




**SPECIFICATION SHEET**

|                                |   |
|--------------------------------|---|
| <b>SPECIFICATION SHEET NO.</b> | Q0618-CL11M06000S010  |
| <b>DATE</b>                    | June 18, 2023   |
| <b>REVISION</b>                | A0  |
| <b>DESCRIPTION</b>             | SMD Ceramic Resonator, 4741 Type, L4.7*W4.1*H1.4mm,<br>Built-in Capacitance, 3 pads, CRTS Series<br>11.06000MHz, Frequency Accuracy ±0.5%,<br>Operating Temp. Range -25°C ~+85°C,<br>Reflow Profile Condition 260 °C Max.<br>RoHS/RoHS III compliant, Tape/Reel, 1000pcs/Reel |
| <b>CUSTOMER</b>                |   |
| <b>CUSTOMER PART NUMBER</b>    |   |
| <b>CROSS REF. PART NUMBER</b>  |   |
| <b>ORIGINAL PART NUMBER</b>    | TGS CRTS 11.06MT-10 TLF   |
| <b>PART CODE</b>               | CL11M06000S010  |

|                         |   |   |
|-------------------------|---|---|
| <b>VENDOR APPROVE</b>   |   |   |
| Issued/Checked/Approved |  |   |
|                         |   |  |
| DATE: June 18, 2023     |   |   |

|                         |  |
|-------------------------|--|
| <b>CUSTOMER APPROVE</b> |  |
|                         |  |
| DATE:                   |  |
| 6/18/2023               |  |

**SMD CERAMIC RESONATOR CRTS SERIES**

**MAIN FEATURE**

- SMD Ceramic Resonator, L4.7\*W4.1\*H1.4mm, 3 pads
- Low cost & Built-in Capacitance
- Reflow Profile Condition 260 °C Max.
- Wide Frequency Range
- Cross more competitors part
- RoHS III compliant



**APPLICATION**

- Bluetooth, wireless communication set
- Communication Electronics

**PART CODE GUIDE**

**RFQ**  
Request For Quotation

|           |                 |          |            |
|-----------|-----------------|----------|------------|
| <b>CL</b> | <b>11M06000</b> | <b>S</b> | <b>010</b> |
| 1         | 2               | 3        | 4          |

1) CL: Part Code for SMD Ceramic Resonator, Built-in Capacitance, 3 pads, L4.7\*W4.1\*H1.4mm, CRTS series

