

MHz RANGE CRYSTAL UNIT



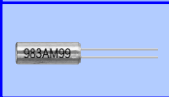
Product Number (please contact us)  
Q21CA3011xxxx00

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

\*1 4.0 MHz  $\leq$  f<sub>nom</sub> < 5.5 MHz : See "Available frequencies from 4.0 MHz to less than 5.5 MHz". 8.0 MHz < f<sub>nom</sub> < 8.2 MHz: Unavailable.  
\*2 26.000 MHz  $\leq$  f<sub>nom</sub> < 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 |
|-------|-------|-------|-------|----------|----------|-------|-------|--------|

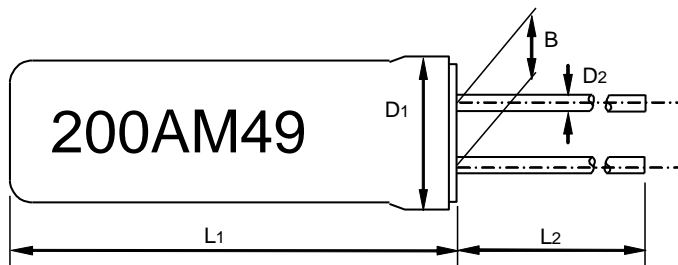
Motional resistance (ESR)

| Frequency (MHz)     | 4 $\leq$ f <sub>nom</sub> < 5.5 | 5.5 $\leq$ f <sub>nom</sub> < 6 | 6 $\leq$ f <sub>nom</sub> < 10 | 10 $\leq$ f <sub>nom</sub> < 12 | 12 $\leq$ f <sub>nom</sub> < 16 | 16 $\leq$ f <sub>nom</sub> < 30 | 30 $\leq$ f <sub>nom</sub> $\leq$ 36 | 36 < f <sub>nom</sub> $\leq$ 64 |
|---------------------|---------------------------------|---------------------------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|--------------------------------------|---------------------------------|
| Motional resistance | 150 $\Omega$ Max.               | 100 $\Omega$ Max.               | 80 $\Omega$ Max.               | 60 $\Omega$ Max.                | 50 $\Omega$ Max.                | 40 $\Omega$ Max.                | 100 $\Omega$ Max.                    | 80 $\Omega$ 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 |