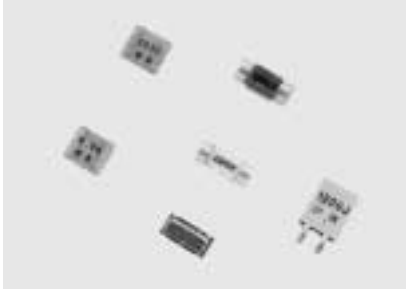


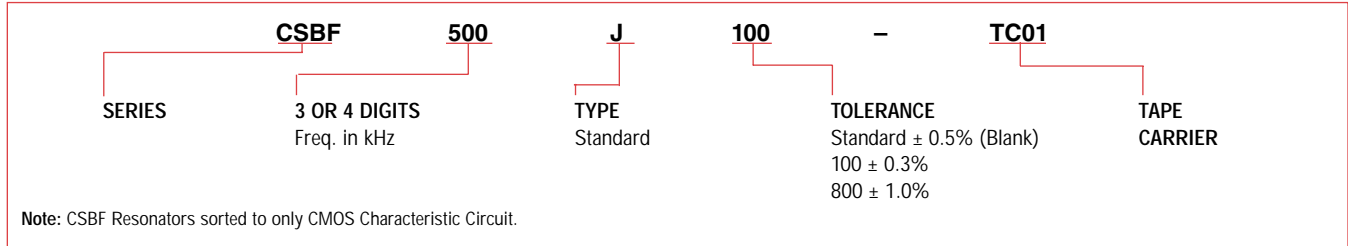
CSBF/CSAC, CSACV/CSACW Series



Increasing demand for size reduction and the economies realized through Surface Mount Technology, have led Murata Electronics to develop the CSBF and CSAC ceramic resonators. The CSBF is a miniaturized leaded unit offering size compatibility with most commonly available surface mount devices, while the CSKCC and the CSAC are true surface mountable component.

Both devices are available in tape and reel packaging compatible with most auto-placement equipment.

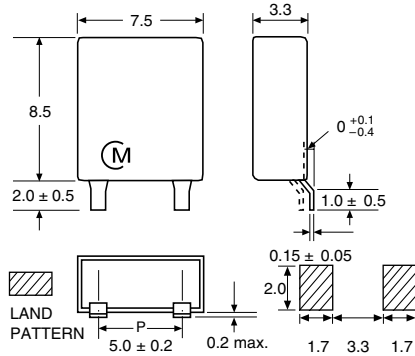
PART NUMBERING SYSTEM



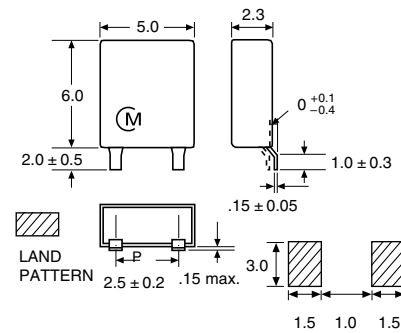
DIMENSIONS: mm

CSBF SERIES – 430 to 1250kHz

430 – 519kHz



700 – 1250kHz

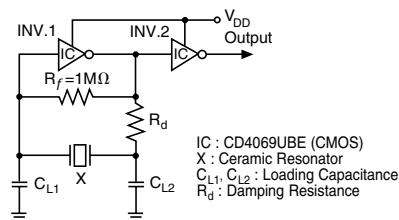


SPECIFICATIONS

Frequency Range	430 – 519kHz	700 – 1250kHz
Standard Initial Frequency Tolerance (25°C)	±0.5%	±0.5%
Temperature Stability (-20°C to +80°C)*	±0.3%	±0.3%

*Unavailable for certain frequency ranges.

STANDARD TEST CIRCUIT



Note: Also available in automotive temp. grade.

CERAMIC RESONATORS

CSAC, CSACV/CSACW Series

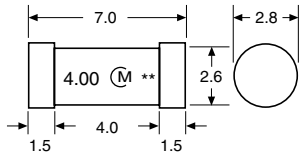
CSA series is being de-emphasized in favor of the GST series.