2) 11M06000: Frequency range code for 11.060000MHz

3) S: SMD type, Package Tape/Reel, 1000pcs/Reel

4) 010: Specification code for original part No.: TGS CRTS 11.06MT-10 TLF

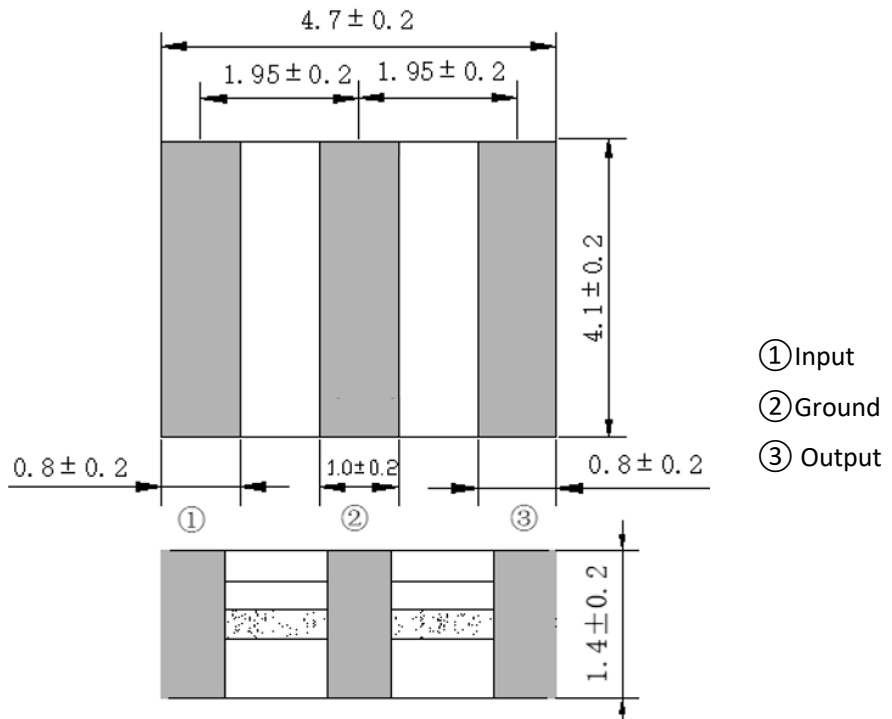
**SMD CERAMIC RESONATOR CRTS SERIES**

**DIMENSION (Unit: mm)**

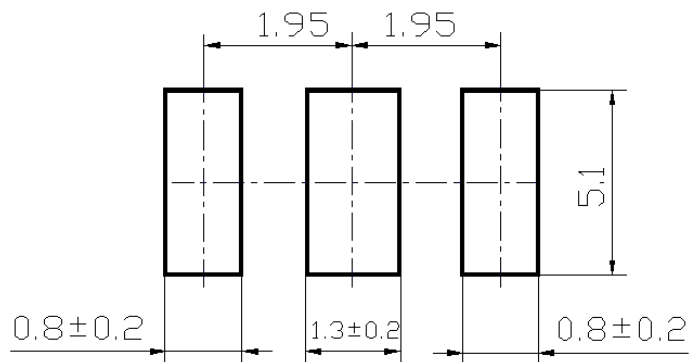
Image for reference



**CRTS**



**Recommend Pad Layout**



**SMD CERAMIC RESONATOR CRTS SERIES**
**ELECTRICAL PARAMETERS**

| Parameter   | Part No. Symbol              | Units   | Value                          |         |      | Condition                                   |
|---|------------------------------|---|--------------------------------|---------|------|---|
|   |                              |   | Min.                           | Typical | Max. |   |
| <b>Original Manufacturer</b>                            | TGS                          | TGS Crystals                                    |                                |         |      |   |
| <b>Holder Type</b>                                      | CRTS                         | SMD Ceramic Resonator, L4.7*W4.1*H1.4mm, 3 pads |                                |         |      |   |
| <b>Frequency Range</b>                                  | 11.06                        | MHz   | 11.06000                       |         |      |   |
| <b>Withstanding Voltage</b>                             | MT                           | V   | 50                             |         |      | @DC, 1 min                                  |
| <b>Insulation Resistance</b>                            |                              | MΩ  | 500                            |         |      | @AV, 1 min.                                 |
| <b>Operation Temperature</b>                            |                              | °C  | -25                            |         | +85  |   |
| <b>Storage Temperature</b>                              |                              | °C  | -55                            |         | +85  |   |
| <b>Rating Voltage</b>                                   |                              | V   | 6                              |         |      | DC  |
|   |                              |   | 15                             |         |      | p-p   |
| <b>Frequency Accuracy</b>                               |                              | %   | ±0.5                           |         |      |   |
| <b>Resonant Impedance</b>                               |                              | Ω   |                                | 30      | 60   |   |
| <b>Temperature Coefficient of Oscillation Frequency</b> |                              | %   |                                |         | ±0.3 | Oscillation Frequency drift, -25°C ~ +85°C) |
| <b>Oscillation Frequency Aging Rate (10 years)</b>      |                              | %   |                                |         | ±0.3 | From initial value                          |
| <b>IC application</b>                                   |                              | 1/6TC4069UBP×2                                  |                                |         |      |   |
| <b>Design Mode</b>                                      |                              |   |                                |         |      |   |
| <b>Built-in Capacitance</b>                             | -10                          | pF  | 10pF (±20%)                    |         |      |   |
| <b>Other</b>  | <b>Package</b>               | T   | Tape/Reel                      |         |      |   |
|   | <b>RoHS Status</b>           | LF  | RoHS III compliant             |         |      |   |
|   | <b>Add Value</b>             |   | N/A                            |         |      |   |
|   | <b>Internal Control Code</b> |   | 2 letter or digits; Blank: N/A |         |      |   |

