StrongFirst

SPEC NO.: SRD-002L

# SPECIFICATION

TO:STE
Model Name: SAW Resonator
**PART NO: SSR315N01TO39**
CUSTOMER PART NO.:

# Approval sheet:

| | |
|---|---|
| Approved? | Yes<br>No. |
| Customer's comments are welcomed here.<br><br>Pls return this copy as a certificate of your approval by Fax.<br><br>Approved By Date: _____ | |

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# History Record

| Date | Part No. | SPEC No. | Discription. | Remarks. |
|---|---|---|---|---|
| 2012-3-28 | SSR315N01TO39 | | Initial issue | STE788 |
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| RoHS Compliant<br>Lead free<br>Lead-free soldering | ISO9001:2000<br>ISO14001:2004 | **Approved by** | **Check by** | **Design by** |
| | | **May-15-2007** | **May-10-2005** | **Jan-16-1999** |
| **Reversions** | **Total Page** | *Xu gang dong* | *Ai wei* | *Wang hon* |
| SRD-002L | | | | |

## 1. Package Dimension



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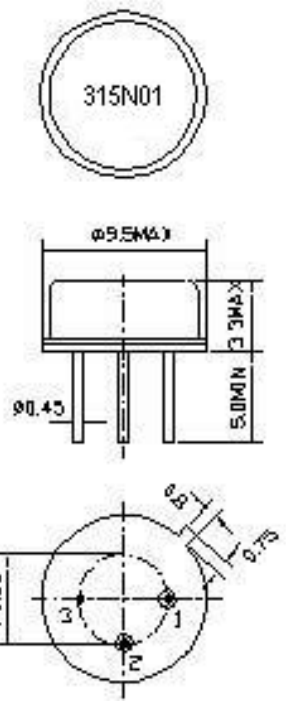
(TO-39/3A) Unit: mm




| Pin No. | Function |
|---|---|
| Pin 1 | Input |
| Pin 2 | Output |
| Pin 3 | Ground |

## 2. Marking

**315N01**

1. Black Ink Marking
2. N: Product Code
3. 01: One-port SAW Resonator
4. 315: Center Frequency

## 3. Equivalent LC Model



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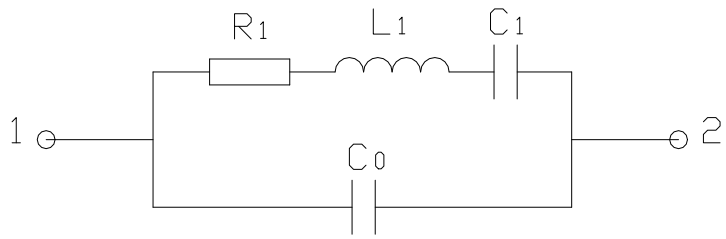


## 4. Performance

4.1 Maximum Rating

| Item | Value |
|---|---|
| Operation Temperature Range | -40℃ to +80℃ |
| Storage Temperature Range | -45℃ to +85℃ |
| DC Voltage | 10V |
| Source Power | 0 dBm |

4.2 Electronic Characteristics

| Item | Units | Minimum | Typical | Maximum |
|---|---|---|---|---|
| Center Frequency (fo) | MHz | 314.925 | 315 | 315.075 |
| Insertion Loss | dB | — | 1.5 | 2.0 |
| Quality Factor | | | | |
| Unloaded Q | — | — | 11,000 | — |
| 50Ω Loaded Q | — | — | 2,000 | — |
| Temperature Stability | | | | |
| Turnover Temperature | ℃ | — | 25 | — |
| Freq. Temp. Coefficient | ppm/℃ | — | 0.032 | — |
| Frequency Aging | ppm/yr | — | <±10 | — |
| DC Insulation Resistance | MΩ | 1.0 | — | — |
| RF Equivalent RLC Model | | | | |
| Motional Resistance R1 | Ω | — | 18 | 26 |
| Motional Inductance L1 | μH | — | 86 | — |
| Motional Capacitance C1 | fF | — | 1.56 | — |
| Shunt Static Capacitance C0 | pF | 1.7 | 2.0 | 2.3 |



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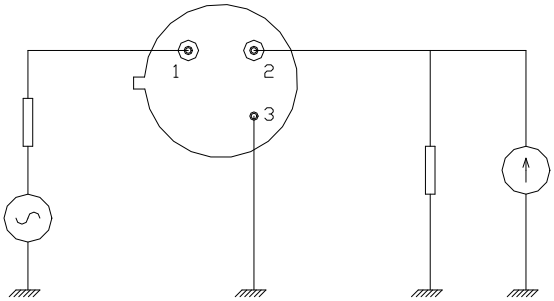
4.3 Test Circuit




Note: Reference temperature shall be 25±2℃. However, the measurement may be carried out at 5℃ to 35℃ unless there is a dispute.

## 5. Reliability

5.1 Resistance to Soldering heat:

5.1.1 The components shall remain within the electrical specifications after it soldered on the 1mm-thickness PCB board and dipped in the solder at 260℃±5℃ for 10±1 seconds.

5.1.2 The components shall remain within the electrical specifications after it soldered by electric iron, solder at 350℃±10℃ for 3~4 seconds, recovery time : 2h±0.5h.

5.2 Thermal Shock:

The components shall remain within the electrical specifications after being kept at the condition of heat cycle conditions: TA=-40℃±3℃, TB=85℃±2℃, t1=t2=30min, switch time≤3min & cycle time : 100 times, recovery time : 2h±0.5h.

5.3 The Temperature Storage:

5.3.1 High Temperature Storage: The components shall remain within the electrical specifications after being kept at the 85℃±2℃for 500 hours, recovery time : 2h±0.5h.

5.3.2 Low Temperature Storage: The components shall remain within the electrical specifications after being kept at the –40℃±3℃for 500 hours, recovery time : 2h±0.5h.

5.4 Humidity test:

The components shall remain within the electrical specifications after being kept at the condition of ambient temperature 60℃±2℃, and 90~95% RH for 500 hours.

5.5 Drop test:

The components shall remain within the electrical specifications after random free drops 10



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times from height of 1.0 meter onto concrete floor, and the specimens shall meet the electrical specifications in table 5, external visual inspection.

5.6 Solderability test:

at the condition of temperature 245℃±5℃ Depth: DIP 2/3 , SMD 1/5, time: 3.0s-5.0s, 80% or more of the immersed surface shall be covered with solder and well-proportioned.

5.7 Vibration Fatigue:

The components shall remain within the electrical specifications after loaded vibration at 10~55Hz, amplitude 1.5mm, X, Y, Z, direction, for 2 hours.

5.8Terminal strength:

The force 10±1 seconds of 19.6N is applied to each terminal, and 45° in the same direction 2 times with 2N bending force (Exception: SMD)

5.9 Mechanical Shock:

The components shall remain within the electrical specifications after 1000 shocks, acceleration 392 $m/s^2$ , duration 6ms.

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