⚠Note • Please read rating and ⚠CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.
• This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.

P16E.pdf
Jul.15,2011

Ceramic Resonators (CERALOCK®)

muRata

MHz Chip Type -Standard Frequency Tolerance for General Usage-

Chip type CERALOCK(R) with built-in load capacitors provides an extremely small package.
MURATA's package technology expertise has enabled the development of the Chip CERALOCK(R) 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.
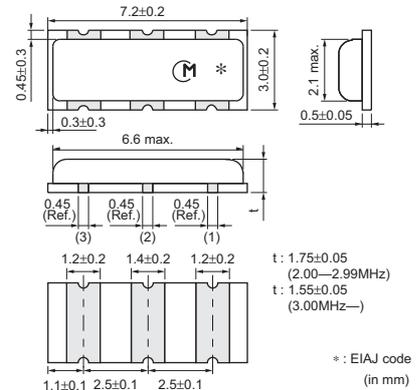
■ Features

1. Oscillation circuits do not require external load capacitors.
2. Available in a wide frequency range.
3. Extremely small and have a low profile.
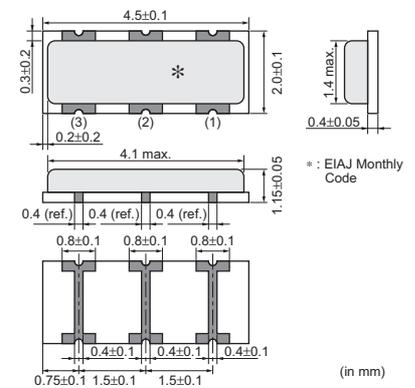4. No adjustment is necessary for oscillation circuits.

■ Applications

1. Clock oscillators for microprocessors
2. Small electronic equipment such as handheld phone, digital video camcorder (DVC), digital still camera (DSC), portable audio player, etc.
3. Storage media and memory (HDD, Optical storage device, FDD, Flash memory card, etc.)
4. Office automation equipment (Mobile PC, Mouse, Keyboard, etc.)
5. Audio-visual applications (TV, DVD-HDD recorder, Audio equipment, Remote control, etc.)
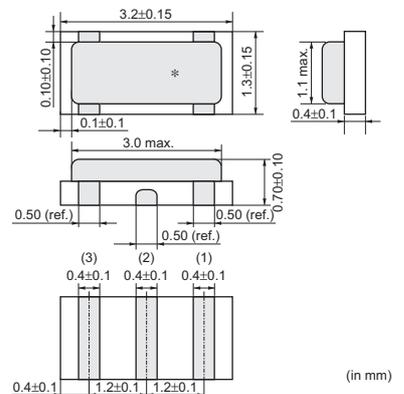6. Home appliances (Air conditioner, Microwave oven, Refrigerator, Washing machine, etc.)
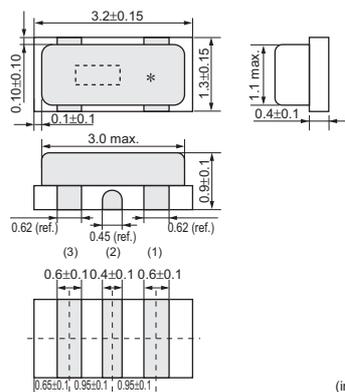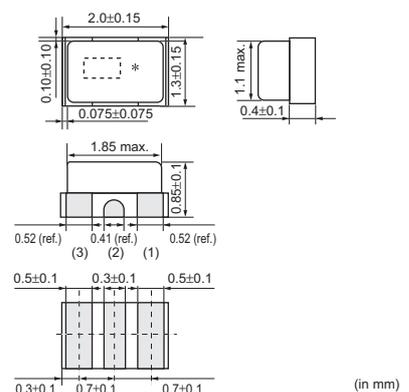
CSTCC_G
2.00-3.99MHz

CSTCR_G
4.00-7.99MHz

CSTCE_G/CSTCE_G_Z
8.00-13.99MHz

CSTCE_V
14.00-20.00MHz

CSTCG_V
20.00-33.86MHz
(Ultra Small)

muRata

⚠Note • Please read rating and ⚠CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.
• This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.

