

# CERAMIC RESONATOR



Chip Ceramic Resonator **CSTC/CSTCC/CSTCV** Series

## Chip CERALOCK® with built-in load capacitance in an extremely small package.

MURATA's package technology expertise has enabled the development of the Chip CERALOCK® with built-in load capacitance.

High-density mounting can be realized because of the small package and the elimination of the need for an external load capacitor.

### FEATURES

1. Oscillation circuits do not require external load capacitors.
2. The series is available in a wide frequency range.
3. The resonators are extremely small and have a low profile.
4. No adjustment is necessary for oscillation circuits.



### APPLICATIONS

1. Clock oscillators for microprocessors.
2. Electronic control circuits for small electronic equipment such as hand held movie.
3. Audio-visual applications (Camcorder, Remote Controller, etc.)
4. Office automation equipments (DVD, CD-ROM, HDD, FDD, etc.)
5. Automotive electronics.(CSTC/CSTCC series)
6. Dual Tone Multi Frequency (DTMF) generator for cordless telephones.

### SPECIFICATIONS

| Item \ Type                                   | CSTC Series  | CSTCC Series    | CSTCV Series   |                |
|---|--------------|-----------------|----------------|----------------|
|   | CSTC□MG      | CSTCC□MG        | CSTCV□MTJ*6    | CSTCV□MXJ040*6 |
| Frequency Range                               | 2.00–3.49MHz | 3.50–10.00MHz*1 | 10.01–13.00MHz | 13.50–60.00MHz |
| Oscillation Frequency Initial Tolerance       | ±0.5%        | ±0.5%           | ±0.5%          | ±0.5%          |
| Oscillation Frequency Temperature Stability*2 | ±0.3%        | ±0.3%           | ±0.4%          | ±0.3%          |
| Aging*3                                       | ±0.3%        | ±0.3%           | ±0.3%          | ±0.3%          |

Oscillation Frequency Measuring Circuit

IC :1/6CD4069UBEX2\*4  
 V<sub>DD</sub> :5V (MTJ series:12V)  
 X :Chip CERALOCK®

\*1 Available in several standard frequencies. (ex. 3.58, 3.64, 3.68, 3.84, 4.00, 4.19, 4.91, 5.00, 6.00, 8.00, 10.00MHz)  
 \*2 At -20 to +80°C  
 \*3 For 10 years at room temperature  
 \*4 TC74HCU04 is used as the standard circuit for the MXJ040 series.  
 \*5 If connected with incorrect orientation, the above specification may not be guaranteed.  
 \*6 CSTCS series shall be recommended in automotive application.



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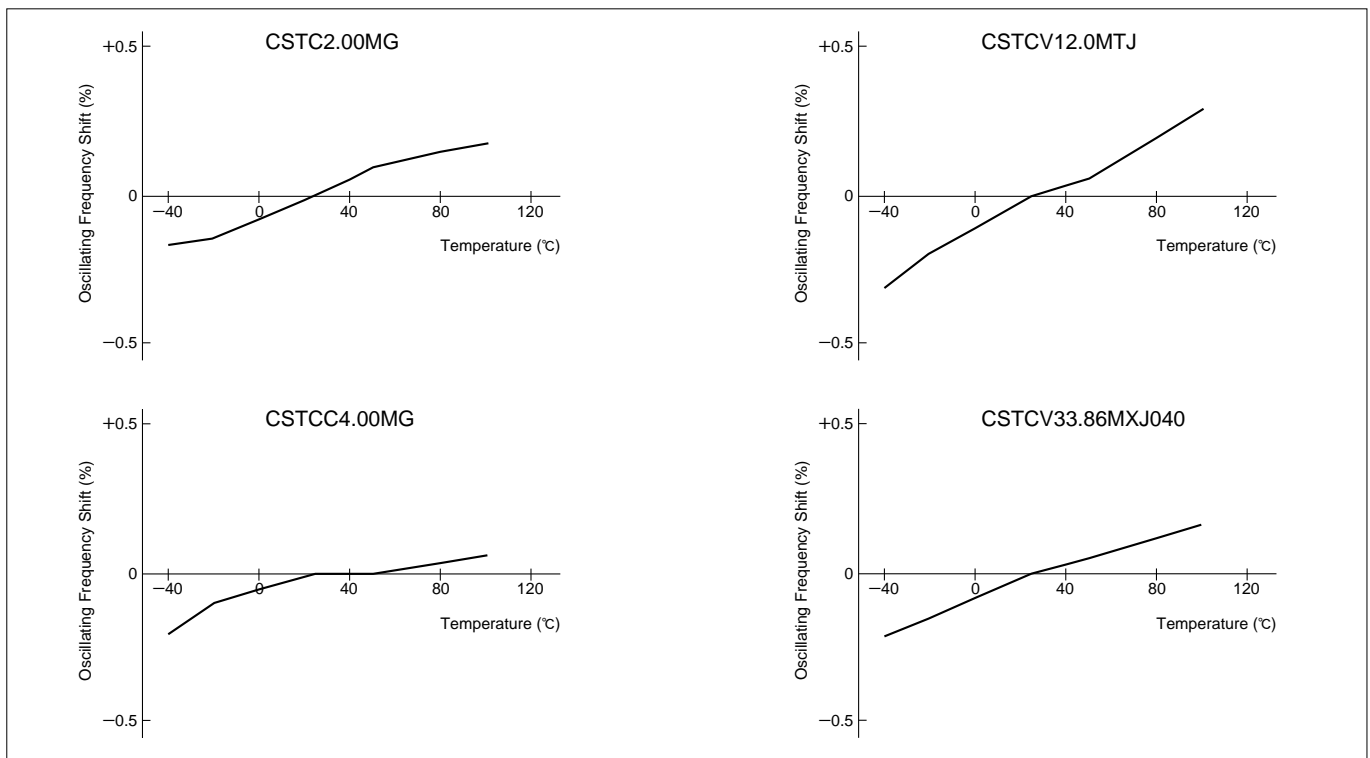
## Chip Ceramic Resonator **CSTC/CSTCC/CSTCV** Series

