

SPECIFICATION SHEET

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|--------------------------------|--|
| SPECIFICATION SHEET NO. | Q0501-CH9M210000S010 |
| DATE | May 01, 2023 |
| REVISION | A0 |
| DESCRIPTION | SMD Ceramic Resonator, 3731 Type, L3.2*W1.3*H1.0mm, Built-in Capacitance, 3 pads, CRTE Series 9.210MHz, Frequency Accuracy +/-0.5%, Operating Temp. Range -25°C ~+85°C, Reflow Profile Condition 260 °C Max. RoHS/RoHS III compliant, Tape/Reel |
| CUSTOMER | |
| CUSTOMER PART NUMBER | |
| CROSS REF. PART NUMBER | |
| ORIGINAL PART NUMBER | TGS CRTE 9.21MG-10 TLF |
| PART CODE | CH9M210000S010 |

| | | | |
|-------------------------|---|--|---|
| VENDOR APPROVE | | | |
| Issued/Checked/Approved |  |  |  |
| DATE: May 01, 2023 | | | |

| | |
|-------------------------|--|
| CUSTOMER APPROVE | |
| | |
| DATE: | |

5/1/2023

SMD CERAMIC RESONATOR CRTE SERIES

MAIN FEATURE

- SMD Ceramic Resonator, L3.2*W1.3*H1.0mm, , 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

RFQ

[Request For Quotation](#)

PART CODE GUIDE

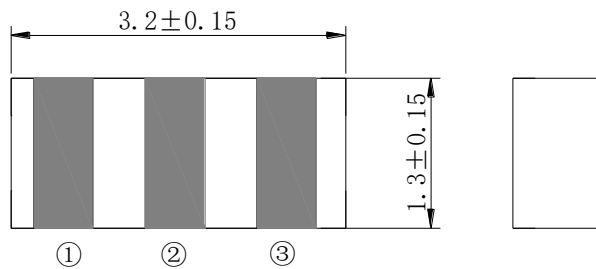
| CH | 9M210000 | S | 010 |
|----|----------|---|-----|
| 1 | 2 | 3 | 4 |

- 1) CH: Part Code for SMD Ceramic Resonator, Built-in Capacitance, L3.2*W1.3*H1.0mm , 3 pads, CRTE series
- 2) 9M210000: Frequency range code for 9.2100000MHz
- 3) S: SMD type, Package Tape/Reel, 3000pcs/Reel
- 4) 010: Specification code for original part No.: **TGS CRTE 9.21MG-10 TLF**

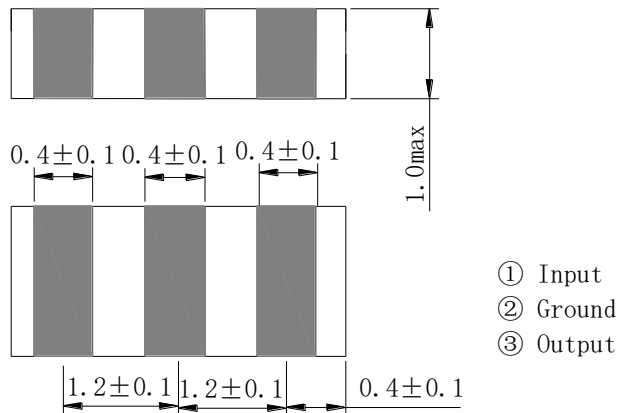
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DIMENSION (Unit: mm)

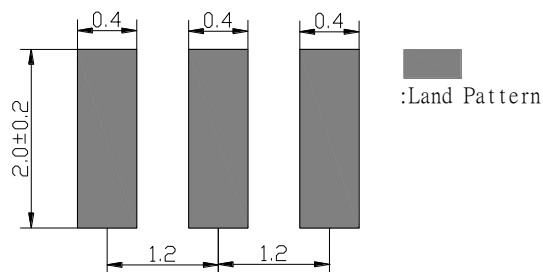
Image for reference



CRTE



Recommend Pad Layout



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ELECTRICAL PARAMETERS

| Parameter | Part No. Symbol | Units | Value | | | Condition |
|---|--------------------------------|---|--------------------|---------|------|---|
| | | | Min. | Typical | Max. | |
| Original Manufacturer | TGS | TGS Crystals | | | | |
| Holder Type | CRTE | SMD Ceramic Resonator, L3.2*W1.3*H1.0mm, 3 pads | | | | |
| Frequency Range | 9.21 | MHz | 9.210000 | | | |
| Withstanding Voltage | MG | V | 50 | | | @DC, 1 min |
| Insulation Resistance | | MΩ | 500 | | | @AV, 1 min. |
| Operation Temperature | | °C | -25 | | +85 | |
| Storage Temperature | | °C | -55 | | +85 | |
| Rating Voltage | | V | 6 | | | DC |
| | | | 15 | | | p-p |
| Frequency Accuracy | | % | ±0.5 | | | |
| Resonant Impedance | | Ω | | | 40 | |
| Temperature Coefficient of Oscillation Frequency | | % | | | ±0.3 | Oscillation Frequency drift, -25°C ~ +85°C) |
| Oscillation Frequency Aging Rate (10 years) | | % | | | ±0.3 | From initial value |
| IC application | | 1/6TC4069UBPx2 | | | | |
| Design Mode | | | | | | |
| Built-in Capacitance | -10 | pF | 10pF (+/-20%) | | | |
| Other | Package | T | Tape/Reel | | | |
| | RoHS Status | LF | RoHS III compliant | | | |
| | Add Value | | N/A | | | |
| | Internal Control Code * | | N/A | | | |

