

Ceramic Resonators (CERALOCK®)



Chip Type Three Terminals CSTCC/R/E/G/V/W 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 capacitors.

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

■ Features

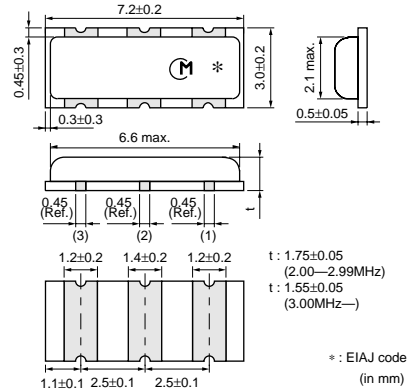
1. Oscillation circuits do not require external load capacitors.
2. The series is available in a wide frequency range.
3. The resonators are extremely small and have a low profile.
4. No adjustment is necessary for oscillation circuits.

■ Applications

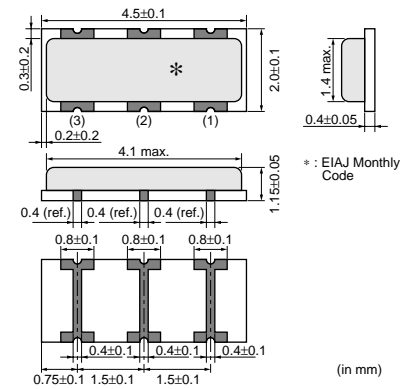
1. Clock oscillators for microprocessors
2. Electronic control circuits for small electronic equipment such as hand held video camera
3. Audio-visual applications (Camcorder, Remote Controller, etc.)
4. Office automation equipments (DVD, CD-ROM, HDD, FDD, etc.)
5. Automotive electronics (CSTCC_G_A series,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