CSAC/CSACV/CSACW SERIES – 1.80 to 60.00MHz

SPECIFICATIONS	CSAC□MGC/MGCM-TC	CSACV□MTJ-TC20	CSACV□MXJ040-TC20	CSACW□MX-T
Frequency Range	1.80 to 6.00MHz	6.01 to 13.0MHz	13.50 to 20.00MHz	20.01 to 70.00
Standard Initial Frequency Tolerance	±0.5%	±0.5%	±0.5%	±0.5%
Storage Temperature Range	-40°C to +85°C			-55°C to +85°C
Temperature Tol. (-20°C to +80°C)	±0.3%	±0.5%	±0.3%	±0.2%
Withstand Voltage	50 VDC max.			100 VDC max.

DIMENSIONS: mm

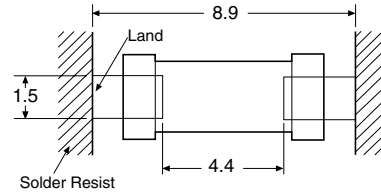
CSAC□MGC-TC



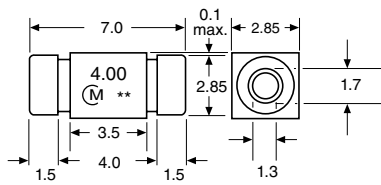
** : EIA-J Date Code

LAND PATTERN: mm

CSAC□MGC-TC

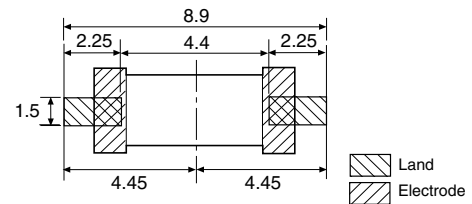


CSAC□MGCM-TC

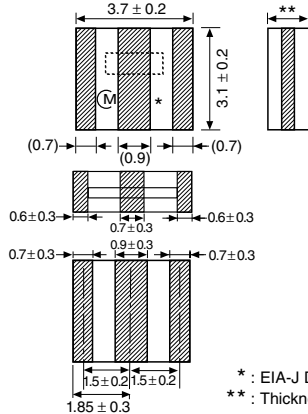


** : EIA-J Date Code

CSAC□MGCM-TC

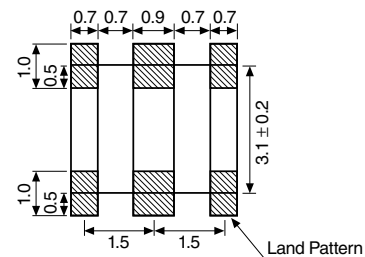


CSACV□MTJ/MXJ-TC20

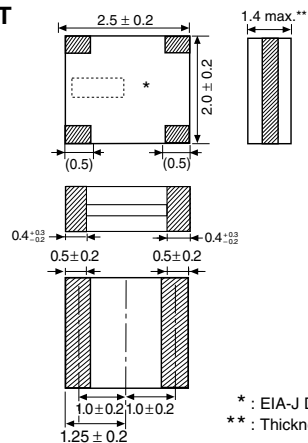


* : EIA-J Date Code
** : Thickness varies by frequency

CSACV□MTJ/MXJ-TC20

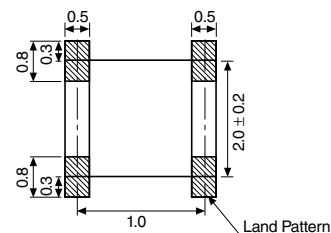


CSACW□MX-T



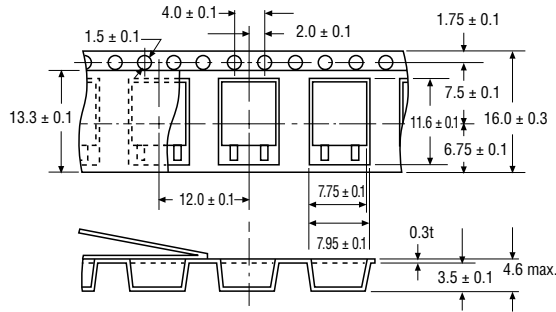
* : EIA-J Date Code
** : Thickness varies by frequency

