

actual size

Quartz Crystal JTX110

- SMD Tuning Fork Crystal • 1.6 x 1.0 mm
- 32.768 kHz
- package height 0.5 mm max.



RoHS compliant



Pb free



REACH compliant



Conflict mineral free

GENERAL DATA	
TYPE	JTX110
frequency	32.768 kHz
frequency tolerance at 25 °C ± 5 °C	± 20 ppm
load capacitance C_L	12.5 pF std. / 10 pF / 9 pF / 7 pF / 6 pF
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	$\Delta f = T_C \cdot (T_A - T_{TP})^2 \text{ in [ppm]}$ $T_A = \text{actual ambient temperature}$ $T_{TP} = 25 \text{ }^\circ\text{C} \pm 5 \text{ }^\circ\text{C}$ $T_{TP} = \text{turning point temperature}$
operating temperature range	-20 °C ~ +70 °C ~ -40 °C ~ +105 °C
shunt capacitance C_0	1.3 pF typical
series resistance typ. (ESR)	70 kΩ at +25 °C
series resistance max. (ESR)	80 kΩ / 90 kΩ (for T1) / 110 kΩ (for T2)
storage temperature	-40 °C ~ +105 °C
drive level max.	0.5 μW
aging first year	< ± 3 ppm

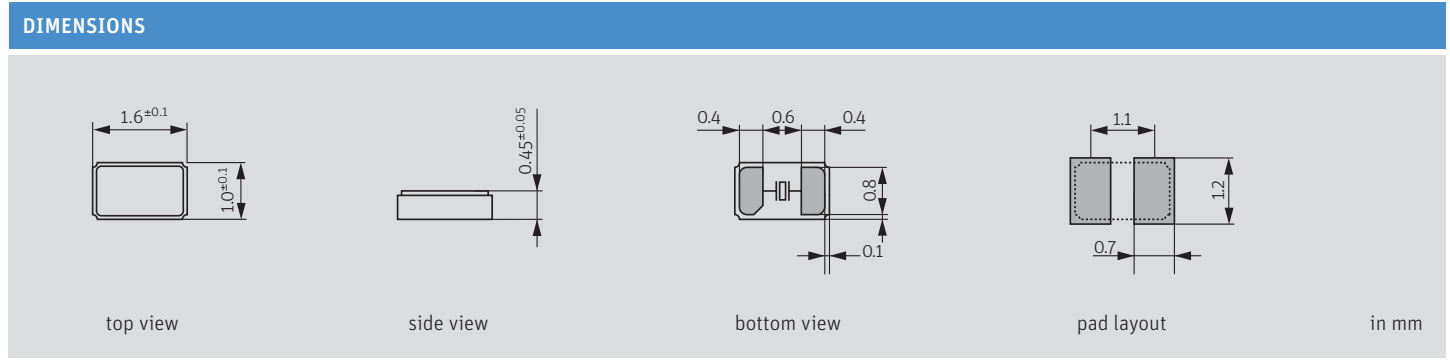
TABLE 1: FREQUENCY STABILITY VS. TEMPERATURE				
frequency stability		-80 ppm	-160 ppm	-250 ppm
-20 °C ~ +70 °C	STD.	●		
-40 °C ~ +85 °C	T1		●	
-40 °C ~ +105 °C	T2			●