◸ Continued from the preceding page.

CSACW_X
20.01-70.00MHz

2.5±0.2
2.0±0.2
1.2 max.
(0.5) (0.5)
0.05 +0.10 −0.05
0.05 +0.10 −0.05
0.4 +0.3 −0.2   0.4 +0.3 −0.2
0.5±0.2   0.5±0.2
1.0±0.2 1.0±0.2
1.25±0.2

Thickness varies with frequency.
✳: EIAJ code

(in mm)

CSTCW_X
20.01-70.00MHz

2.5±0.2
2.0±0.2
1.4 max.
(0.5) (0.5) (0.5)
(3) (2) (1)
0.05 +0.10 −0.05
0.05 +0.10 −0.05
0.4 +0.3 −0.2 0.4 +0.3 −0.2 0.4 +0.3 −0.2
0.5±0.2 0.5±0.2 0.5±0.2
1.0±0.2 1.0±0.2
1.25±0.2

Thickness varies with frequency and built-in capacitance.
✳: EIAJ code

(in mm)

4

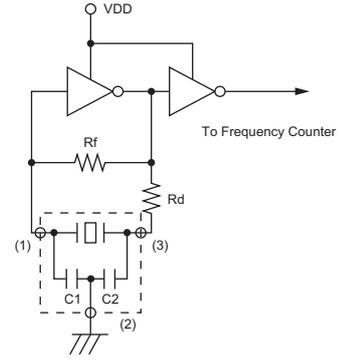| Part Number	Oscillating Frequency (MHz)	Initial Tolerance	Temperature Stability (%)	Temperature Range (°C)
CSTCC_G	2.00 to 3.99	±0.5%	±0.3 [±0.4%:Built-in Capacitance 47pF type within Freq.2.00 to 3.49MHz]	-20 to 80
CSTCR_G	4.00 to 7.99	±0.5%	±0.2	-20 to 80
CSTCE_G	8.00 to 13.99	±0.5%	±0.2	-20 to 80
CSTCE_G_Z	8.00 to 13.99	±0.5%	±0.2	-40 to 125
CSTCE_V	14.00 to 20.00	±0.5%	±0.3	-20 to 80
CSTCG_V	20.00 to 33.86	±0.5%	±0.3	-20 to 80
CSACW_X	20.01 to 70.00	±0.5%	±0.2	-20 to 80
CSTCW_X	20.01 to 70.00	±0.5%	±0.2	-20 to 80

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

muRata

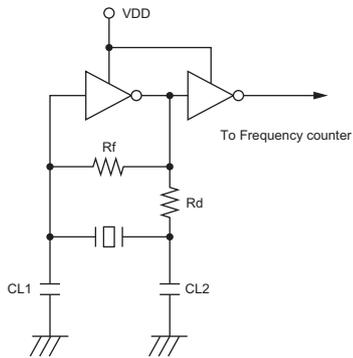⚠Note • Please read rating and ⚠CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.
• This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.

P16E.pdf
Jul.15,2011

■ Oscillation Frequency Measuring Circuit

CSTCR_G/CSTCE_G/CSTCE_G_Z/CSTCE_V/CSTCG_V

CSTCC_G/CSTCW_X

CSACW_X

⚠Note • Please read rating and ⚠CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.
• This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.