Note: 1) Original Part Number: **TGS CRTE 9.21MG-10 TLF**

2) * Internal Control Code- 2 letter or digits; Blank: N/A

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RELIABILITY

| Test Items | Test Method And Conditions | Performance Requirements |
|----------------------------------|--|--|
| Humidity | Keep the resonator at 40°C±2°C and 90%-95% RH for 96h. Then Release the resonator into the room Condition for 1h prior to the Measurement. | It shall fulfill the specifications in Table 1. |
| High Temperature Exposure | 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. |
| Low Temperature Exposure | 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. |
| Temperature Cycling | After temperature cycling of blow table was performed 5 times, resonator shall be measured after being placed in natural conditions for 1h. Time: 30 min.@ -25 +/--3°C ; Time: 30 min. @85 +/--3°C | It shall fulfill the specifications in Table 1. |
| Vibration | 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. |
| Mechanical Shock | Drop the resonator randomly onto a wooden floor from the height of 100cm 3 times. | It shall fulfill the specifications in Table 1. |
| Soldering Test | 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. |
| Solder Ability | 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. |
| Board Bending | 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. |

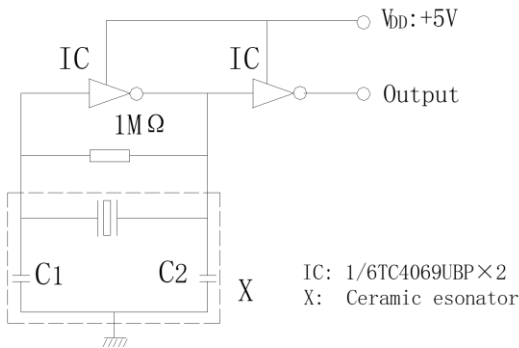
Table 1

| Item | Specification after test |
|---|--------------------------|
| Oscillation Frequency Change $\Delta F_{osc}/F_{osc}$ (%) max | ±0.3 |
| Resonant Impedance (Ω) max | 40 |

The limits in the above table are referenced to the initial measurements.

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TEST CIRCUIT (For Reference Only)



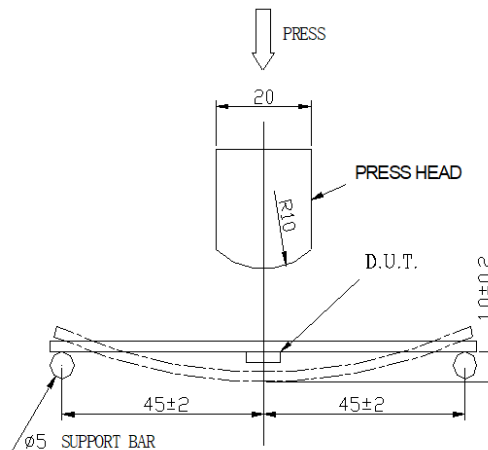
Note:

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.

SUGGESTED REFLOW PROFILE (For Reference Only)



BOARD BENDING TEST- FIGURE 1



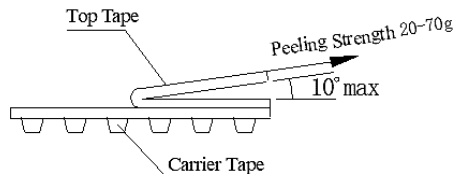
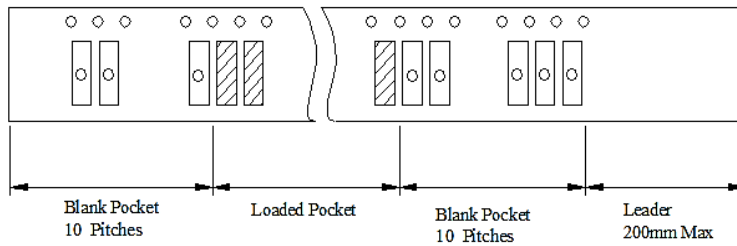
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TAPE/REEL (Unit: mm)

All Devices are packed in accordance with EIA standard RS-481-2 and specifications, 3000pcs/Reel



| Symbol | Dimension |
|----------|---------------|
| ϕA | 180 ± 3.0 |
| ϕB | 60.0 Min. |
| W | 8.4 Min. |
| T | 12.4 Max. |



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OTHERS

Caution

- 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 solderability or rusty. Please confirm solderability and characteristics for the products regularly.
- Please contact us before using the product as automobile electronic component.

Notice

- Please return one of these specifications after your signature of acceptance.
- When something gets doubtful with this specification, we shall jointly work to get an agreement

DISCLAIMER

NextGen Components, Inc. reserves the right to make changes to the product(s) and or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information

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