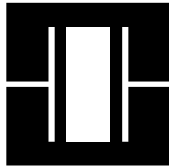
### ■ DIMENSIONS/STANDARD LAND PATTERN (in mm tol.:±0.3mm)

| Frequency             | 2.00—3.49MHz  | 3.50—10.00MHz   | 10.01—13.00MHz  | 13.50—60MHz  |
|-----------------------|---|---|---|--|
| Type                  | CSTC□MG   | CSTCC□MG  | CSTCV□MTJ   | CSTCV□MXJ040   |
| Dimensions            | <p>8.0±0.2, 2.0max, 2.5±0.2, 2.00, 2.0, 1.5±0.5, 4.75±0.5, 4.70±0.5, 2.2±0.5, 1.4±0.3, 2.2±0.5, (3), (2), (1)</p> | <p>7.2±0.2, 400, 0.45±0.3, 0.3±0.3, 0.5±0.05, 6.6max, 1.55±0.05, 1.2±0.2, 1.4±0.2, 1.2±0.2, 2.5±0.1, 2.5±0.1, 1.1±0.1</p> | <p>3.7±0.2, 1.2±0.2, 16.00, 0.7, 0.9, 0.7, 3.1±0.2, 0.6±0.3, 0.7±0.3, 0.6±0.3</p> | <p>0.7±0.3, 0.9±0.3, 0.7±0.3, 1.5±0.2, 1.5±0.2, 1.85±0.3</p> |
| Standard Land Pattern | <p>1.6, 1.4, 1.6, 1.4, 1.6, 3.5-4.5, 2.6, 2.6</p>   | <p>1.2, 1.2, 1.4, 1.2, 1.2, 3.8-4.4, Land Pattern, electrode</p>  | <p>0.7, 0.7, 0.9, 0.7, 0.7, 1.0, 0.5, 1.0, 0.5, 1.5, 1.5, 3.1±0.2</p>             |  |

\*Thickness varies with frequencies.

