

CERAMIC RESONATORS (CERALOCK®)

■ CERALOCK® Frequency Range

Type	Series	Built-in Capacitor	Frequency Range
Leaded 2 terminals	CSB□P/E/D/J	—	190kHz— 1250kHz
	CSA□MK/MG/MTZ/MXZ	—	1.26MHz— 50.00MHz
Leaded 3 terminals	CSU□P	○	450kHz— 500kHz
	CST□MG/MGW/MTW/MXW	○	1.80MHz— 50.00MHz*
SMD 2 terminals	CSBF□J	—	430kHz— 1250kHz*
	CSAC□MGC (M)	—	1.80MHz— 6.00MHz
	CSACS□MT/MX	—	6.01MHz— 50.00MHz*
SMD 3 terminals	CSTC□MG	○	2.00MHz— 6.00MHz
	CSTCS□MG/MT/MX	○	3.00MHz— 50.00MHz*

* Unavailable for certain frequency ranges. Please consult us for details.

■ Part Numbering

Ex.)

CSA	4.00	MG	100	-TF01
1	2	3	4	5

- ① Series
CSA (C/CS) : MHz band CERALOCK® (The added C/CS indicates chip type)
CST (C/CS) : MHz band CERALOCK® with built-in capacitors (C/CS indicates chip type)
CSB (F) : kHz band CERALOCK® (The added F indicates SMD type)
CSU : kHz band CERALOCK® with built-in capacitors
- ② Oscillation frequency
- ③ Type (Indicates vibration mode with different dimensions. Please see the pictures.)

④ Individual specifications (Frequency tolerance, applied IC, terminal shape, reliability, etc)

- ⑤ Taping or magazine
Standard suffixes are as follows:
CSA/CST Series : TF01 (Radial Taping)
(expect CSA-MK Series)
CSB/CSU Series : CA01 (Magazine)
CSBF Series : TC01 (Embossed Taping)
CSAC(S)/CSTC(S) Series : TC (Embossed Taping)

■ Minimum Quantity (order in sets only)

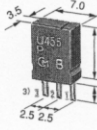
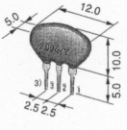
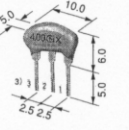
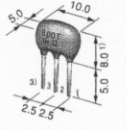
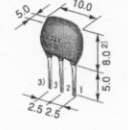
- Taping

Series	Frequency Range	Quantity	Suffix
CSBF□J	430— 500kHz	1500	-TC01
CSBF□J	700— 1250kHz	3000	-TC01
CSA□MG	1.80— 2.44MHz	1000	-TF01
CSA□MG	2.45— 6.30MHz	1500	-TF01
CSA□MTZ/MXZ	6.31— 50.00MHz	1500	-TF01
CST□MG	1.80— 2.44MHz	1000	-TF01
CST□MGW	2.45— 6.30MHz	1500	-TF01
CST□MTW/MXW	6.31— 50.00MHz	1000	-TF01
CSAC□MGC (M)	1.80— 6.00MHz	1500	-TC
CSACS□MT/MX	6.01— 50.00MHz	1000	-TC
CSTC□MG	2.00— 6.00MHz	1000	-TC
CSTCS□MG	3.00— 6.00MHz	2000	-TC
CSTCS□MT/MX	6.01— 50.00MHz	1000	-TC

- Bulk
500 pcs.
(100 pcs. for 190 to 374kHz frequency: CSB□D series)

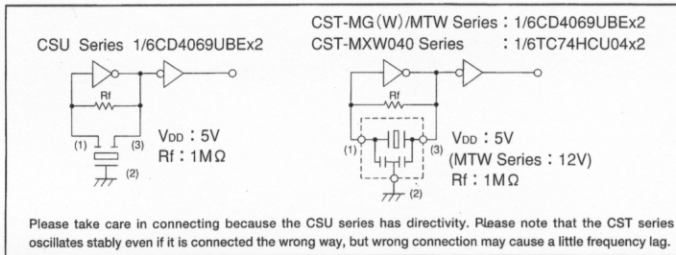
CERAMIC RESONATORS (CERALOCK®)

■ With Built-in Load Capacitance CSU/CST Series (450kHz—500kHz, 1.80MHz—50.00MHz)

Frequency	450—500kHz	1.80—2.44MHz	2.45—6.30MHz	6.31—13.00MHz	13.01—50.00MHz
Part Number	CSU□□□P	CST□□□MG	CST□□□MGW	CST□□□MTW	CST□□□MXW040
Washability	Non-washable	Washable ¹⁾	Washable ¹⁾	Washable ¹⁾	Washable ¹⁾
Dimensions (in mm)					

¹⁾ 6.31—7.99MHz: 9.0 max. ²⁾ 13.01—14.99MHz: 9.0 max. 33.00—50.00MHz: 7.0 max. ³⁾ Terminals have directivity ①Input ②Ground ③Output
⁴⁾ The resonators are washable. However, temperature, time and other processing conditions should be checked to ensure that suitable electrical characteristics are maintained.

