



kHz RANGE CRYSTAL UNIT



Product Number
MC-146 : Q1xMC1462xxxx0X

MC-146 / MC-146 TYPE

- Frequency range : MC-146---32.768 kHz
 : MC-146 TYPE---32 kHz to 100 kHz
- External dimension : 7.0 × 1.5 × 1.4 mm
- Overtone order : Fundamental
- Applications : Small communications devices



Specifications (characteristics)

| Item | Symbol | Specifications | | Conditions / Remarks |
|--------------------------------|------------------|---|--|--|
| | | MC-146 | MC-146 TYPE | |
| Nominal frequency range | f _{nom} | 32.768 kHz | 32 kHz to 100 kHz | Please contact us about available frequencies. |
| Storage temperature | T _{stg} | -55 C to +125 C | | Storage as single product. |
| Operating temperature | T _{use} | -40 C to +85 C | | |
| Level of drive | DL | 1.0 μW Max. | | Operating Drive level 0.5 μW Max. |
| Frequency tolerance (standard) | f _{tol} | ± 20 × 10 ⁻⁶ , ± 50 × 10 ⁻⁶ | ± 50 × 10 ⁻⁶ , ± 100 × 10 ⁻⁶ | +25 C, DL=0.1 μW |
| Turnover temperature | T _i | +25 C ± 5 C | | |
| Parabolic coefficient | B | -0.04 × 10 ⁻⁶ / C ² Max. | | |
| Load capacitance | CL | 7 pF, 9 pF, 12.5 pF | | Please specify |
| Motional resistance (ESR) | R ₁ | 65 kΩ Max. | 65 kΩ to 25 kΩ | |
| Motional capacitance | C ₁ | 1.9 fF Typ. | 2.5 fF to 0.6 fF | |
| Shunt capacitance | C ₀ | 0.8 pF Typ. | 1.2 pF to 0.5 pF | |
| Frequency aging | f _{age} | ± 3 × 10 ⁻⁶ / year Max. | ± 5 × 10 ⁻⁶ / year Max. | +25 C, First year |

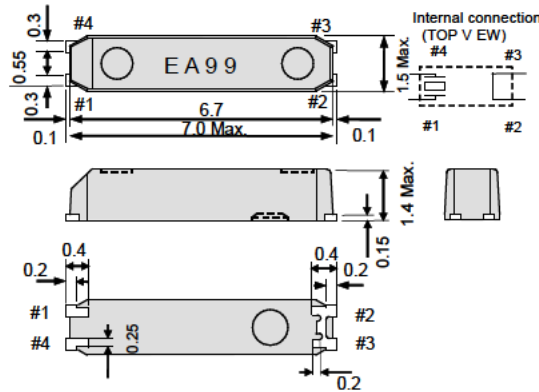
Product name MC-146 32.768000kHz 12.5 +20.0-20.0

(Standard form)

- ① Model
- ② Frequency
- ③ Load capacitance(pF)
- ④ Frequency tolerance(× 10⁻⁶, +25 C)

External dimensions

(Unit:mm)



Footprint (Recommended)

(Unit:mm)