### ■ THE STABILITY OF OSCILLATION FREQUENCY WITH TEMPERATURE VARIATION



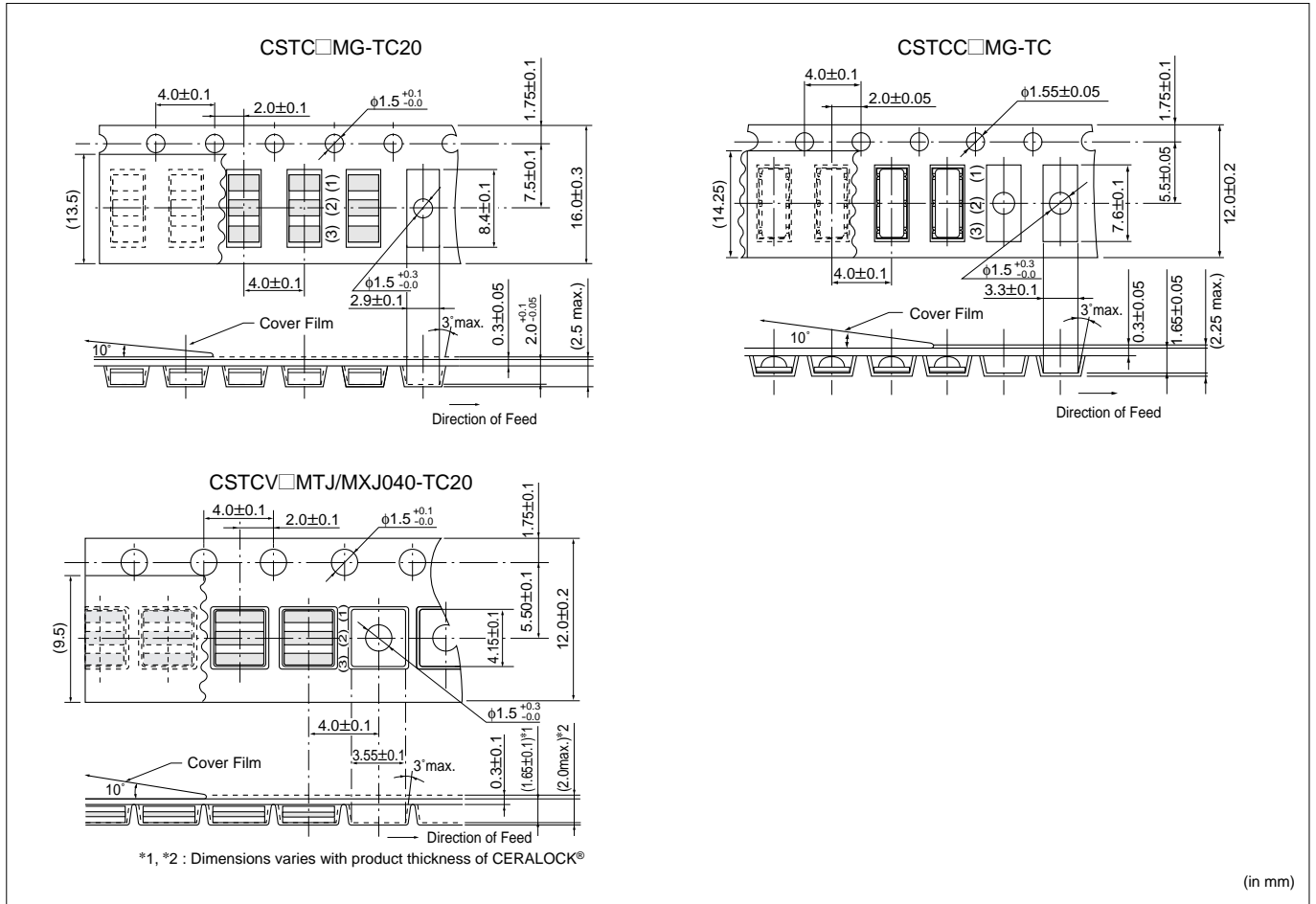


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## Chip Ceramic Resonator **CSTC/CSTCC/CSTCV** Series

### ■ DIMENSIONS OF PLASTIC TAPE

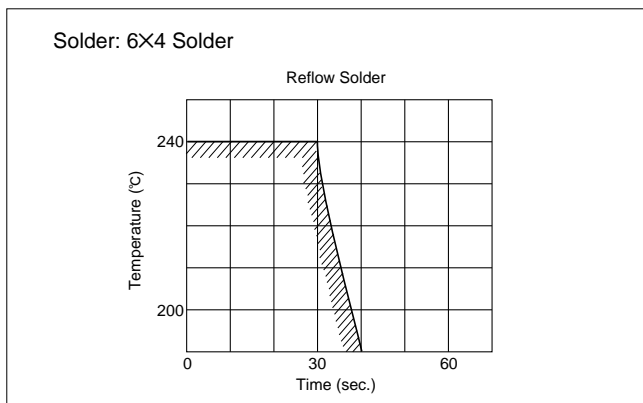


### ■ APPLICATIONS

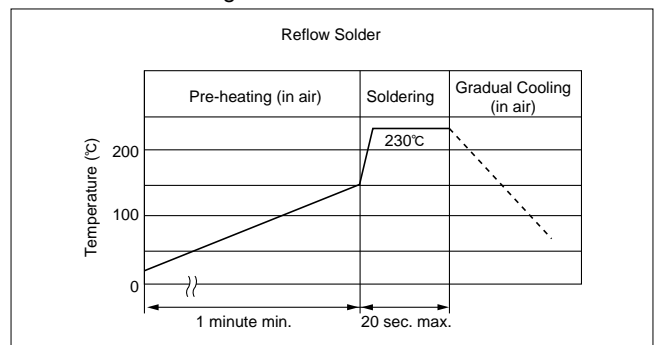
#### 1. Soldering Conditions

##### ● Soldering Temperature and Time

Solder within the temperature and time combinations illustrated by the slanted lines in the following graph. If soldering is repeated, please note that the allowed time is the accumulated time.



#### ● Standard Soldering Conditions



#### ● Soldering Method

Soldering conditions : Soldering iron temperature 270°C  
Soldering time less than 3 seconds

#### 2. Cleaning Conditions

Please contact us concerning cleaning method before use. For protection of ozone layer, we also investigate the non-ODC cleaning process for our devices. For more details, please contact us before use.