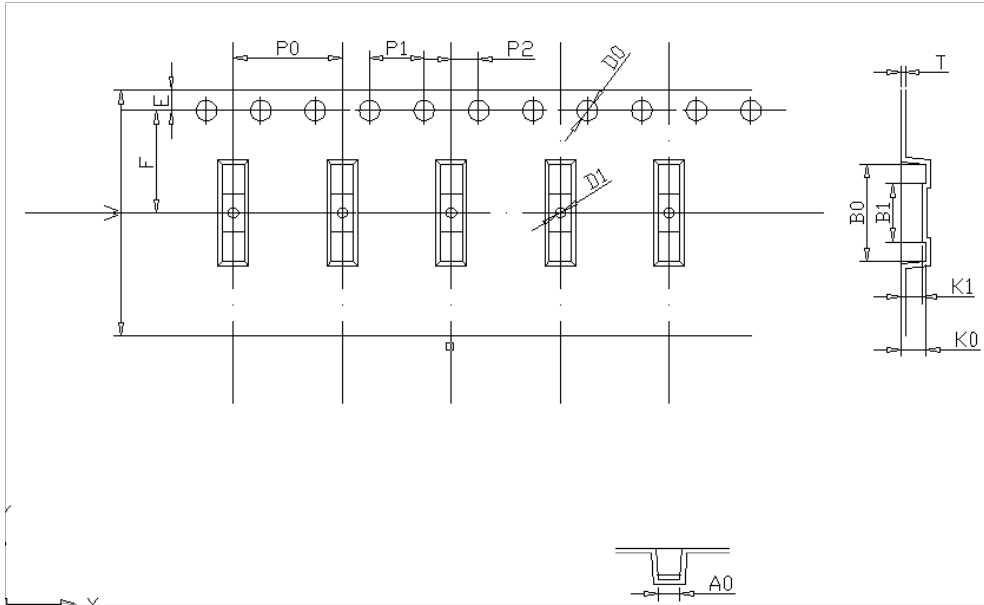
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TAPE AND REEL SPECIFICATION

1. Tape and Reel form conform to EIA-481-B.
2. The quantity of crystal units per reel shall be 3000PCS.
3. A "LABEL" on which necessary information is clearly written is on the surface of packing box and the reel.

CARRIER TAPE DIMENSIONS



| W | E | F | D0 | D1 | P0 | P1 | P2 |
|------------|----------|----------|-----------------------------------|-----------------------------------|-----------|-------------------|-----------|
| 16.00±0.30 | 1.75±0.1 | 7.50±0.1 | 1.5 ^{+0.1} ₋₀ | 1.0 ^{+0.1} ₋₀ | 8.00±0.1 | 4.00±0.1 | 2.00±0.05 |
| A0 | B0 | B1 | K0 | K1 | T | 10*P ₀ | |
| 1.70±0.1 | 7.20±0.1 | 4.0±0.1 | 1.7±0.1 | 1.25±0.1 | 0.35±0.05 | 40.00±0.20 | |

REEL DIMENSIONS

