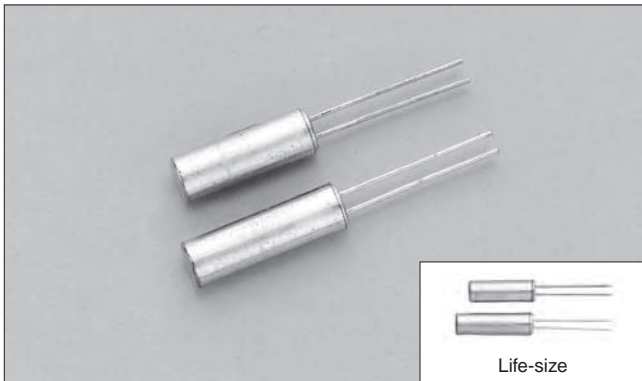


AT-CUT CRYSTAL UNITS (Cylinder Type)

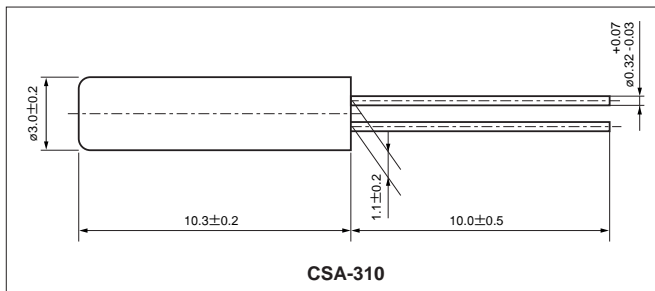
CSA-310 · CSA-309



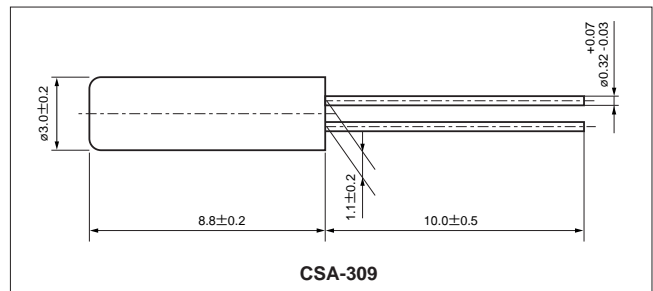
FEATURES

- High performance miniature crystal units with Citizen's ultra-precise processing technology.
- High-stability assured with tight vacuum sealing.
- Suitable for various applications.

DIMENSION [mm]



SOLDER PAD LAYOUT [mm]



STANDARD SPECIFICATIONS

Item	Model	CSA-310	CSA-309	Conditions
Nominal Frequency	f_0	3.5MHz~4.0MHz	4.001MHz~34.0MHz (Fundamental) 27.0MHz~70.0MHz (3rd Overtone)	Need to contact us for the available frequency
Frequency Tolerance	$\Delta f/f_0$	± 30 ppm		at 25°C
Frequency Tolerance over Operating Temperature Range	$\Delta f/f_0$	below 6.0MHz: ± 50 ppm above 6.0MHz: ± 30 ppm		-10°C ~ +60°C See figure 3 in P4
Operating Temperature Range	T _{OPR}	-20°C ~ +70°C		
Storage Temperature Range	T _{STR}	-40°C ~ +85°C		
Motional (series) resistance	R ₁	Refer to the following table		at 25°C
Load capacitance	C _L	16.0pF, 18.0pF		Need to specify your requirement
Shunt capacitance	C ₀	5.0pF Max.		
Level of drive	D _L	100 μW		
Insulation Resistance	I _R	500M Ω Min.		DC100V ± 15V
Aging (first year)	$\Delta f/f_0$	± 5 ppm Max.		25°C ± 3°C

MOTIONAL (SERIES) RESISTANCE (R₁)

Frequency Range	3.5MHz ≤ f ₀ < 4.0MHz	4.0MHz ≤ f ₀ < 6.0MHz	6.0MHz ≤ f ₀ < 10MHz	10MHz ≤ f ₀ < 27MHz	27MHz ≤ f ₀ < 36MHz	36MHz ≤ f ₀ ≤ 70MHz
Mode	Fundamental	Fundamental	Fundamental	Fundamental	Fundamental 3rd Overtone	3rd Overtone
R ₁	200 Ω Max.	150 Ω Max.	100 Ω Max.	50 Ω Max.	50 Ω Max. 100 Ω Max.	80 Ω Max.

