



actual size

# Quartz Crystal · JTX520

SMD Tuning Fork Crystal · 4.8 x 1.9 mm

- 32.768 kHz standard
- reflow soldering temperature: 260 °C max.
- package height 0.9 mm max.



## General Data

| type                                 | JTX 520  |
|--------------------------------------|--|
| frequency                            | 32.768 kHz (30.0 ~ 153.6 kHz on request)   |
| frequency tolerance at 25 °C ± 5 °C  | 20 ppm / ± 30 ppm  |
| load capacitance $C_L$               | 12.5 pF (7 pF ~ 12.5 pF)   |
| temperature constant                 | -0.04 · 10 <sup>-6</sup> / °C <sup>2</sup> max.<br>-0.034 · 10 <sup>-6</sup> / °C <sup>2</sup> typical |
| frequency temperature characteristic | $f \text{ (ppm)} = -0.04 (25 \text{ °C} - T)^2$<br>T = requested temperature                           |
| operating temperature range          | -20 °C ~ +70 °C / -40 °C ~ +85 °C  |
| shunt capacitance $C_0$              | 1.3 pF typical   |
| series resistance max. ( ESR )       | 50 kΩ typ. ( 80 kΩ max.)   |
| storage temperature                  | -40 °C ~ +90 °C  |
| drive level max.                     | 1 μW   |
| aging first year                     | < ± 3 ppm  |

## Frequency Stability vs. Temperature

|                 |      | - 80 ppm | - 160 ppm |  |
|-----------------|------|----------|-----------|--|
| -20 °C ~ +70 °C | STD. | ●        |           |  |
| -40 °C ~ +85 °C | T1   |          | ●         |  |
| ● standard      |      |          |           |  |

## Marking

32.768 date code

date code:

A ~ M: Jan.- Dec.

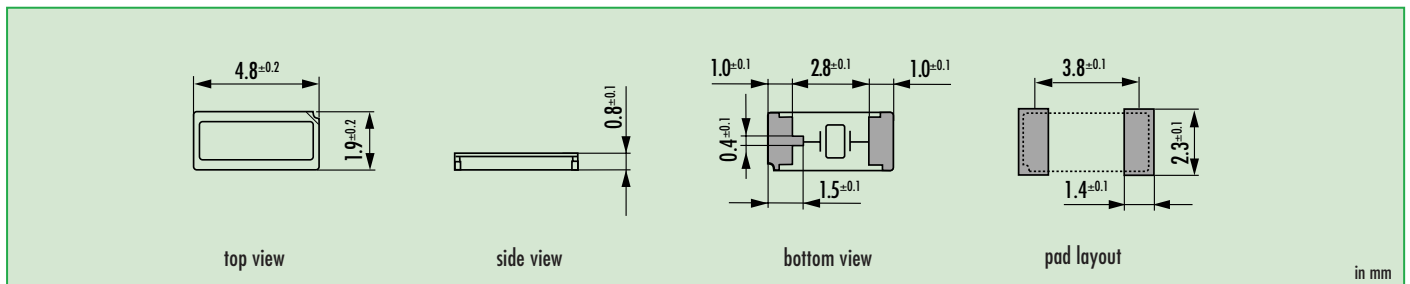
5: 2005

6: 2006

7: 2007

| Jan. | Febr. | Mar.  | Apr. | May  | June |
|------|-------|-------|------|------|------|
| A    | B     | C     | D    | E    | F    |
| July | Aug.  | Sept. | Oct. | Nov. | Dec. |
| G    | H     | J     | K    | L    | M    |

## Dimensions



## Order Information

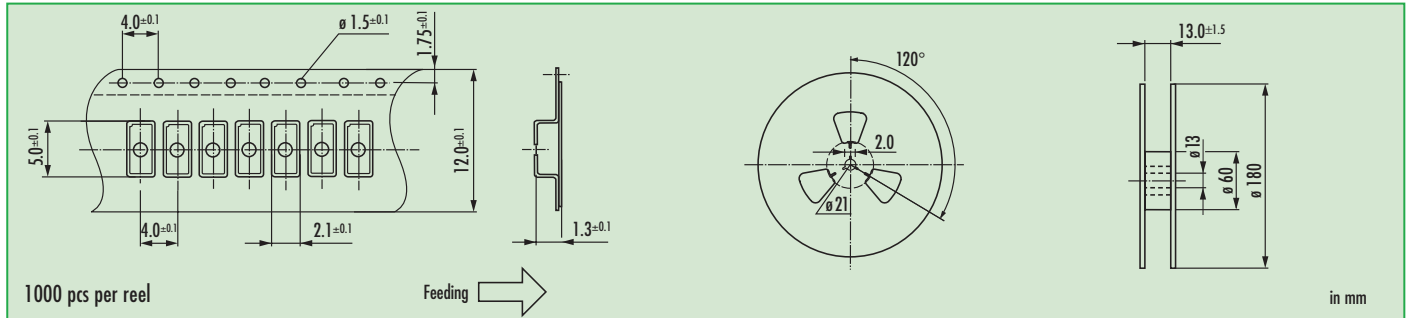
| Q      | frequency    | type   | load capacitance            | stability at 25 °C             | option  |
|--------|--------------|--------|-----------------------------|--------------------------------|---|
| Quartz | 0.032768 MHz | JTX520 | 7 ~ 12.5 pF<br>12.5 pF std. | 20 = ± 20 ppm<br>30 = ± 30 ppm | blank = -20 °C ~ +70 °C<br>T1 = -40 °C ~ +85 °C |

Example: Q 0.032768-JTX520-12.5-30 (Suffix LF = RoHS compliant / Pb free pads)



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## Taping Specification



## Reflow Soldering Profile

