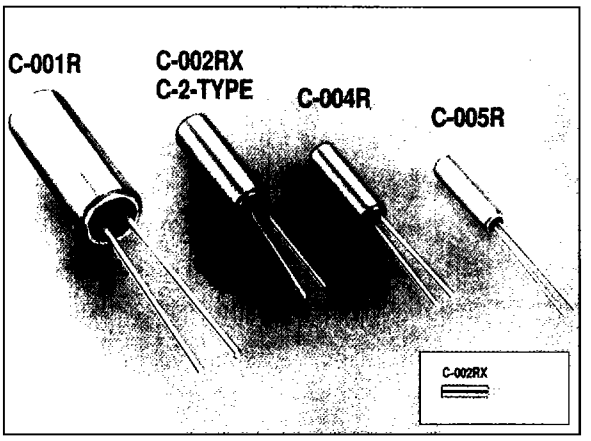
CYLINDER LOW/MEDIUM-FREQUENCY QUARTZ CRYSTAL

C-2-TYPE/C-TYPE

- Photolithography finish allows uniform and stable performance.
- Excellent shock resistance and environmental capability.
- Respond to an extensive range of frequency, from 20 kHz to 165 kHz, and 307.2 kHz.



Actual size

■ Specifications for C-2-TYPE (characteristics)

Item		Symbol	Specifications	Remarks
Nominal frequency range		f	20 kHz to 165 kHz, 307.2 kHz	Please refer to frequency example page 13
Temperature range	Storage temperature	T_{STG}	-20°C to +70°C	
	Operating temperature	T_{OPR}	-10°C to +60°C	
Maximum drive level		GL	1.0μW max.	
Soldering condition (lead part)		T_{SOL}	Under 280°C within 5 sec.	Do not heat the package to more than 150°C
Frequency tolerance (standard)		Δf/f	±20ppm,±50ppm,±100ppm (307.2 kHz: ±100ppm)	Ta=25°C, DL=0.1μW
Peak temperature (frequency)		θT	25°C ±5°C	
Temperature coefficient (frequency)		a	-0.04ppm/°C² max.	
Load capacitance		CL	6pF to ∞	Please specify
Series resistance		R_1	20 kHz ≤ f < 30 kHz: 55 kΩ max. 30 kHz ≤ f < 40 kHz: 45 kΩ max. 40 kHz ≤ f < 60 kHz: 20 kΩ max. 60 kHz ≤ f < 70 kHz: 15 kΩ max. 70 kHz ≤ f < 120 kHz: 12 kΩ max. 120 kHz ≤ f < 165 kHz: 10 kΩ max. 307.2 kHz: 6 kΩ max.	
Motional capacitance		C_1	4.0fF max.	
Shunt capacitance		C_0	2.0pF max.	
Insulation resistance		IR	500 MΩ min.	
Aging		fa	±5ppm/year max.	Ta=25°C±3°C, first year
Shock resistance		S.R.	±5ppm max.	Three drops on a hard board from 75 cm or excitation test with 3000G x 0.3ms x 1/2 sine wave x 3 directions

• Please refer to the external dimensions on page 13.

■ Specifications for C-TYPE (characteristics)

Item		Symbol	C-001R	C-002RX	C-004R	C-005R	Remarks
Nominal frequency range		f	32.768 kHz				
Temperature range	Storage temperature	T_{STG}	-20°C to +70°C				
	Operating temperature	T_{OPR}	-10°C to +60°C				
Maximum drive level		GL	1.0μW max.				
Soldering condition (lead part)		T_{SOL}	Under 280°C within 5 sec.				*1
Frequency tolerance (standard)		Δf/f	±20ppm				Ta=25°C, DL=0.1μW
Peak temperature (frequency)		θ T	25°C ±5°C				
Temperature coefficient (frequency)		a	-0.04ppm/°C² max.				
Load capacitance		CL	6pF to ∞				Please specify
Series resistance		R_1	35 kΩ max.(18 kΩ typ.)	50 kΩ max. (30 kΩ typ.)		50 kΩ max. (37 kΩ typ.)	
Motional capacitance		C_1	2.1fF typ.	2.0fF typ.		1.9fF typ.	
Shunt capacitance		C_0	0.9pF typ.	0.8pF typ.		0.7pF typ.	
Insulation resistance		IR	500 MΩ min.				
Aging		fa	±3.0ppm/year max.				Ta=25°C ± 3°C, first year
Shock resistance		S. R.	±5ppm max.				Three drops on a hard board from 75 cm or excitation test with 3000G x 0.3ms x 1/2 sine wave x 3 directions

• Please refer to the external dimensions on page 13.

*1 Do not heat the package to more than 150°C