CSACW□MX-T

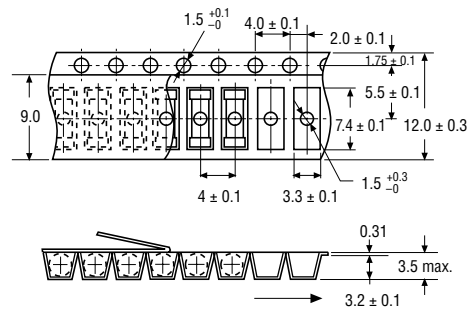


PLASTIC TAPE DIMENSIONS: mm

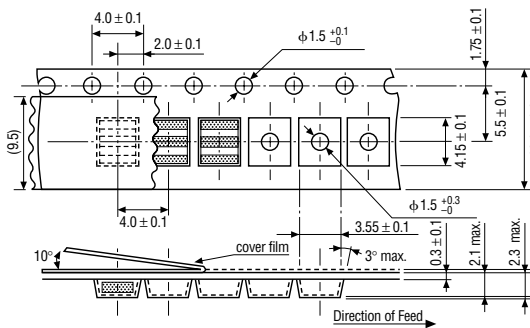
CSBF 430 – 519kHz



CSAC MGC/M



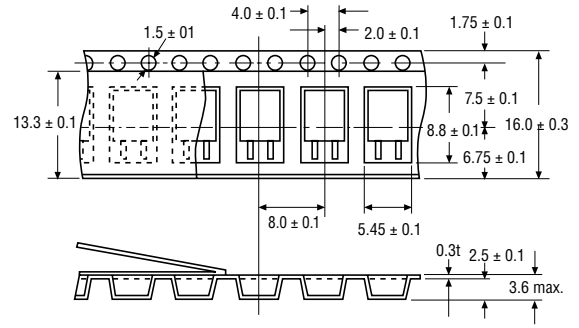
CSACV □ MTJ/MXJ



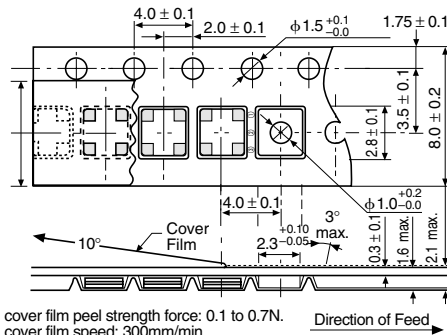
The cover film peel strength force: 20 ~ 70gr.

The cover film peel speed: 300mm/min.

CSBF 700 – 1250kHz



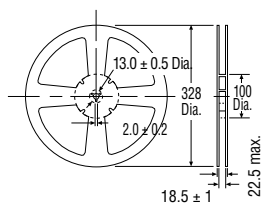
CSACW □ MX-T



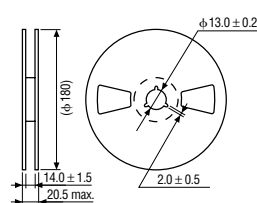
The cover film peel strength force: 0.1 to 0.7N.
The cover film speed: 300mm/min.

PLASTIC REEL DIMENSIONS: mm

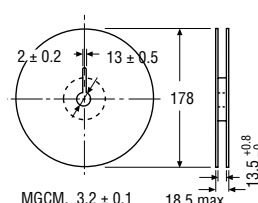
CSBF 328mm Dia.



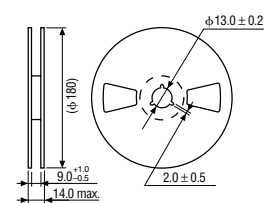
CSACV □ MTJ/MXJ-TC20



CSAC MGC/M



CSACW □ MX-T



CERAMIC RESONATORS

CERAMIC RESONATORS

SURFACE MOUNT WITH BUILT-IN LOAD CAPACITORS

MECHANICAL CONSIDERATIONS

CSTCC, CSTCV, CSTCW Series



PART NUMBERING SYSTEM

CSTCC 4.00 MG 1 00 - TC		CSTCW 2000 MX 0 3 001 - T										
SERIES	3 OR 4 DIGIT FREQUENCY	TYPE	INITIAL TOLERANCE	Denotes Sorting IC circuit and load cap value.	TAPE CARRIER	SERIES	4 DIGIT FREQUENCY	TYPE	TOLERANCE	LOAD CAP VALUE	CUSTOM MARK (Optional)	TAPE CARRIER
			Blank or 0 = ± 0.5% 1 = ± 0.3% 2 = ± 0.2% 8 = ± 1.0%	Blank or 00 = CMOS 40 = HCMOS					0 = ± 0.5% std. 1 = ± 0.3% 2 = ± 0.2% 4 = ± 0.1% 8 = ± 1.0%	1 = 6pF 3 = 15pF		