Note: Original Part Number: TGS CRTS 11.06MT-10 TLF

**SMD CERAMIC RESONATOR CRTS SERIES**
**RELIABILITY**

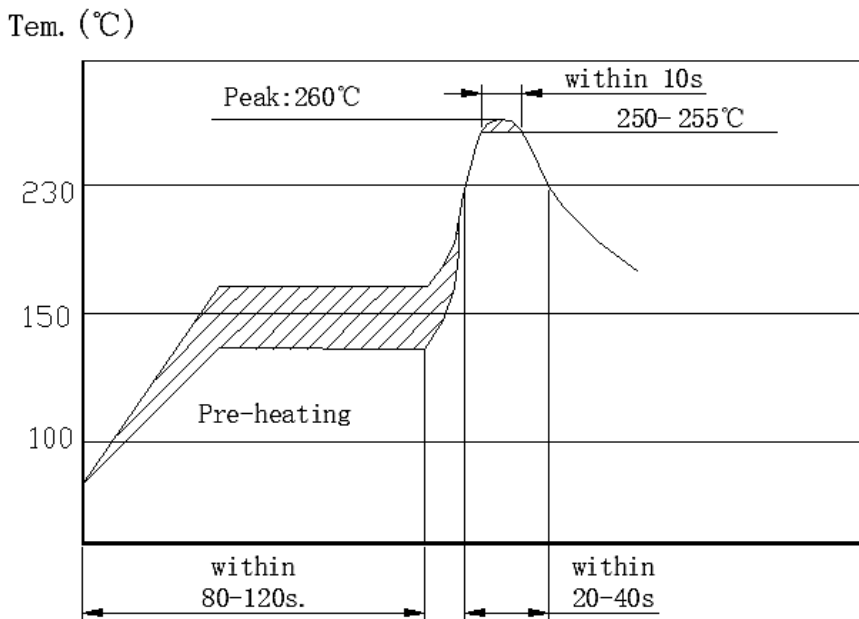
| Test Items                       | Test Method And Conditions  | Performance Requirements                               |
|----------------------------------|---|--|
| <b>Humidity</b>                  | Keep the resonator at 40°C±2°C and 90%-95% RH for 96h±4h. Then Release the resonator into the room Condition for 1h prior to the Measurement.   | It shall fulfill the specifications in Table 1.        |
| <b>High Temperature Exposure</b> | Subject the resonator to 85°C±2°C for 96h, then release the resonator into the room conditions for 1h prior to the measurement.   | It shall fulfill the specifications in Table 1.        |
| <b>Low Temperature Exposure</b>  | Subject the resonator to -55°C±2°C for 96h, then release the resonator into the room conditions for 1h prior to the measurement.  | It shall fulfill the specifications in Table 1.        |
| <b>Temperature Cycling</b>       | Subject the resonator to -25°C for 30 min. followed by a high temperature of 85°C for 30 min. Cycling shall be repeated 5 times with a transfer time of 15s. At the room temperature for 1h prior to the measurement. | It shall fulfill the specifications in Table 1.        |
| <b>Vibration</b>                 | Subject the resonator to vibration for 2h each in x, y and z axis With the amplitude of 1.5mm, the frequency shall be varied uniformly between the limits of 10 Hz—55Hz.  | It shall fulfill the specifications in Table 1.        |
| <b>Mechanical Shock</b>          | Drop the resonator randomly onto a wooden floor from the height of 100cm 3 times.   | It shall fulfill the specifications in Table 1.        |
| <b>Soldering Test</b>            | Passed through the re-flow oven under the following condition and left at room temperature for 1h before measurement  | It shall fulfill the specifications in Table 1.        |
| <b>Solder Ability</b>            | Dipped in 245°C±5°C solder bath for 3s±0.5 s with rosin flux (25wt% ethanol solution.)  | The terminals shall be at least 95% covered by solder. |
| <b>Board Bending</b>             | Mount a glass-epoxy board (Width=40mm,thickness=1.6mm),then bend it to 1mm displacement and keep it for 5s. (See the following figure 1)  | Mechanical damage such as breaks shall not occur.      |

**SMD CERAMIC RESONATOR CRTS SERIES**

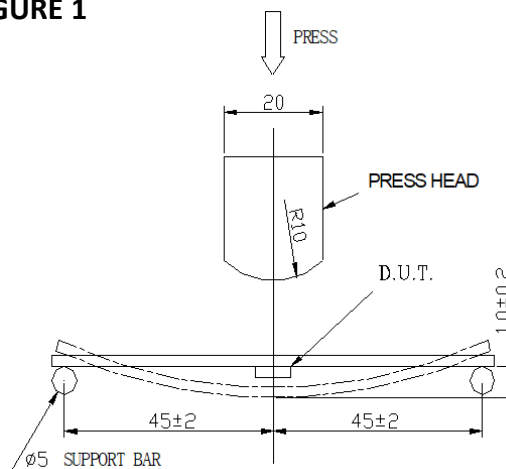
**Table 1**

| Item  | Specification after test |
|---|--------------------------|
| Oscillation Frequency Change $\Delta F_{osc}/F_{osc}$ (%) max             | $\pm 0.3$                |
| Resonant Impedance ( $\Omega$ ) max                                       | 60                       |
| The limits in the above table are referenced to the initial measurements. |                          |