P16E.pdf
Jul.15,2011

■ Standard Land Pattern Dimensions

CSTCC_G
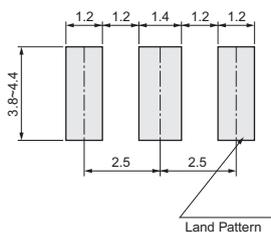
(in mm)

CSTCR_G
(* This Land Pattern is not common to
CSTCR_G15C, CSTCR_G15L, CSTCR_GH5L.)
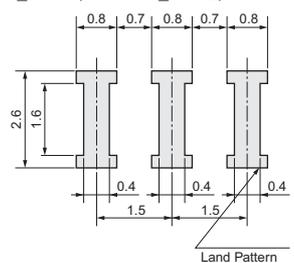
(in mm)

CSTCE_G/CSTCE_G_Z
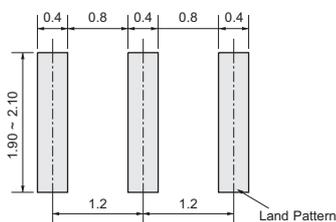
(in mm)

CSTCE_V
(* This Land Pattern is not common to
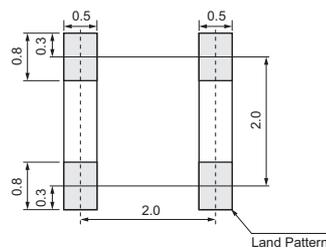CSTCE_V13C, CSTCE_V_C, CSTCE_V13L, CSTCE_VH3L.)
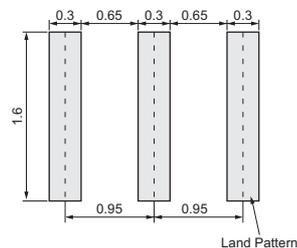
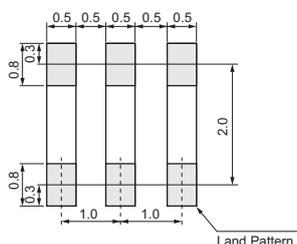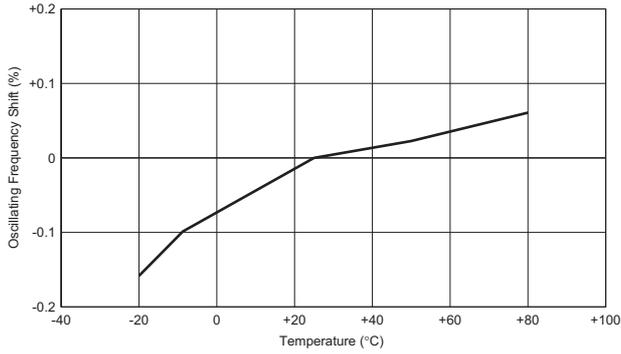(in mm)

CSTCG_V
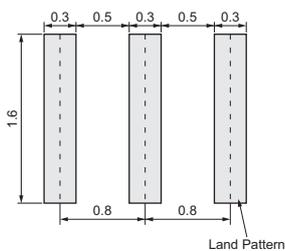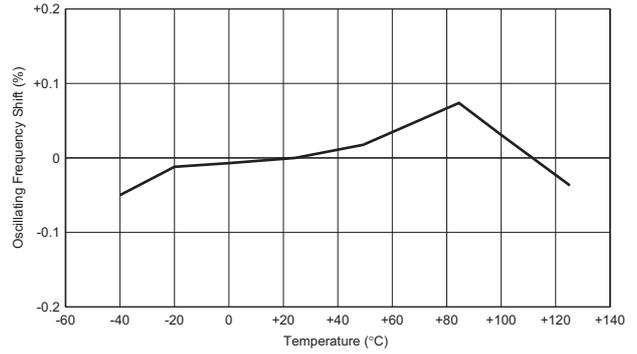

(in mm)

CSACW_X

(in mm)

CSTCW_X

(in mm)

muRata

⚠Note • Please read rating and ⚠CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.
　　　　• This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.