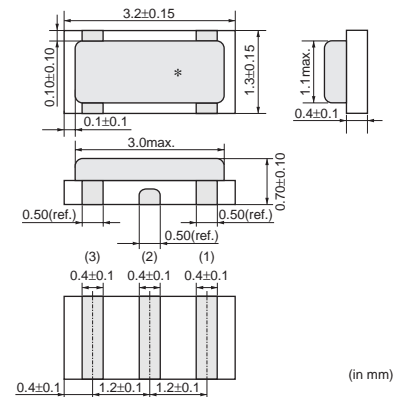
CSTCC_G(A)
2.00-3.99MHz



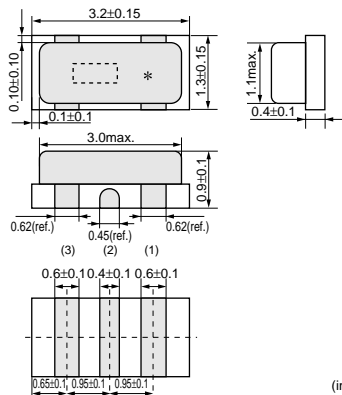
CSTCR_G(B)
4.00-7.99MHz



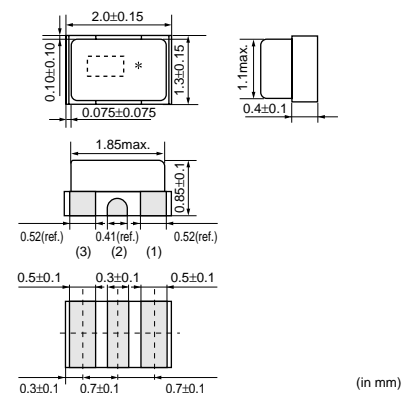
CSTCE_G(A)
8.00-12.50MHz



CSTCE_V(A)
12.51-20.00MHz

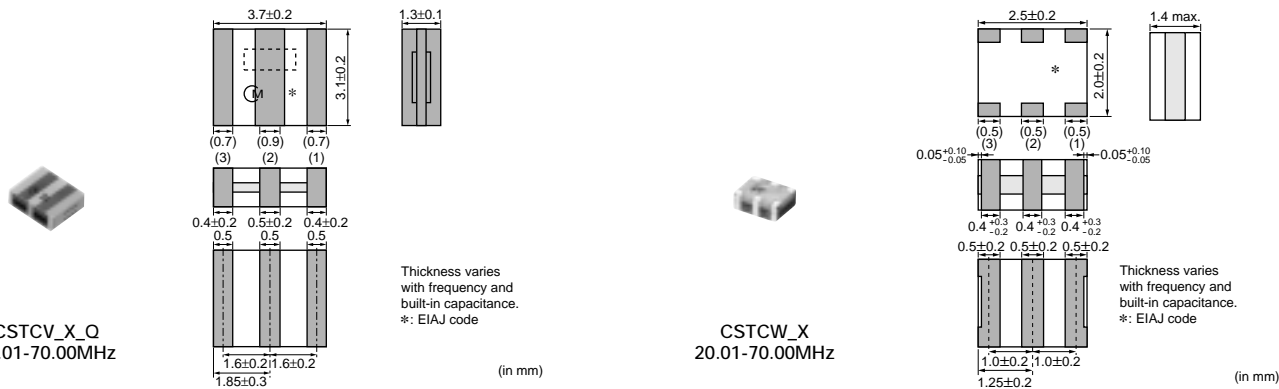


CSTCG_V
20.00-33.86MHz
(Ultra small)



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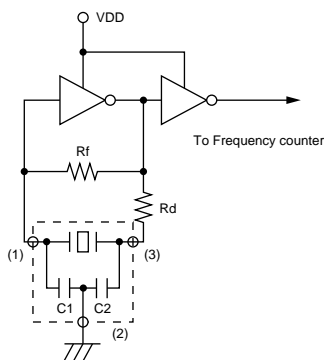
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Part Number	Oscillating Frequency (MHz)	Initial Tolerance (%)	Temp. Stability (%)	Temperature Range (°C)	Use
CSTCC_G	2.00 to 3.99	±0.5	±0.3 [±0.4%:Built-in Capacitance 47pF type within Freq.2.00 to 3.49MHz]	-20 to +80	For consumer electronics
CSTCC_G_A	2.00 to 3.99	±0.5	±0.4 [-0.6% to +0.3%:Built-in Capacitance 47pF type within Freq.2.00 to 3.49MHz]	-40 to +125	For automotive electronics
CSTCR_G	4.00 to 7.99	±0.5	±0.2	-20 to +80	For consumer electronics
CSTCR_G_B	4.00 to 7.99	±0.5	±0.15	-40 to +125	For automotive electronics
CSTCE_G	8.00 to 12.50	±0.5	±0.2	-20 to +80	For consumer electronics
CSTCE_G_A	8.00 to 12.50	±0.5	±0.2	-40 to +125	For automotive electronics
CSTCE_V	12.51 to 20.00	±0.5	±0.3	-20 to +80	For consumer electronics
CSTCE_V_A	12.51 to 20.00	±0.5	±0.3	-40 to +125	For automotive electronics
CSTCG_V	20.00 to 33.86	±0.5	±0.3	-20 to +80	For consumer electronics
CSTCV_X_Q	20.01 to 70.00	±0.5	±0.3	-40 to +125	For automotive electronics
CSTCW_X	20.01 to 70.00	±0.5	±0.2	-20 to +80	For consumer electronics

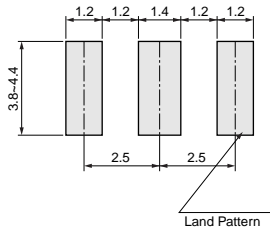
Irregular or stop oscillation may occur under unmatched circuit conditions. Please check the actual conditions prior to use.

■ Oscillation Frequency Measuring Circuit



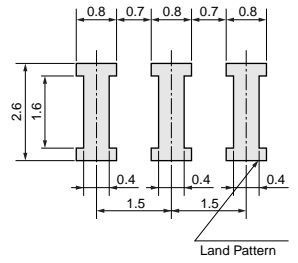
■ Standard Land Pattern Dimensions

CSTCC_G(A)



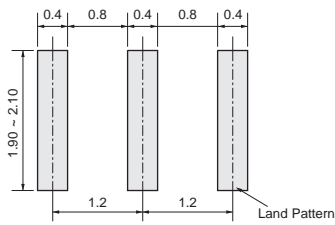
(in mm)

CSTCR_G(B)



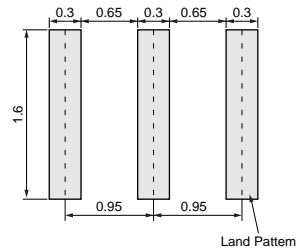
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CSTCE_G(A)