**SUGGESTED REFLOW PROFILE (For Reference Only)**

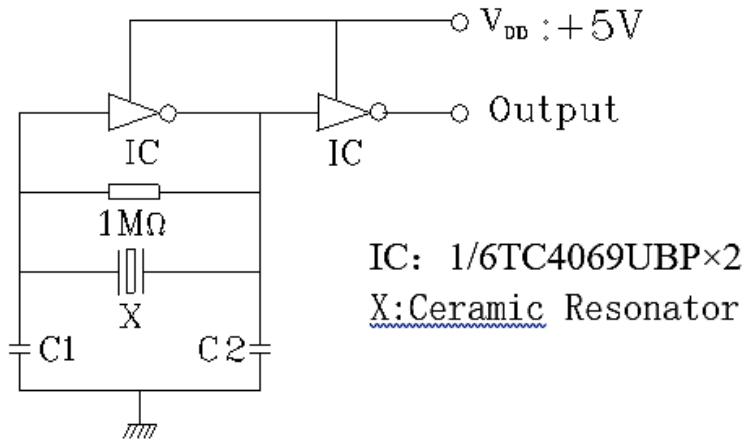


**BOARD BENDING TEST- FIGURE 1**



**SMD CERAMIC RESONATOR CRTS SERIES**

**TEST CIRCUIT (For Reference Only)**



**Note:**

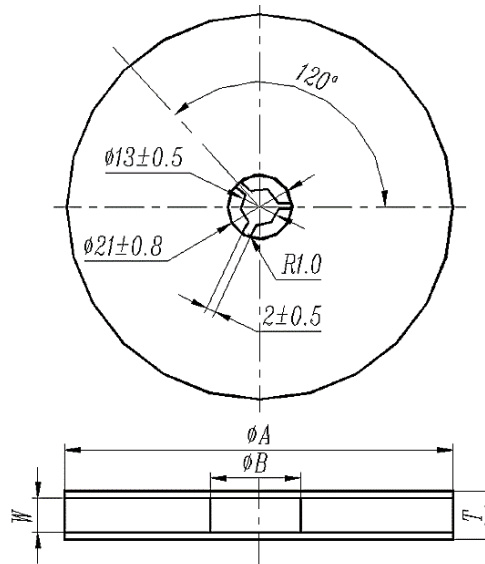
Parts shall be tested under the condition ( Temp.: 20±15°C, Humidity 65±20% R.H.) unless the standard condition (Temp.: 25±3 °C, Humidity :65±10% R.H.) is regulated to measure.

**SMD CERAMIC RESONATOR CRTS SERIES**

**TAPE/REEL (Unit: mm)**

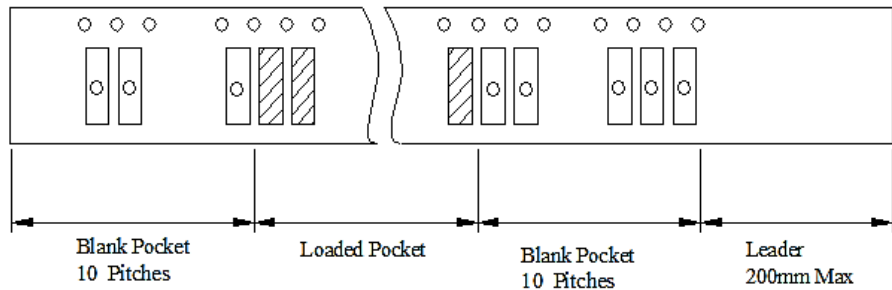
All Devices are packed in accordance with EIA standard RS-481-2 and specifications., 1000pcs/Reel, Carrier tape size-12

Reel

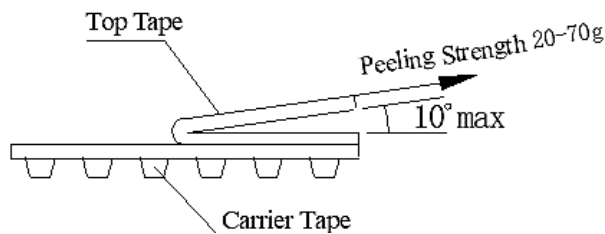


| Symbol | Dimension |
|--------|-----------|
| φA     | 180±3.0   |
| φB     | 60.0 Min. |
| W      | 12.4 Min. |
| T      | 19.4 Max. |

Packing Method Sketch Map



Test Condition Of Peeling Strength





## SMD CERAMIC RESONATOR CRTS SERIES

### NOTES

- Don't apply excess mechanical stress to the component and terminals at soldering. Do not use this product with bend.
- Do not clean or wash the component for it is not hermetically sealed.
- Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.
- Don't be close to fire.
- This specification mentions the quality of the component as a single unit. Please insure the component is thoroughly evaluated in your application circuit
- Expire date (Shelf life) of the products is 12 months after delivery under the conditions of a sealed and an unopened package. Please use the products within 12 months after delivery. If you store the products for a long time (more than 12 months), use carefully because the products may be degraded in the solder-ability or rusty. Please confirm solder-ability and characteristics for the products regularly.
- Exposure components under soldering condition that is exceeding our recommendation will increase the failure dangerous.
- Please contact us before using the product as automobile electronic component.
- Please return one of these specifications after your signature of acceptance.
- When something gets doubtful with this specifications, we shall jointly work to get an agreement.
- For questions on technology, prices and delivery, please contact our sales offices or e-mail:  
[sales@NextGenComponent.com](mailto:sales@NextGenComponent.com) .

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6/18/2023