P16E.pdf
Jul.15,2011

■ Oscillation Frequency Temperature Stability

CSTCC_G

CSTCR_G

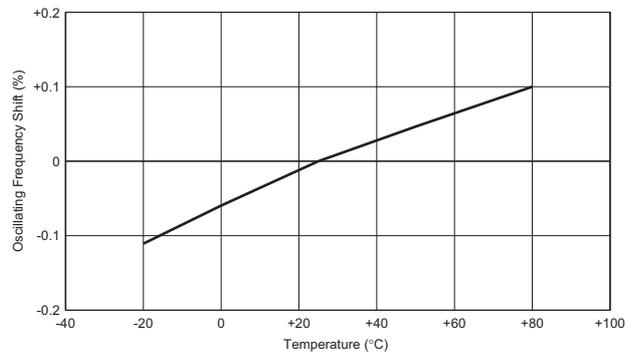
CSTCE_G/CSTCE_G_Z
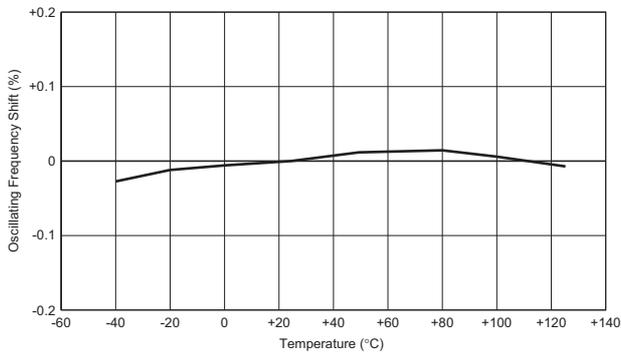
CSTCE_V

CSTCG_V

CSACW_X

CSTCW_X

4

⚠️Note • Please read rating and ⚠️CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.
• This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.

P16E.pdf
Jul.15,2011
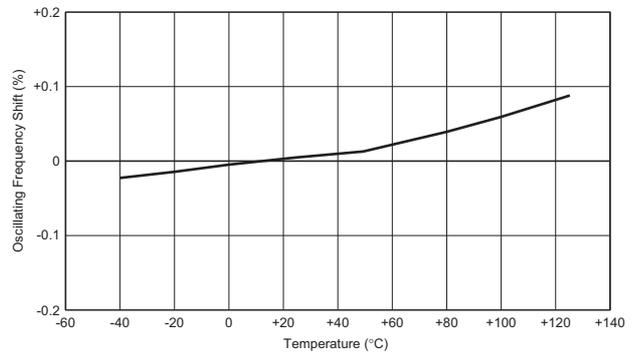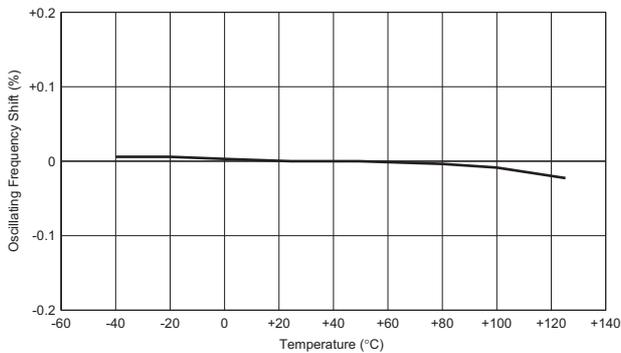
Application Circuits Utilization

■ µPD78F0533GB (Renesas)