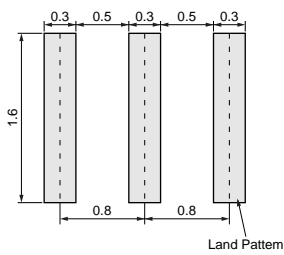
(in mm)

CSTCE_V(A)



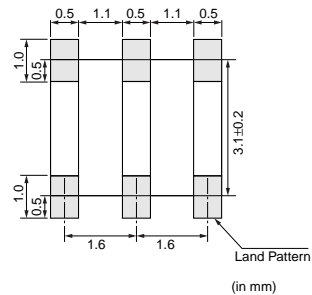
(in mm)

CSTCG_V



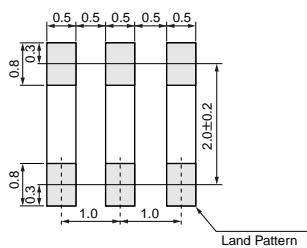
(in mm)

CSTCV_X_Q



(in mm)

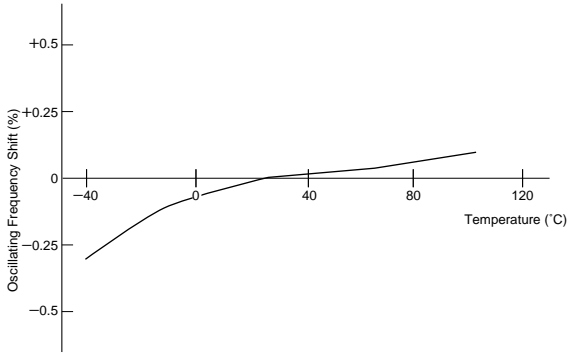
CSTCW_X



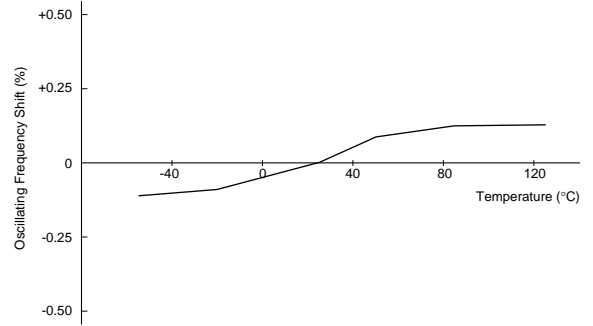
(in mm)

■ Oscillation Frequency Temperature Stability

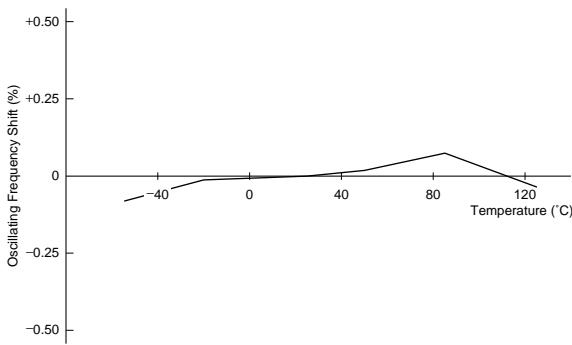
CSTCC_G



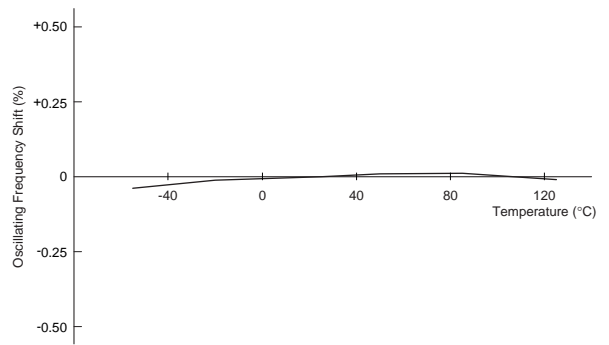
CSTCC_G_A



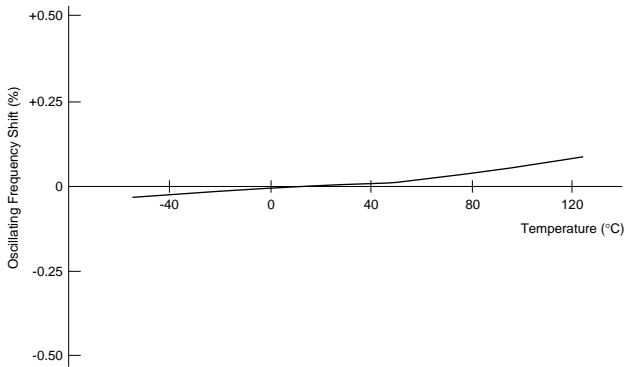
CSTCR_G(B)