■ Test Circuits

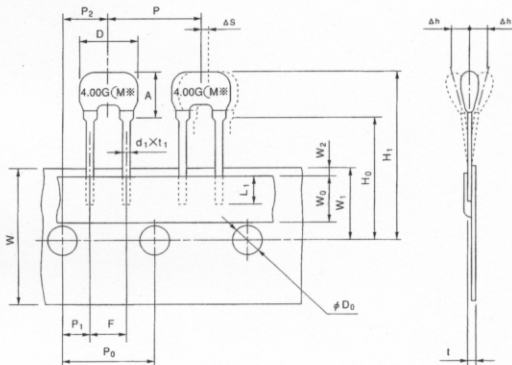


■ Characteristics

Series	Frequency Range	Frequency Accuracy(25°C)	Stability in Temperature (-20 to +80°C)	Aging (for 10 years)
CSU□P	450— 500kHz	±2kHz	±0.3%	±0.3%
CST□MG/MGW	1.80— 6.30MHz	±0.5%	±0.3%	±0.3%
CST□MTW	6.31—13.00MHz	±0.5%	±0.4%	±0.3%
CST□MXW040	13.01—50.00MHz	±0.5%	±0.3%	±0.3%

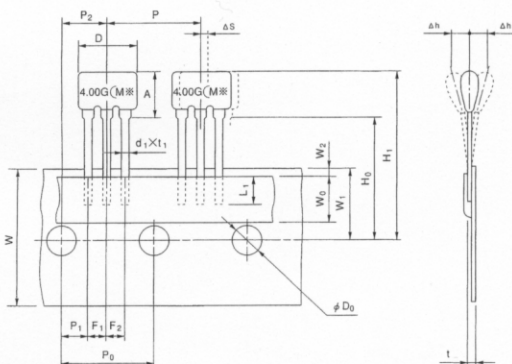
■ Radial Taping Dimensions

CSA4.00MG-TF01



Item	Code	Dimensions (mm)	Note
Body Diameter	D	10.0max.	
Body Height	A	7.5max.	
Lead Dimensions	d ₁ ×t ₁	0.5×0.3(±0.1)	
Portion To Cut in Case of Defect	L ₁	3.0 min.	
Pitch of Component	P	12.7±0.5	
Pitch of Sprocket Hole	P ₀	12.7±0.2	10×P ₀ =127±1
Length from Hole Center to Lead	P ₁	3.85±0.5	
Length from Hole Center to Component Center	P ₂	6.35±0.5	
Lead Spacing	F	5.0 ±0.2	
Deviation across Tape	△h	0±1.0	
Carrier Tape Width	W	18.0±0.5	
Hold-down Tape Width	W ₀	6.0 min.	
Position of Sprocket Hole	W ₁	9.0±0.5	
Hold-down Tape Width	W ₂	0 ±0.5 ⁵⁾	
Lead Distance between Reference and Bottom Planes	H ₀	18.0±0.5	
Distance between Reference and Top	H ₁	26.0 max.	
Diameter of Sprocket Hole	D ₀	φ 4.0±0.2	
Total Tape Thickness	t	0.6±0.2	
Deviation across Body Center	△s	0±0.1	

CST4.00MGW-TF01



Item	Code	Dimensions (mm)	Note
Body Diameter	D	10.0 max.	
Body Height	A	6.0 max.	
Lead Dimensions	d ₁ ×t ₁	0.5×0.3(±0.1)	
Portion To Cut in Case of Defect	L ₁	3.0 min.	
Pitch of Component	P	12.7±0.5	
Pitch of Sprocket Hole	P ₀	12.7±0.2	10×P ₀ =127±1
Length from Hole Center to Lead	P ₁	3.85±0.5	
Length from Hole Center to Component Center	P ₂	6.35±0.5	
Lead Spacing	F ₁	2.5±0.2	
	F ₂	2.5±0.2	
Deviation across Tape	△h	0±1.0	
Carrier Tape Width	W	18.0±0.5	
Hold-down Tape Width	W ₀	6.0 min.	
Position of Sprocket Hole	W ₁	9.0±0.5	
Hold-down Tape Width	W ₂	0 ±0.5 ⁵⁾	
Lead Distance between Reference and Bottom Planes	H ₀	18.0±0.5	
Distance between Reference and Top	H ₁	24.5 max.	
Diameter of Sprocket Hole	D ₀	φ 4.0±0.2	
Total Tape Thickness	t	0.6±0.2	
Deviation across Body Center	△s	0±0.1	

(in mm)