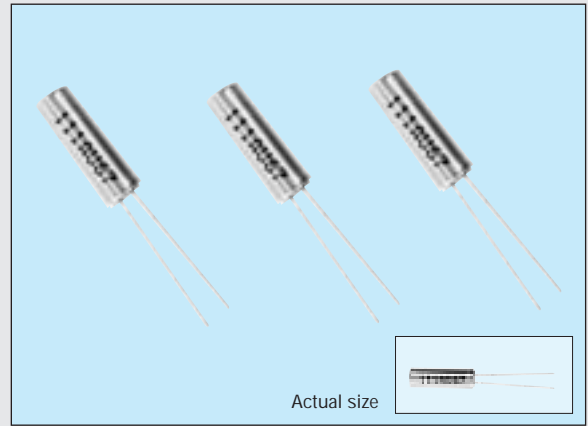


CYLINDER HIGH-STABILITY CRYSTAL UNIT

CA-303HS

- High-stability in a dia.3mm cylindrical package.
- Small package allows high-density mounting and less weight.
- Excellent shock resistance and environmental capability.
- High-stability with tight vacuum sealing and AT-cut single side mounting structure.
- Suitable for small telecommunication equipment.



Specifications (characteristics)

Item	Symbol	Specifications	Remarks
Nominal frequency range	f	9.600 MHz to 27.000 MHz	Fundamental mode
Temperature range	Storage temperature	T _{STG}	-55°C to +125°C
	Operating temperature	T _{OPR}	-40°C to +85°C
Drive level	Maximum drive level	GL	2mW max.
	Recommended drive level	DL	10μW to 100μW
Soldering condition	T _{SOI}	240°C max. within 10sec. and under 200°C within 40 sec.	
Frequency tolerance (standard)	Δf/f	±10ppm	T _a = 25°C ±3°C, DL=100μW
Frequency temperature characteristics		As per below table	
Load capacitance	C _L	10pF to ∞	Please specify
Series resistance	R ₁	As per below table	Operable temperature range, DL=100μW
Shunt capacitance	C ₀	3.0pF max.	
Insulation resistance	IR	500 MΩ min.	
Aging	f _a	±1ppm/year max.	T _a = 25°C ±1°C, 100μW
Shock resistance	S.R.	±1ppm max.	Three drops on a hard wooden board from 75 cm or excitation test with 3000G x 0.3ms x 1/2 sine wave x 3 directions

Measured values for frequency tolerance and temperature characteristics need to be brought into mutual correlation prior to the start of production.

Frequency temperature characteristics

Temperature range	Min. frequency specifications
0°C to +50°C	± 3ppm min.
-10°C to +60°C	± 5ppm min.
-20°C to +70°C	± 7ppm min.
-30°C to +80°C	±10ppm min.
-40°C to +85°C	±15ppm min.

Series resistance

Frequency (MHz)	Series resistance (Ω)
9.6 ≤ f < 10.0	50 Ω max.
10.0 ≤ f < 12.0	40 Ω max.
12.0 ≤ f < 16.0	30 Ω max.
16.0 ≤ f ≤ 27.0	25 Ω max.

External dimensions

(Unit: mm)