SURFACE MOUNT RESONATORS WITH BUILT-IN LOAD CAPACITORS



Part Number (note 1)	CSTCC□.□□MG-TC	CSTCR□M□□G-RO	CSTCC□.□□MG-TC	CSTCV□□.□□MTJ-TC20	CSTCV□□.□□MXJ-TC20	CSTCW□□□□MX-T
Available Frequencies (note 2)	2.00 to 3.99MHz	4.00 to 7.99MHz	8.00 to 10.00MHz	10.01 to 13.49MHz	13.50 to 19.99MHz	20.00 to 70.00MHz
Std. Initial Tolerance	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
Temperature Tol. -20°C TO +80°C	±0.3%	±0.2%	±0.3%	±0.4%	±0.3%	±0.3%
Aging Stability (for 10 yrs @ 25°C)	±0.3%	±0.1%	±0.3%	±0.3%	±0.3%	±0.3%
Standard Built-in Capacitance (note 3)	15pF ± 20% (blank)	15pF ± 20% (3)	15pF ± 20% (blank)	22pF ± 20% (C4)	22pF ± 20% 13.50 to 15.99MHz (H4) CSTCV□□.□□MXJ0H4-TC20 22pF ± 20% 16.00 to 17.99MHz (C4) CSTCV□□.□□MXJ0C4-TC20 22pF ± 20% 18.00 to 19.99MHz (H4) CSTCV□□.□□MXJ0H4-TC20	6pF ± 2pF (1) 25.00 to 70.00MHz CSTCW□□□□MX01-T 15pF ± 20% (3) 20.00 to 24.99MHz CSTCW□□□□MX03-T
Example Part No.	CSTCC□.□□MG-TC	CSTCR□M□□G03-RO	CSTCC□.□□MG-TC	CSTCV□□.□□MTJ0C4-TC20		

Note 1: For CSTCC□.□□MG, 2.00, 3.58, 3.68, 8.00, 8.19, 9.00, 10.00MHz are common values. For CSTCR□M□□G, 4.00, 4.19, 4.91, 5.00, 6.00MHz are common values. For CSTCV□□.□□MTJ, 11.00, 11.059, 12.00MHz are common values. For CSTCV□□.□□MXJ, 13.50, 14.72, 14.74, 16.00, 16.93, 20.00MHz are common values. For CSTCW□□□□MX, 24.00, 27.00, 32.00, 33.86, 40.00, 50.00MHz are common values. For other frequency values, please contact Murata Electronics.

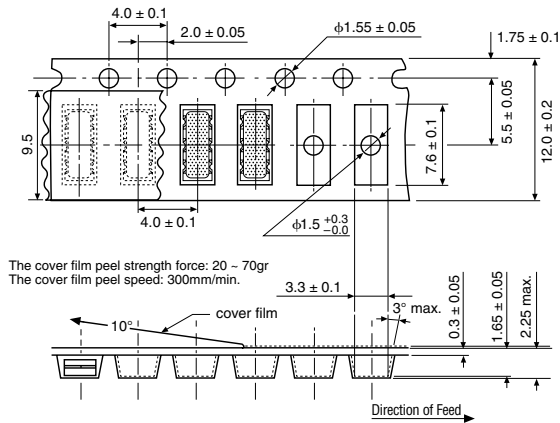
Note 2: Load capacitance value and tolerance are reference value.

Note 3: Please contact Murata Electronics for proper selection of circuit values.