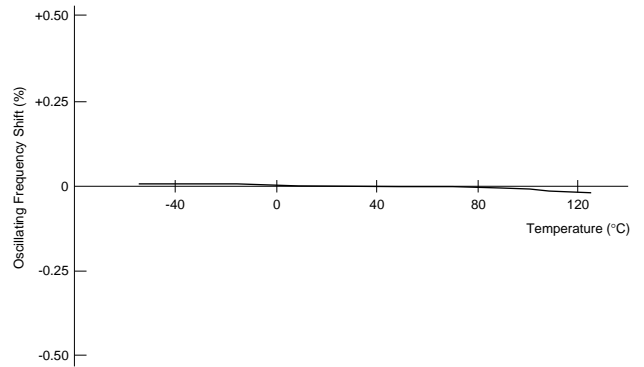
CSTCE_G(A)



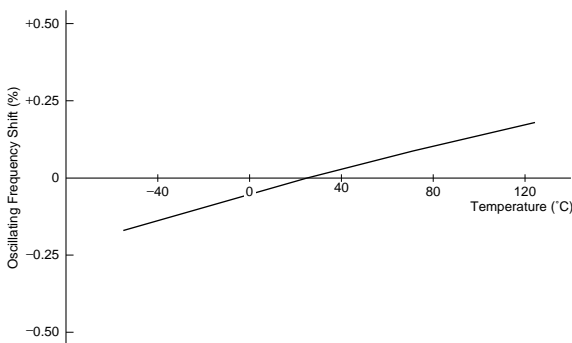
CSTCE_V(A)



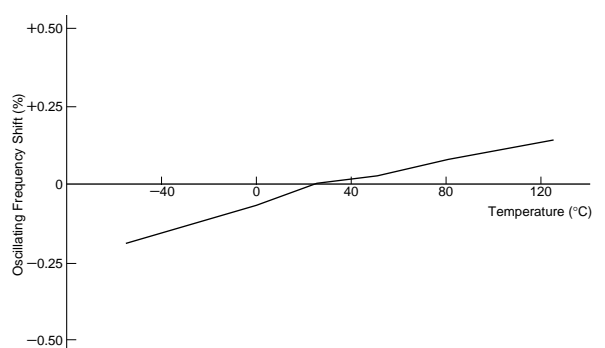
CSTCG_V



CSTCV_X(Q)



CSTCW_X



● Part Numbering

CERALOCK[®] (MHz)

(Part Number)

CS	T	CE	16M0	V53	***	-R0
①	②	③	④	⑤	⑥	⑦

① Product ID

Product ID	
CS	Ceramic Resonators

② Frequency/Capacitance

Code	Frequency/Capacitance
A	MHz No capacitance built-in
T	MHz Built-in Capacitance

③ Structure/Size

Code	Structure/Size
LS	Round Lead Type
CC	Cap Chip Type
CR/CE/CG	Small-cap Chip Type
CV	Monolithic Chip Type
CW	Small Monolithic Chip Type

④ Nominal Center Frequency

Expressed by four-digit alphanumerics. The unit is in hertz (Hz).
Decimal point is expressed by capital letter "M".

⑤ Design

Code	Design
G□□	Thickness Shear mode
T/V□□	Thickness Expander mode
X□□	Thickness Expander mode (3rd overtone)

□□ indicates initial frequency tolerance and load capacity.

⑥ Individual Specification

Code	Individual Specification
***	Three-digit alphanumerics express "Individual Specification".

With standard products, "⑥ Individual Specification" is omitted, and "⑦ Package Specification Code" is carried up.

⑦ Packaging

Code	Packaging
-B0	Bulk
-A0	Radial Taping H ₀ =18mm
-R0	Plastic Taping ø=180mm
-R1	Plastic Taping ø=330mm

Radial taping is applied to lead type and plastic taping to chip type.