



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 version available
- package height 0.9 mm max.



RoHS compliant



Pb free



REACH compliant



Conflict mineral free

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	6 pF / 7 pF / 9 pF / 12.5 pF std. (lower CL ask if available)
temperature constant (T _C)	T _C = -0.04 ppm / °C ² max. T _C = -0.034 ppm / °C ² typical
frequency temperature characteristic	$\Delta f = T_C \cdot (T_A - T_{TP})^2$ in [ppm] T _A = actual ambient temperature T _{TP} = 25 °C ± 5 °C T _{TP} = turning point temperature
operating temperature range	refer to frequency stability table
shunt capacitance C ₀	1.15 pF typical
series resistance max. (ESR)	70 kΩ for STD. & T1 & opt. for T2 & T3 80 kΩ for T2 and T3 60 kΩ and 50 kΩ opt. for T1
storage temperature	-55 °C ~ +125 °C
drive level max.	0.5 μW
aging first year	< ± 3 ppm

TABLE 1: FREQUENCY STABILITY VS. TEMPERATURE

frequency stability		-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

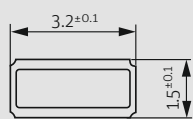
company code
date code / production code

MECHANICAL ENDURANCE OPTIONS

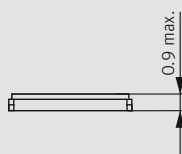
AEC (according to AEC-Q200): 100 g, half sine pulse, 6.0 ms
HMR (high mechanical reliability): 3000 g, half sine pulse, 0.3 ms

note: all versions are AEC-Q200 qualified

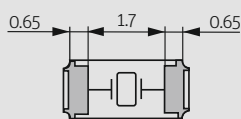
DIMENSIONS



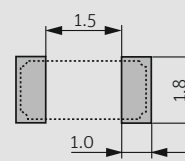
top view



side view



bottom view



pad layout

in mm

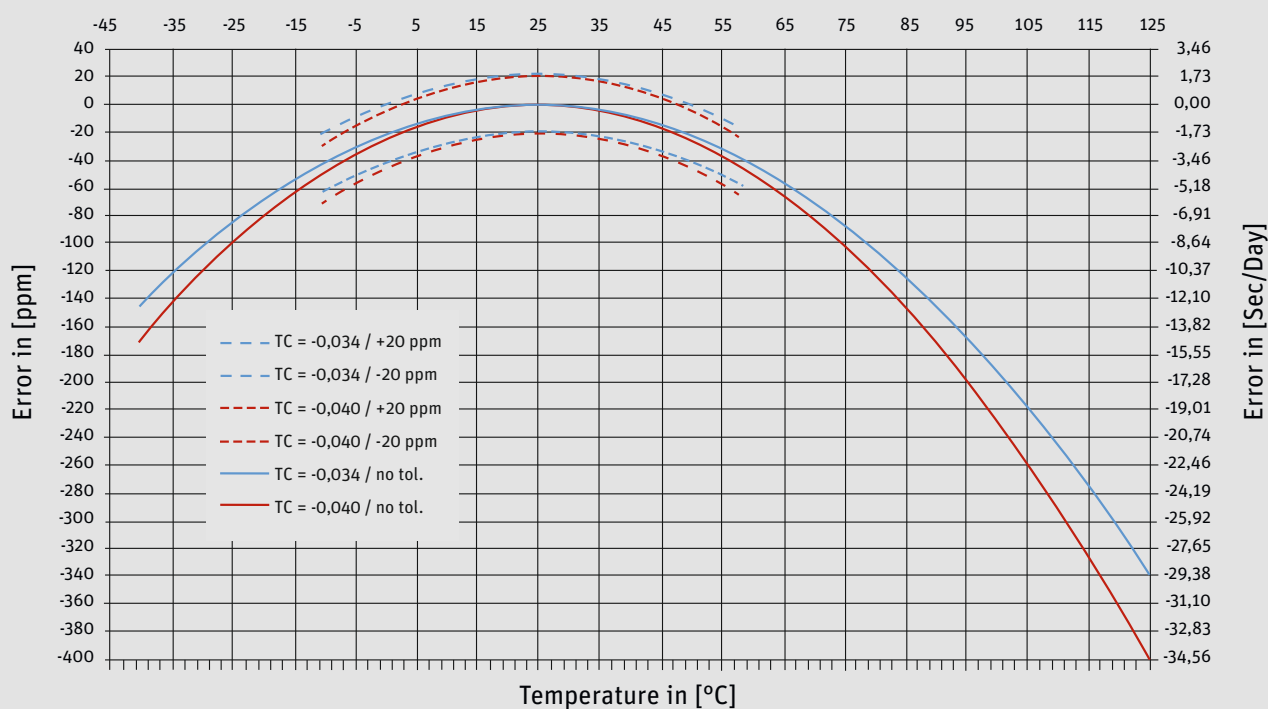
ORDER INFORMATION

Q	frequency	type	load capacitance	tolerance at 25 °C	option 1	option 2	option 3
Quartz	0.032768 MHz	JTX310	12.5 pF std. 6 pF / 7 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	AEC = AEC-Q200 qualified HMR = high mech. reliability	none = 70kΩ for T1 80kΩ for T2 & T3 70K = 70kΩ opt. for T2 & T3 60K = 60kΩ opt. for T1 50K = 50kΩ opt. for T1

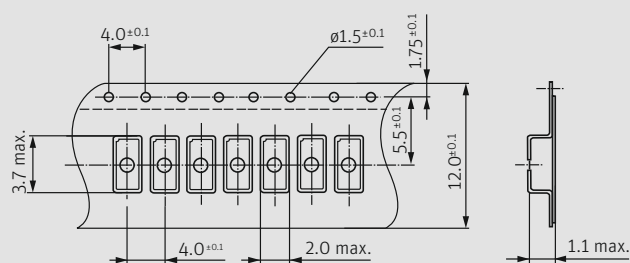
Example: Q 0.032768-JTX310-12.5-20-T1-AEC-60K-LF (Suffix LF = RoHS compliant / Pb free)

Automotive SMD Crystal JTX310

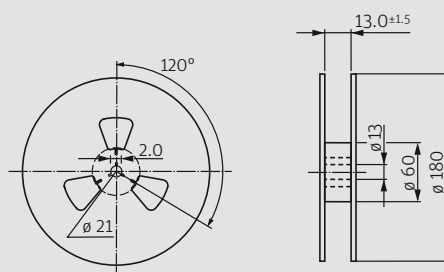
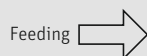
FREQUENCY ERROR VS. TEMPERATURE IN PPM OR SECONDS PER DAY



TAPING SPECIFICATION

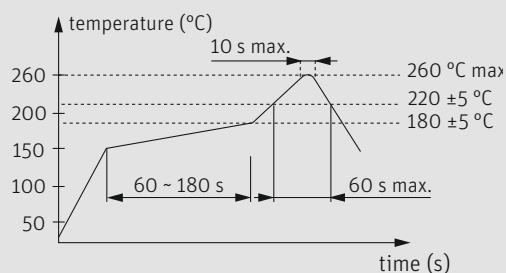


3000 pcs per reel (standard)
1000 pcs per reel (on request)



in mm

REFLOW SOLDERING PROFILE



note: parts are also suitable for soldering systems with lead (Pb) content