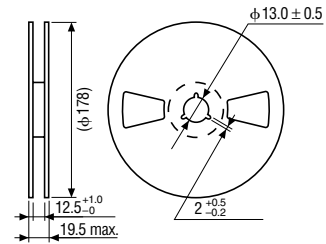
DIMENSIONS: mm	RECOMMENDABLE LAND PATTERN	TEST CIRCUIT
CSTCC□.□□MG-TC 	CSTCC□.□□MG-TC 	CSTCC□.□□MG-TC CSTCC (2-3.99) IC : 1/6TC4069UBPX2 X : Ceramic Resonator C ₁ , C ₂ : 15pF ±20% CSTCC (8.0-10.0) IC : 1/6TC74HCV04X2 X : Ceramic Resonator C ₁ , C ₂ : 15pF ±20%
CSTCR□M□□G-RO 	CSTCR□M□□G-RO 	CSTCR□M□□G-RO CSTCR IC : 1/6TC4069UBPX2 X : Ceramic Resonator C ₁ , C ₂ : 15pF ±20%
CSTCV□□.□□MTJ/MXJ-TC20 	CSTCV□□.□□MTJ/MXJ-TC20 	CSTCV□□.□□MTJ/MXJ-TC20 CSTCV□□.□□MTJ IC : 1/6TC40H004PX2 X : Ceramic Resonator C ₁ , C ₂ : 22pF ±20% CSTCV□□.□□MXJ IC : 1/6TC74HCV04X2 (13.50-15.99) 1/6TC40H004PX2 (16.00-17.99) 1/6TC74HCV04X2 (18.00-20.00) X : Ceramic Resonator C ₁ , C ₂ : 22pF ±20%
CSTCW□□□□MX-T 	CSTCW□□□□MX-T 	CSTCW□□□□MX-T CSTCW IC : 1/6TC74HC004X2 X : Ceramic Resonator C ₁ , C ₂ : 15pF ±20% (20.01-24.99MHz) 6pF ± 2pF (25.00-70.00MHz)

PLASTIC TAPE DIMENSIONS: mm

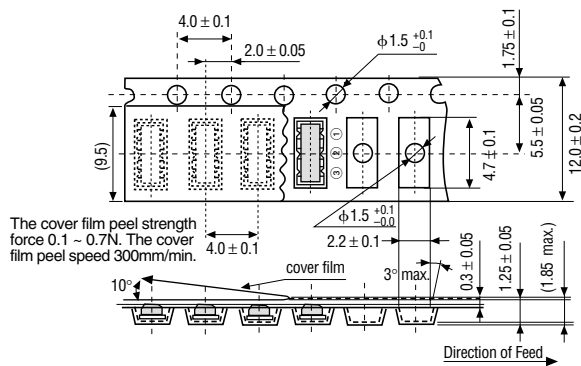
CSTCC□.□□MG-TC



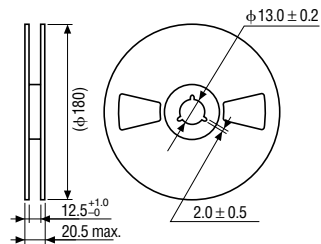
CSTCC□.□□MG-TC



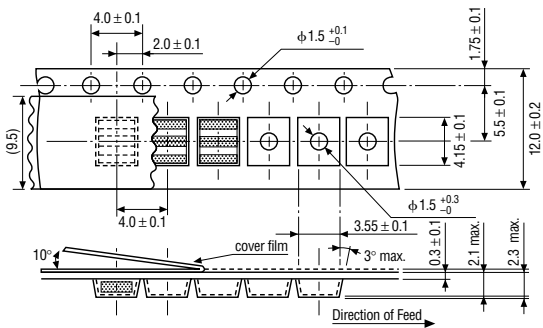
CSTCR□M□□G□□-RO



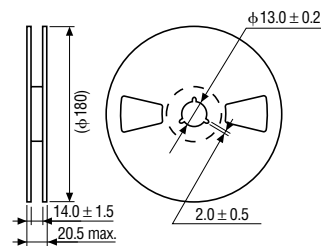
CSTCR□M□□G□□-RO



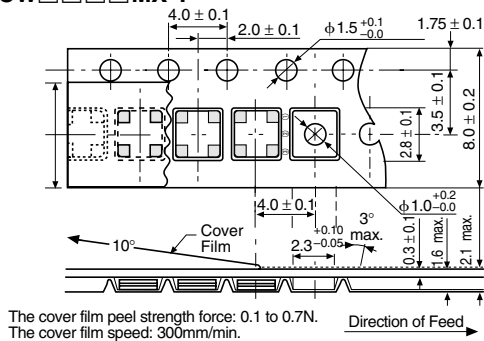
CSTCV□□.□□MTJ/MXJ-TC20



CSTCV□□.□□MTJ/MXJ-TC20



CSTCW□□□□MX-T



CSTCW□□□□MX-T

