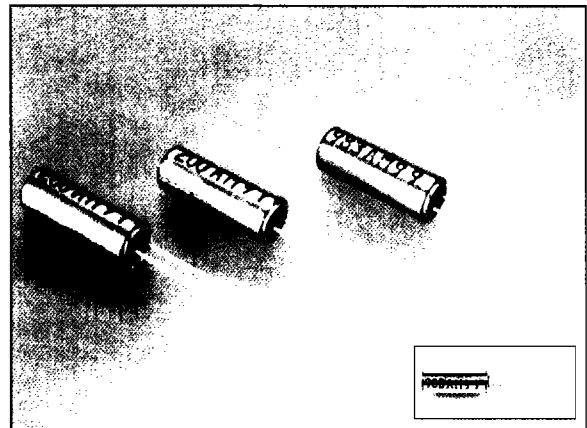


## CYLINDER HIGH-FREQUENCY QUARTZ CRYSTAL

# CA-301

- Compact design with case as small as 3mm in diameter while still maintaining excellent characteristics of AT-cut.
- Excellent shock resistance.
- High-stability assured with tight vacuum sealing.
- Capable of covering a frequency range from 4 MHz to 64 MHz.



Actual size

### Specifications (characteristics)

Item	Symbol	Specifications	Remarks
Nominal frequency range	f	4.000 MHz to 30.000 MHz *1	Fundamental mode
		26.000 MHz to 64.000 MHz	3rd overtone mode
Temperature range	Storage temperature	T <sub>STG</sub>	-40°C to +85°C
	Operating temperature	T <sub>OPR</sub>	-20°C to +70°C
Drive level	Maximum drive level	GL	2mW max.
	Recommended level	DL	10μW to 100μW
Soldering condition (only lead part)	T <sub>SOL</sub>	Under 260°C within 10 sec.	Do not heat the package to more than 150°C
Frequency tolerance (standard)	Δf/f	±30ppm	T <sub>a</sub> =25°C
Frequency temperature characteristics (standard)		Under 5.5MHz: ±50ppm	-10°C to +60°C
		Over 5.5MHz: ±30ppm	-20°C to 70°C
Load capacitance	CL	Fundamental: 10pF to ∞. Over tone: 5pF to ∞	Please specify
Series resistance	R <sub>s</sub>	As per below table	-20°C to +70°C, DL=100μW
Shunt capacitance	C <sub>0</sub>	5pF max.	
Insulation resistance	IR	500 MΩ min.	
Aging	f <sub>a</sub>	±5ppm/year max.	T <sub>a</sub> =25°C±3°C, first year
Shock resistance	S.R.	±10ppm max.	Three drops on a hard board from 75cm height or excitation test with 3000G x 0.3ms x 1/2 sine wave x 3 directions

\*1 8.0 MHz < f < 8.2 MHz: Unavailable.  
26.000 MHz to 30.000 MHz: standard (3rd overtone mode).

### Series resistance

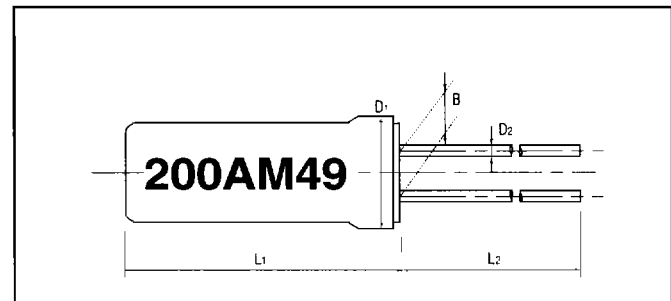
Frequency (MHz)	Series resistance (Ω)	mode
4.0 ≤ f < 5.5	150 Ω max.	Fundamental
5.5 ≤ f < 6.0	100 Ω max.	
6.0 ≤ f < 10.0	80 Ω max.	
10.0 ≤ f < 12.0	60 Ω max.	
12.0 ≤ f < 16.0	50 Ω max.	
16.0 ≤ f < 30.0	40 Ω max.	
26.0 ≤ f < 36.0	100 Ω max.	3rd overtone
36.0 ≤ f ≤ 64.0	80 Ω max.	

### Available frequencies from 4.0 MHz to less than 5.5 MHz

Frequency (MHz)	
4.000 MHz	4.433619 MHz
4.032 MHz	4.500 MHz
4.096 MHz	4.800 MHz
4.190 MHz	4.842673 MHz
4.194304 MHz	4.9152 MHz

### External dimensions

(Unit: mm)



Model	L <sub>1</sub>	L <sub>2</sub>	D <sub>1</sub>	D <sub>2</sub>	B
CA-301	Under 5.5 MHz	10.3 max.	9.5 min.	ø3.1 max.	ø0.3
	Over 5.5 MHz	8.9 max.	9.5 min.	ø3.1 max.	ø0.3

Sample products are without marking.