



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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actual size

# Automotive SMD Crystal · JTX310

## SMD Tuning Fork Crystal · 3.2 x 1.5 mm

- all versions are AEC-Q200 qualified
- 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	± 20 ppm / ± 30 ppm
load capacitance $C_L$	12.5 pF std. (7 pF, 9 pF ask)
temperature constant ( $T_C$ )	$T_C = -0.04 \cdot 10^{-6} / ^\circ\text{C}^2$ max. $T_C = -0.034 \cdot 10^{-6} / ^\circ\text{C}^2$ typical
frequency temperature characteristic	$f$ (ppm) = $T_C \cdot (25^\circ\text{C} - T)^2$ $T$ = requested temperature
operating temperature range	refer to frequency stability table
shunt capacitance $C_0$	1.15 pF typical
series resistance max. (ESR)	70 k $\Omega$ (80 k $\Omega$ for temperature range T2 and T3)
storage temperature	-55 °C ~ +125 °C
drive level max.	0.5 $\mu$ 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

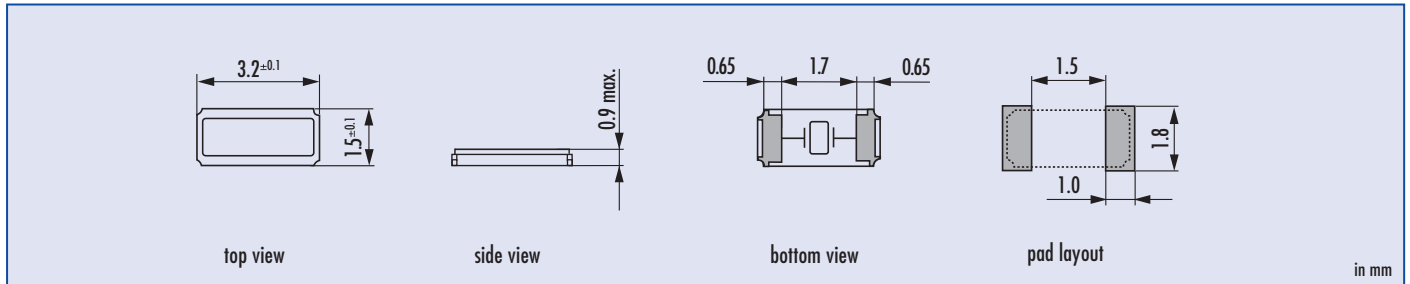
company code  
date code / production code

### Mechanical Endurance Options

AEC (according AEC-Q200): 100 g, half sine pulse, 6.0 ms  
HMR (high mechanical reliability): 3000 g, half sine pulse, 0.3 ms

note: all versions are AEC-Q200 qualified

### Dimensions



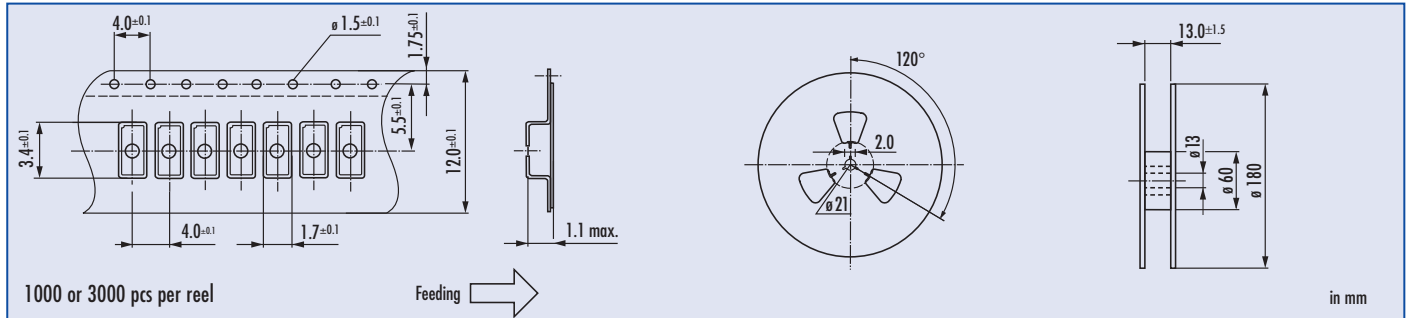
### Order Information

Q	frequency	type	load capacitance	stability at 25 °C	option 1	option 2
Quartz	0.032768 MHz	JTX310	12.5 pF 7 pF, 9 pF (ask)	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	AEC = AEC-Q200 qualified HMR = high mechanical reliability

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

# Quartz Crystal · JTX310

## Taping Specification



## Reflow Soldering Profile