8-bit Microcomputer

Vdd=5.0V

10kΩ

H   6

IC : µPD78F0533GB

11   10   12   L
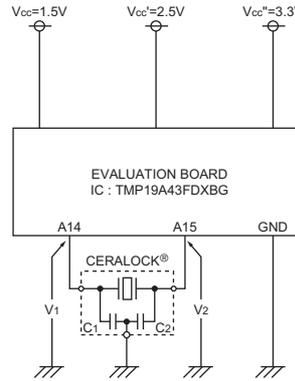
0.1µF

CERALOCK®

V₁   V₂

C₁   C₂
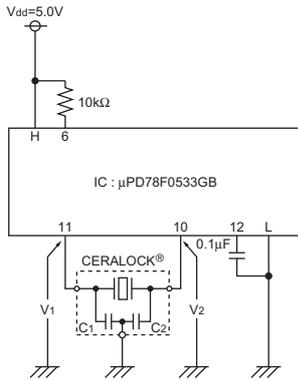
H: 15, 16, 47
L: 9, 13, 14, 48

CERALOCK®: CSTCR4M00G55-R0
C₁=39pF (Typ.)
C₂=39pF (Typ.)
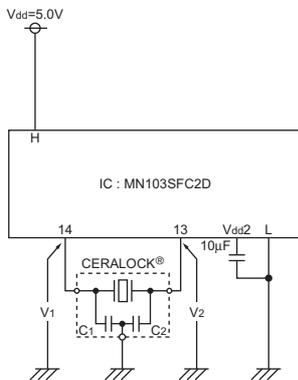
■ TMP19A43FDXBG (Toshiba)

32-bit Microcomputer

Vcc=1.5V   Vcc'=2.5V   Vcc"=3.3V

EVALUATION BOARD
IC : TMP19A43FDXBG

A14   A15   GND

CERALOCK®

V₁   V₂

C₁   C₂

Xin: A14
Xout: A15

CERALOCK®: CSTCE10M0G52-R0
C₁=10pF (Typ.)
C₂=10pF (Typ.)

■ MN103SFC2D (Panasonic)

32-bit Microcomputer

Vdd=5.0V

H

IC : MN103SFC2D

14   13   Vdd2   L
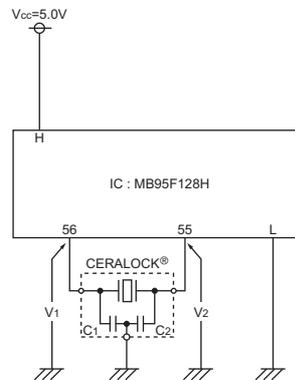
10µF

CERALOCK®

V₁   V₂

C₁   C₂

H: 9, 17, 34
L: 7, 15, 36
Vdd2: 16, 38

CERALOCK®: CSTCR5M00G55Z-R0
C₁=39pF (Typ.)
C₂=39pF (Typ.)

■ MB95F128H (Fujitsu)

8-bit Microcomputer

Vcc=5.0V

H

IC : MB95F128H

56   55   L

CERALOCK®

V₁   V₂

C₁   C₂

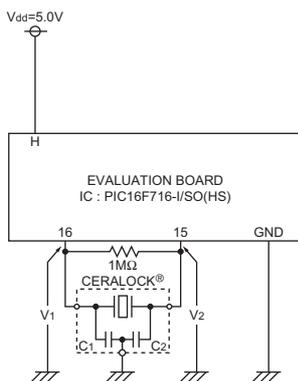H: 3, 28, 51, 79
L: 4, 29, 54, 57

CERALOCK®: CSTCE8M00G52-R0
C₁=10pF (Typ.)
C₂=10pF (Typ.)

■ PIC16F716-I/SO (Microchip)

8-bit Microcomputer
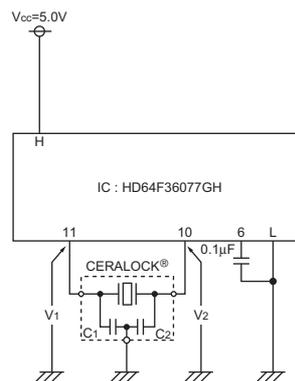
Vdd=5.0V

H

EVALUATION BOARD
IC : PIC16F716-I/SO(HS)

16   15   GND

1MΩ
CERALOCK®

V₁   V₂

C₁   C₂

CERALOCK®: CSTCE12M0G52-R0
C₁=10pF (Typ.)
C₂=10pF (Typ.)

