CERAMIC RESONATORS
1.26MHz to 60.00MHz

muRata
Innovator in Electronics

CSA Series

The CSA Series of ceramic resonators cover the frequency range of 1.25MHz to 60.00MHz with an initial frequency tolerance of ±0.5%. Since the CSA Series utilizes the thickness mode of vibration of the piezoelectric element, there is little dimensional change with frequency. All CSA resonators are epoxy coated and completely washable (except MK series). Tape and reel packaging is available.

The CSA series has been de-emphasized in favor of the CST series.

PART NUMBERING SYSTEM

CSA 3.58 MG 1 00

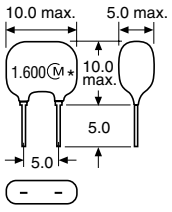
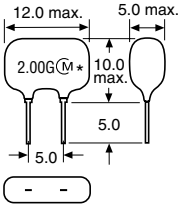
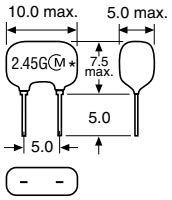
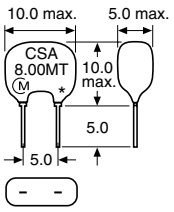
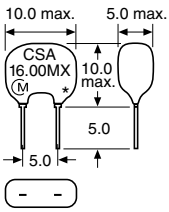
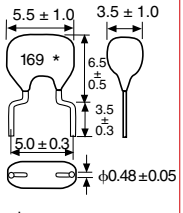
- **CSA** — **SERIES**
- **3.58** — **3 OR 4 DIGITS** Freq. in MHz
- **MG** — **TYPE**
- **1** — **TOLERANCE** Standard = ±0.5% (Blank), 1 = ±0.3%, 8 = ±1.0%
- **00** — **DENOTES ANY SPECIFIC CHARACTERISTICS** (Ex: 40 = HCMOS type, Blank = CMOS type)

RESONANT IMPEDANCE

Type	Frequency Range (MHz)	Impedance at Resonance (V max.)
MK	1.26 to 1.499	150
	1.500 to 1.799	100
MG	1.80 to 2.99	80
	3.00 to 3.49	50
	3.50 to 6.30	30
MTZ	6.31 to 6.99	30
	7.00 to 13.0	25
MXZ	12.00 to 60.00	40

DIMENSIONS: mm
CSA SERIES: 1.26MHz – 70.00MHz

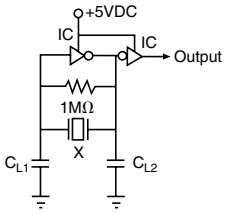
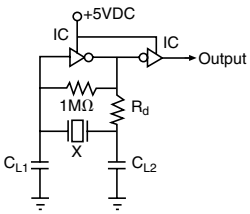
NEW

Frequency	1.26 – 1.79MHz	1.80 – 2.44MHz	2.45 – 6.30MHz	6.31 – 13.0MHz	12.00 – 15.99MHz	16.00 – 70.00MHz
Series	CSA□□□MK	CSA□□□MG	CSA□□□MG	CSA□□□MTZ	CSA□□□MXZ040	CSALS□M□□X
Washability	Non-Washable	Washable	Washable	Washable	Washable	Washable
Dimensions						
	* : EIA-J Date Code	* : EIA-J Date Code	* : EIA-J Date Code	* : EIA-J Date Code	* : EIA-J Date Code	* : EIA-J Date Code

The resonators are washable. However, temperature, time and other processing conditions should be checked to ensure that suitable electrical characteristics are maintained.