● available

MARKING

internal code / CL code / datecode
 date code = YWW
 Y = year
 WW = week

CL code:
 A = 12.5pF
 B = 9pF
 C = 7pF
 D = 6pF



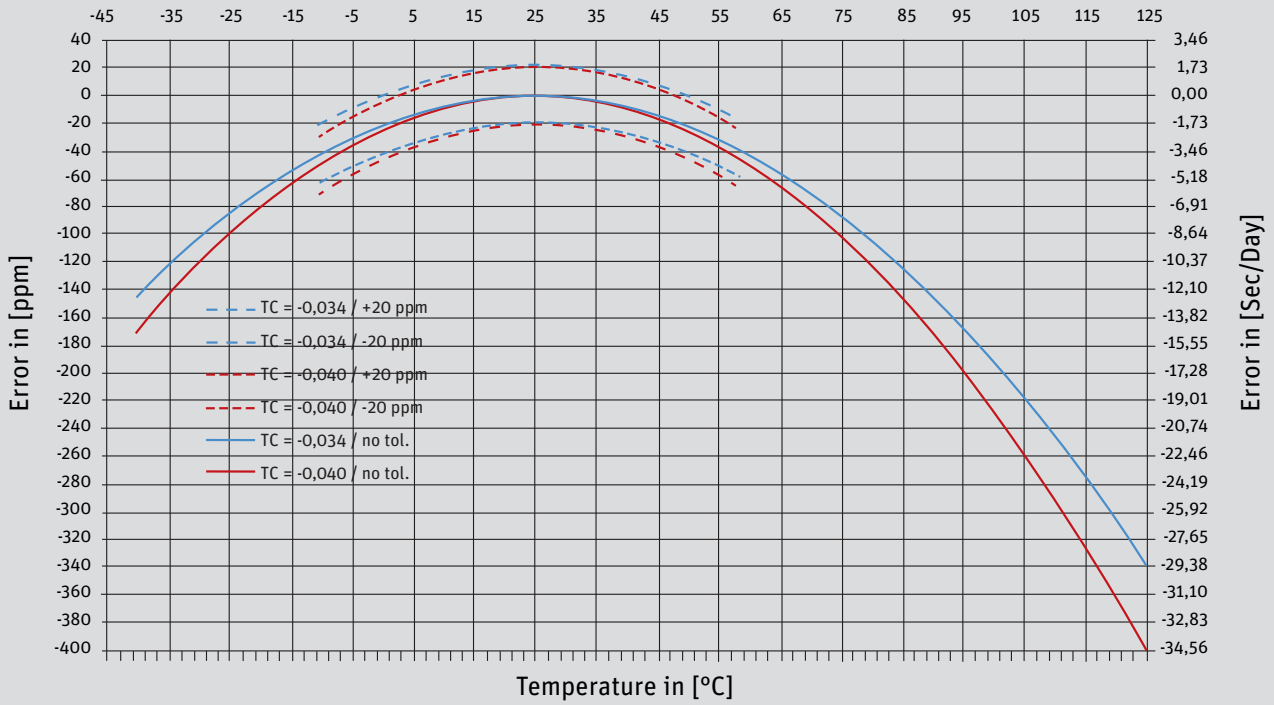
ORDER INFORMATION

Q	frequency	type	load capacitance	tolerance at 25 °C	temperature range options	ESR option
Quartz	0.032768 MHz	JTX110	12.5 pF standard 10 pF 9 pF 7 pF 6 pF	20 = ±20 ppm	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C	blank = 80 kΩ 90k = 90 kΩ 110k = 110 kΩ (for T2)

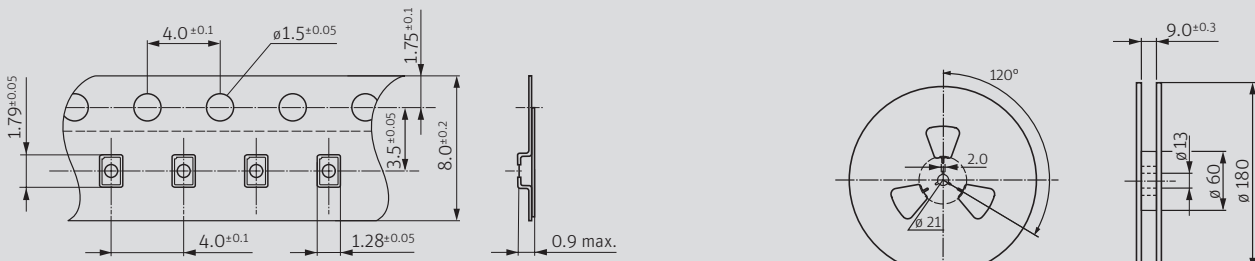
Example: Q 0.032768-JTX110-12.5-20-T1-90k-LF (Suffix LF = RoHS compliant / Pb free)

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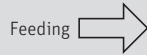
FREQUENCY ERROR VS. TEMPERATURE IN PPM OR SECONDS PER DAY



TAPING SPECIFICATION

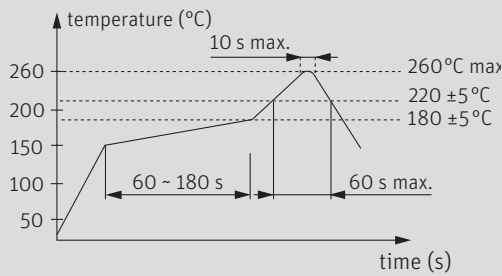


3000 pcs per reel (standard)
1000 pcs per reel (on request)



in mm

REFLOW SOLDERING PROFILE



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