

kHz Range Crystal unit

MC-306

SEIKO EPSON CORPORATION

Product name

MC-306 32.768000 kHz 18.0 +50.0-50.0

Product Number / Ordering code

Q13MC30620040xx

Please refer to the 5.Packing information about xx (last 2 digits)

Complies with EU RoHS directive

Reference weight Typ. 126 mg

1.Absolute maximum ratings

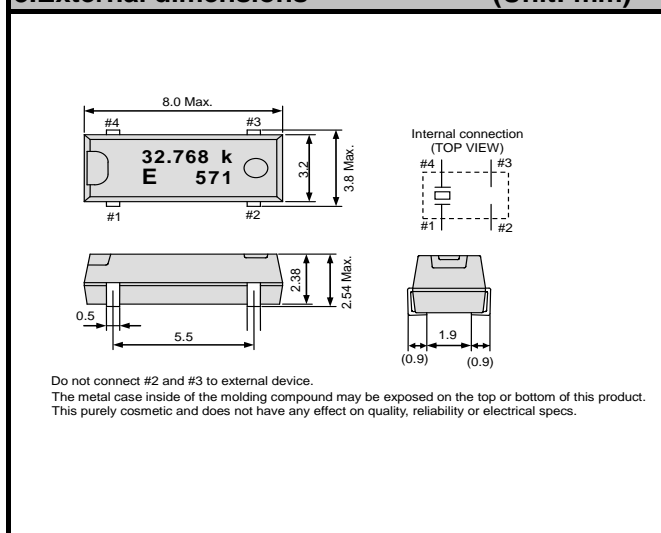
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions / Remarks |
|---------------------|--------|------|------|------|------|---------------------------|
| Storage temperature | T_stg | -55 | - | +125 | °C | Storage as single product |
| Maximum drive level | GL | - | - | 1.0 | μW | |

2.Specifications(characteristics)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions / Remarks |
|---------------------------|--------|-------|--------|-------|-------------------------------------|----------------------|
| Nominal frequency | f_nom | - | 32.768 | - | kHz | |
| Operating temperature | T_use | -40 | - | +85 | °C | |
| Level of drive | DL | - | - | 1.0 | μW | |
| Frequency tolerance | f_tol | -50.0 | - | +50.0 | $\times 10^{-6}$ | +25°C DL=0.1μW |
| Turnover temperature | Ti | +20 | +25 | +30 | °C | |
| Parabolic coefficient | B | - | - | -0.04 | $\times 10^{-6}/^{\circ}\text{C}^2$ | |
| Load capacitance | CL | - | 18.0 | - | pF | |
| Motional resistance (ESR) | R1 | - | 35 | 50 | k Ω | |
| Motional capacitance | C1 | - | 1.8 | - | fF | |
| Shunt capacitance | C0 | - | 0.9 | - | pF | |
| Motional inductance | L1 | - | 11.7 | - | kH | |
| Frequency aging | f_age | -3 | - | +3.0 | $\times 10^{-6} / \text{yea}$ | @+25°C, First year |

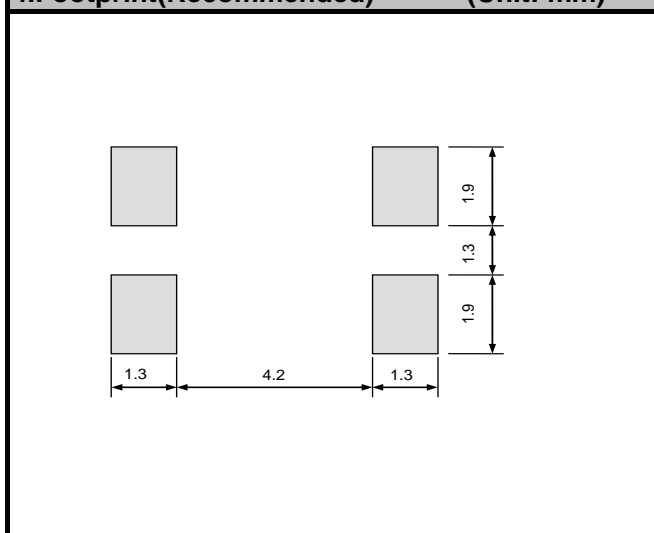
3.External dimensions

(Unit: mm)



4.Footprint(Recommended)

(Unit: mm)



5.Packing information

[1]Product number last 2 digits code (xx) description

The recommended code is "00"

Q13MC30620040xx

| Code | Condition | Code | Condition |
|------|------------------------------|------|----------------|
| 01 | Any Q'ty vinyl bag(Tape cut) | 14 | 1000pcs / Reel |
| 11 | Any Q'ty / Reel | 15 | 2000pcs / Reel |
| 12 | 250pcs / Reel | 00 | 3000pcs / Reel |
| 13 | 500pcs / Reel | | |

Reflow profile

Pre Heating Temperature

Tp1 ~ Tp2 = + 170 °C

Heating Temperature

TMI = + 220 °C

Peak Temperature

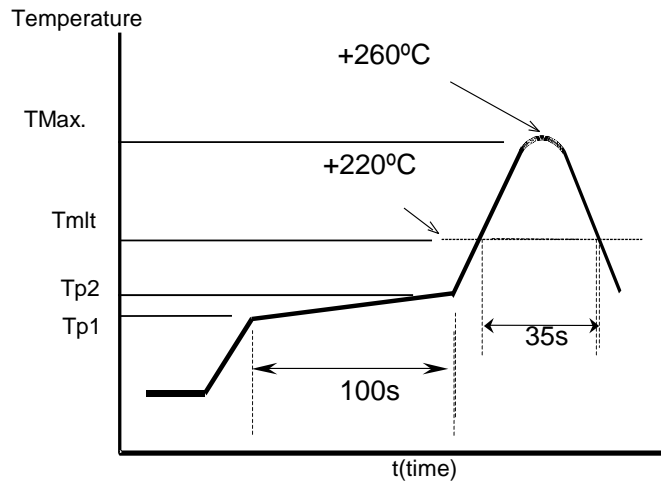
TMax. = + 260 °C

Point of measuring

In case of Solder ability

Terminal.

In case of Resistance to soldering heat
Surface.

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