



actual size

# Quartz Crystal · JTX310

## SMD Tuning Fork Crystal · 3.2 x 1.5 mm

- 32.768 kHz
- optional extra shock proof versions available
- reflow soldering temperature: 260 °C max.
- package height 0.9 mm max.



### General Data

type	JTX310
frequency	32.768 kHz
frequency tolerance at 25 °C ± 5 °C	± 10 ppm / ± 20 ppm / ± 30 ppm
load capacitance $C_L$	12.5 pF std. (6 pF ~ 9 pF on request)
temperature constant ( $T_C$ )	$T_C = -0.04 \text{ ppm} / ^\circ\text{C}^2 \text{ max.}$ $T_C = -0.034 \text{ ppm} / ^\circ\text{C}^2 \text{ typical}$
frequency temperature characteristic	$\Delta f = T_C \cdot (T_A - T_{TP})^2$ in [ppm] $T_A = \text{actual ambient temperature}$ $T_{TP} = 25 \text{ }^\circ\text{C} \pm 5 \text{ }^\circ\text{C}$ $T_{TP} = \text{turning point temperature}$
operating temperature range	refer to frequency stability table
shunt capacitance $C_0$	1.15 pF typical
series resistance max. (ESR)	70 k $\Omega$ (60 k $\Omega$ ask if available) 80 k $\Omega$ for temperature range T2 and T3
storage temperature	-55 °C ~ +125 °C
drive level max.	0.5 $\mu\text{W}$
aging first year	< ± 3 ppm

### Frequency Stability vs. Temperature

		-80 ppm	-160 ppm	-250 ppm	-400 ppm
-20 °C ~ +70 °C	STD.	●			
-40 °C ~ +85 °C	T1		●		
-40 °C ~ +105 °C	T2			○	
-40 °C ~ +125 °C	T3				○

● standard ○ available

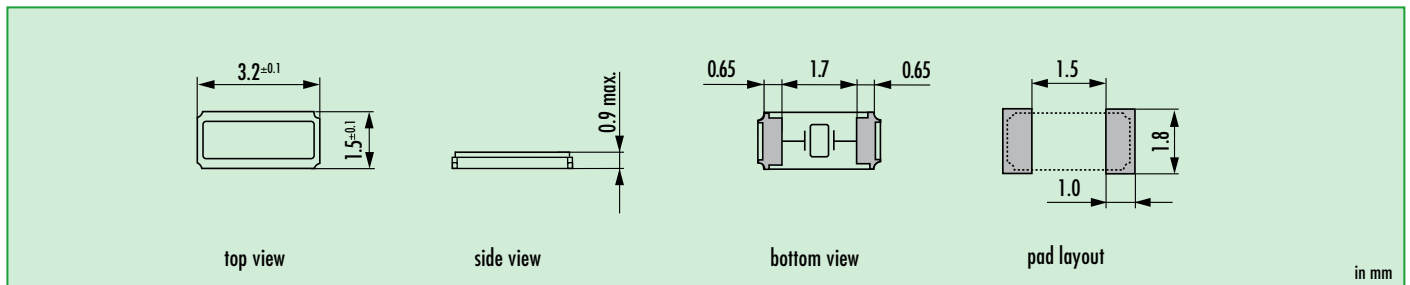
### Marking

company code  
date code / production code

### Mechanical Endurance Options

HMR (high mechanical reliability): 3000 g, half sine pulse, 0.3 ms

### Dimensions



### Order Information

Q	frequency	type	load capacitance	stability at 25 °C	option 1	option 2
Quartz	0.032768 MHz	JTX310	12.5 pF 6 pF ~ 9 pF (on request)	10 = ± 10 ppm 20 = ± 20 ppm 30 = ± 30 ppm	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C T3 = -40 °C ~ +125 °C	HMR = high mechanical reliability

Example: Q 0.032768-JTX310-12.5-20-T1-HMR-LF (Suffix LF = RoHS compliant / Pb free)