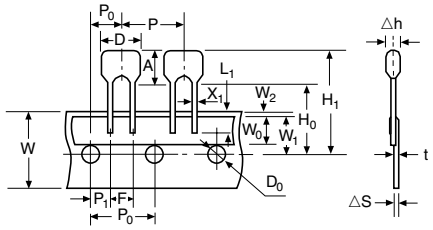
CERAMIC RESONATORS

SPECIFICATIONS

TYPE	With CMOS IC		With HCMOS IC				
	MK	MG	MTZ	MK040	MG040	MTZ040	MXZ040
Frequency Range (MHz)	1.26 to 1.799	1.80 to 6.30	6.31 to 13.0	1.26 to 1.799	1.80 to 6.30	6.31 to 13.0	13.01 to 60.00
Oscillation Frequency Tolerance	±0.5%			±0.5%			
Oscillation Frequency Temp. Stability (–20°C to +80°C)	±0.3%		±0.5%	±0.3%		±0.5%	±0.3%
Aging (Room Temp., 10 years)	±0.3%		±0.5%	±0.3%		±0.5%	±0.3%
Standard Measuring Circuit	 IC : CD4069UBE V_{DD}: +5V (MTZ Series: +12V) X: Ceramic Resonator C_{L1}, C_{L2}: 30pF			 IC: TC74HCU04 X: Ceramic Resonator C_{L1}, C_{L2}, R_d: Depends on frequency			

TAPE AND REEL

CSA



PACKAGING DIMENSIONS: mm

Type (Suffix)		TR/TF				TR01/TF01*			
Item		MG		MTZ/MXZ		MG		MTZ/MXZ	
Description	Symbol	Nominal Value	Tolerance	Nominal Value	Tolerance	Nominal Value	Tolerance	Nominal Value	Tolerance
Width of Resonator**	D	10.0 max.	—	10.0 max.	—	10.0 max.	—	10.0 max.	—
Height of Resonator	A	7.5 max.	—	10.0 max.	—	7.5 max.	—	10.0 max.	—
Terminal Dimensions	X_1	0.5 x 0.3	±0.1	0.5 x 0.4	±0.1	0.5 x 0.3	±0.1	0.5 x 0.3	±0.1
Adhered Terminal Length	L_1	3.0 min.	—	3.0 min.	—	3.0 min.	—	3.0 min.	—
Taping Pitch	P	12.7	±0.5	12.7	±0.5	12.7	±0.5	12.7	±0.5
Guide Pitch	P_0	12.7	±0.2	12.7	±0.2	12.7	±0.2	12.7	±0.2
Hole Position to Terminal	P_1	3.85	±0.5	3.85	±0.5	3.85	±0.5	3.85	±0.5
Hole Position to Body	P_2	6.35	±0.5	6.35	±0.5	6.35	±0.5	6.35	±0.5
Terminal Spacing	F	5.0	+0.5/–0.2	5.0	+0.5/–0.2	5.0	+0.5/–0.2	5.0	+0.5/–0.2
Deviation Across Tape	△h	0	±1.0	0	±1.0	0	±1.0	0	±1.0
Carrier Tape Width	W	18.0	±0.5	18.0	±0.5	18.0	±0.5	18.0	±0.5
Hold Down Tape Width	W_0	6.0 min.	—	6.0 min.	—	6.0 min.	—	6.0 min.	—
Position of Sprocket Hole	W_1	9.0	±0.5	9.0	±0.5	9.0	±0.5	9.0	±0.5
Margin Between Both Tapes	W_2	0	+0.5/–0	0	+0.5/–0	0	+0.5/–0	0	+0.5/–0
Lead Distance Between Reference and Bottom Plane	H_0	16.0	±0.5	16.0	±0.5	18.0	±0.5	18.0	±0.5
	H_1	24.0 max.	—	26.5 max.	—	26.0 max.	—	28.5 max.	—
Diameter of Sprocket Hole	D_0	4.0D.	±0.2	4.0D.	±0.2	4.0D.	±0.2	4.0D.	±0.2
Total Tape Thickness	t	0.6	±0.2	0.6	±0.2	0.6	±0.2	0.6	±0.2

* TF01 is the standard packaging.
** 1.80 - 2.44 MHz is 12.0 max.
Note: The only difference between TR and TR01 (TF and TF01) is the dimension of H_0.