■ HD64F36077GH (Renesas)

16-bit Microcomputer

Vcc=5.0V

H

IC : HD64F36077GH

11   10   6   L

0.1µF

CERALOCK®

V₁   V₂

C₁   C₂

H: 3, 7, 12
L: 8, 9

CERALOCK®: CSTCE8M00G52-R0
C₁=10pF (Typ.)
C₂=10pF (Typ.)

muRata

⚠Note • Please read rating and ⚠CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.
• This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.

P16E.pdf
Jul.15,2011

Application Circuits Utilization

� Continued from the preceding page.

■ μPD70F3215HYGC (Renesas)

32-bit Microcomputer

Vdd=5.0V
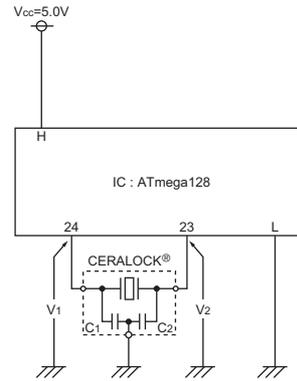
IC : μPD70F3215HYGC
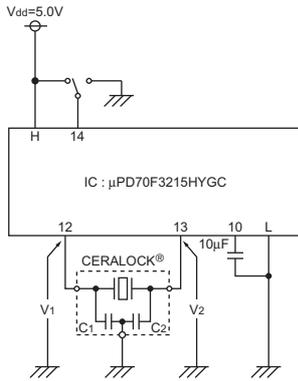
CERALOCK®

H: 1, 5, 9, 34, 70
L: 2, 8, 11, 33, 69

CERALOCK®: CSTCR5M00G55-R0
C_1=39pF (Typ.)
C_2=39pF (Typ.)

■ ATmega128 (Atmel)

8-bit Microcomputer
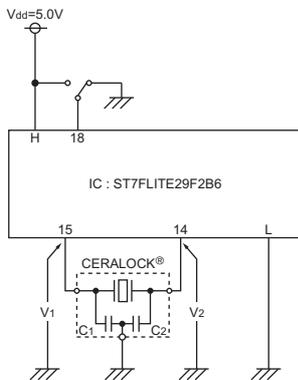

Vcc=5.0V

IC : ATmega128

CERALOCK®

H: 21, 52, 64
L: 22, 53, 63

CERALOCK®: CSTCE8M00G52-R0
C_1=10pF (Typ.)
C_2=10pF (Typ.)

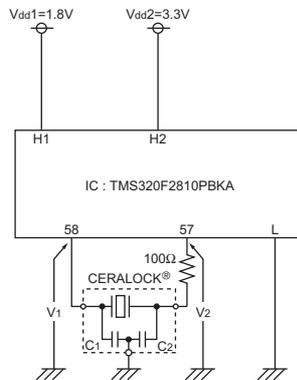## ■ ST7FLITE29F2B6 (ST Microelectronics)

8-bit Microcomputer

Vdd=5.0V

IC : ST7FLITE29F2B6

CERALOCK®

H: 17
L: 16

CERALOCK®: CSTCE16M0V53-R0
C_1=15pF (Typ.)
C_2=15pF (Typ.)

■ TMS320F2810PBKA (Texas Instruments)

32-bit Microcomputer

Vdd1=1.8V   Vdd2=3.3V

IC : TMS320F2810PBKA

100Ω
CERALOCK®

H1: 20, 29, 42, 56, 63, 74, 82, 94, 99,
100, 102, 110, 114
H2: 1, 13, 14, 25, 49, 52, 83, 104, 118
L: 12, 15, 17, 26, 30, 39, 53, 59, 62, 73,
88, 95, 103, 109, 115, 117, 128

CERALOCK®: CSTCE15M0V53-R0
C_1=15pF (Typ.)
C_2=15pF (Typ.)

4