

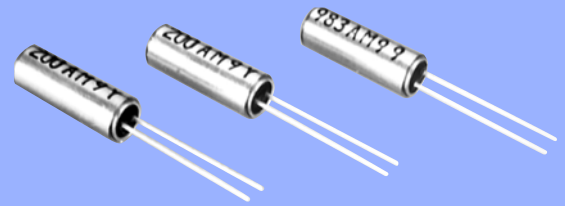
MHz RANGE CRYSTAL UNIT



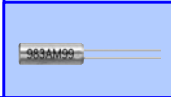
Product Number (please contact us)
Q21CA3011xxxx00

CA-301

- Frequency range : 4 MHz to 64 MHz
- Thickness : $\phi 3.1$ mm Max.
- Overtone order : Fundamental
3rd overtone (30 MHz to 64 MHz)
- Applications : For Clock of integrated circuit



Actual size



Specifications (characteristics)

Item	Symbol	Specifications	Conditions / Remarks
Nominal frequency range	f _{nom}	4.000 MHz to 29.999 MHz	Fundamental *1
		30.000 MHz to 64.000 MHz	3rd overtone *2
Storage temperature	T _{stg}	-40 °C to +85 °C	Storage as single product.
Operating temperature	T _{use}	-20 °C to +70 °C	The operating temperature range is -10 °C to +60 °C for 5.5 MHz and below
Level of drive	DL	10 μ W to 100 μ W	
Frequency tolerance (standard)	f _{tol}	$\pm 30 \times 10^{-6}$ (Under 5.5 MHz: $\pm 50 \times 10^{-6}$, $\pm 100 \times 10^{-6}$)	+25 °C
Frequency versus temperature characteristics (standard)	f _{tem}	Under 5.5 MHz: $\pm 50 \times 10^{-6}$	-10 °C to +60 °C
		Over 5.5 MHz: $\pm 30 \times 10^{-6}$	-20 °C to +70 °C
Load capacitance	CL	Fundamental: 10 pF to ∞ .	Please specify
		Overtone: 5 pF to ∞	
Motional resistance (ESR)	R ₁	As per table below	-20 °C to +70 °C, DL=100 μ W
Frequency aging	f _{age}	$\pm 5 \times 10^{-6}$ / year Max.	+25 °C, First year

*1 4.0 MHz \leq f_{nom} < 5.5 MHz : See "Available frequencies from 4.0 MHz to less than 5.5 MHz". 8.0 MHz < f_{nom} < 8.2 MHz: Unavailable.

*2 26.000 MHz \leq f_{nom} < 30.000 MHz : please contact us for inquiries for 3rd overtone mode.

Available frequencies from 4.0 MHz to less than 5.5 MHz (MHz)

4.000	4.032	4.096	4.190	4.194304	4.433619	4.500	4.800	4.9152
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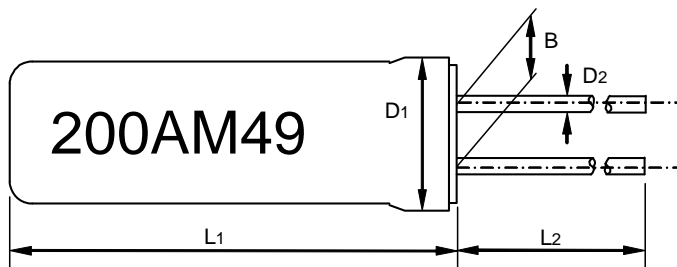
Motional resistance (ESR)

Frequency (MHz)	4 \leq f _{nom} < 5.5	5.5 \leq f _{nom} < 6	6 \leq f _{nom} < 10	10 \leq f _{nom} < 12	12 \leq f _{nom} < 16	16 \leq f _{nom} < 30	30 \leq f _{nom} \leq 36	36 < f _{nom} \leq 64
Motional resistance	150 Ω Max.	100 Ω Max.	80 Ω Max.	60 Ω Max.	50 Ω Max.	40 Ω Max.	100 Ω Max.	80 Ω Max.
Overtone order	Fundamental						3rd overtone	

Product name CA-301 24.000000MHz 12.0 +10.0-10.0
 (Standard form) ① ② ③ ④
 ①Model ②Frequency ③Load capacitance(pF) ④Frequency tolerance($\times 10^{-6}$, +25 °C)

External dimensions

(Unit:mm)



Frequency	L1	L2	D1	D2	B
Under 5.5 MHz	9.3 Max.	9.5 Min.	$\phi 3.1$ Max.	$\phi 0.3$	1.1
Over 5.5 MHz	8.9 Max.	9.5 Min.	$\phi 3.1$ Max.	$\phi 0.3$	1.1

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At Seiko Epson, all environmental initiatives operate under the Plan-Do-Check-Action (PDCA) cycle designed to achieve continuous improvements. The environmental management system (EMS) operates under the ISO 14001 environmental management standard.

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	► Complies with EU RoHS directive. *About the products without the Pb-free mark. Contains Pb in products exempted by EU RoHS directive. (Contains Pb in sealing glass, high melting temperature type solder or other.)
	► Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
	► Designed for automotive applications related to driving safety (Engine Control Unit, Air Bag, ESC etc.)

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