



KHz RANGE CRYSTAL UNIT SMD

MC-306 MC-405 / MC-406

- Frequency range : 32.768 kHz (20 kHz to 165 kHz)
- Thickness : 2.54 mm Max.(MC-306)
3.60 mm Max.(MC-405 / 406)
- Overtone order : Fundamental /Overtone (307.2 kHz)
- Applications : Clock and Microcomputer



Actual size

MC-306

MC-405 / 406



Specifications (characteristics)

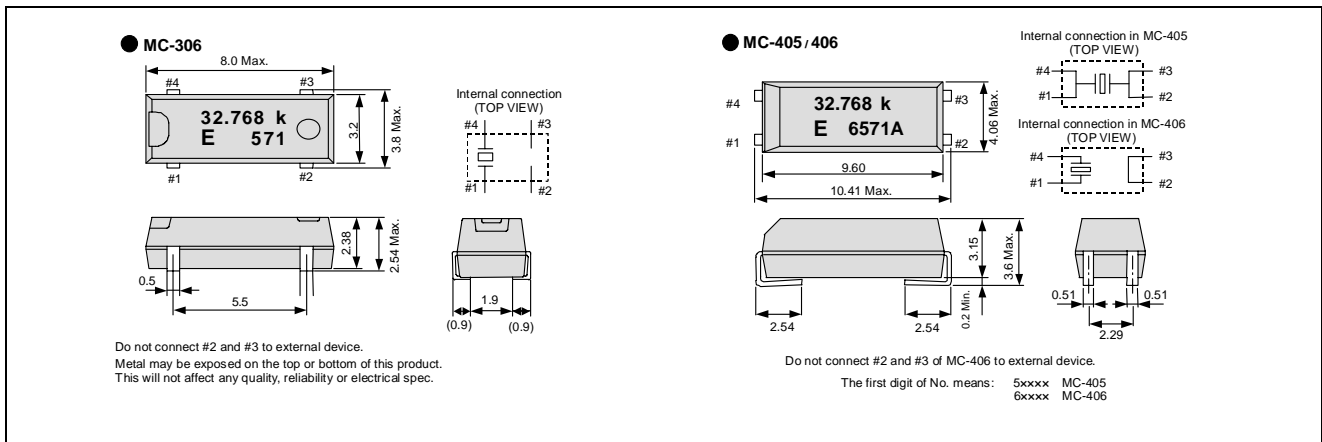
| Item | Symbol | Specifications | | Remarks |
|--------------------------------|-----------------------|---|--|---|
| Nominal frequency range | f | 32.768 kHz | 20 kHz to 165 kHz 307.2 kHz(MC-405 / 406) | Please contact us regarding available frequencies |
| Temperature range | Storage temperature | -55 °C to +125 °C | | Store as bare product after unpacking |
| | Operating temperature | -40 °C to +85 °C | | |
| Level of drive | DL | 1.0 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 | 6 pF to ∞ (standard :12.5 pF) | | Please specify |
| Motional resistance (ESR) | R ₁ | 50 kΩ Max. | 55 kΩ to 6 kΩ | As per below table |
| Motional capacitance | C ₁ | 1.8 fF Typ. | 4.0 fF to 0.6 fF | MC-306 |
| | | 2.0 fF Typ. | | MC-405 / 406 |
| Shunt capacitance | C ₀ | 0.9 pF Typ. | 2.0 pF to 0.6 pF | MC-306 |
| | | 0.85 pF Typ. | | MC-405 / 406 |
| Frequency aging | f _{age} | ±3 × 10 ⁻⁶ / year Max. | ±5 × 10 ⁻⁶ / year Max. | +25 °C, First year |

Motional resistance (ESR)

| Frequency | 20 kHz≤f< 31.2 kHz | 31.2 kHz≤f< 40 kHz | 40 kHz≤f< 90 kHz | 90 kHz≤f< 130 kHz | 130 kHz≤f<165 kHz | 307.2 kHz |
|---------------------|--------------------|--------------------|------------------|-------------------|-------------------|-----------|
| Motional resistance | 55 kΩ Max. | 35 kΩ Max. | 20 kΩ Max. | 12 kΩ Max. | 10 kΩ Max. | 6 kΩ Max. |

External dimensions

(Unit:mm)



Footprint (Recommended)

(Unit:mm)

