



actual size

# Quartz Crystal · J31SMT

- SMD Tuning Fork Crystal · 3.2 x 1.5 mm
- 32.768 kHz
- cost efficient
- package height 0.9 mm max.



RoHS compliant



Pb free



REACH compliant



Conflict mineral free

GENERAL DATA	
TYPE	J31SMT
frequency	32.768 kHz
frequency tolerance at 25 °C ± 5 °C	± 20 ppm
load capacitance $C_L$	12.5 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	refer to frequency stability table
shunt capacitance $C_o$	1.15 pF typical
series resistance max. (ESR)	70 k $\Omega$ for temp. code K (-40 °C ~ +85 °C)
storage temperature	-55 °C ~ +125 °C
drive level max.	0.5 $\mu\text{W}$
aging first year	< ± 3 ppm

TABLE 1: FREQUENCY STABILITY VS. TEMPERATURE

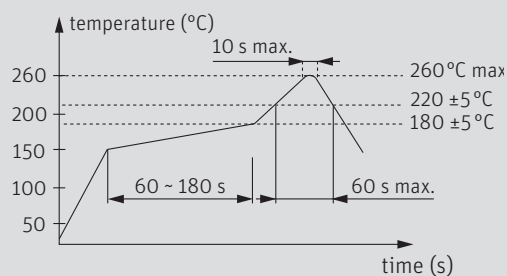
temperature code and frequency stability	-160 ppm	
-40 °C ~ +85 °C	K	●

● standard

### MARKING

T / year / week / CL code

### REFLOW SOLDERING PROFILE

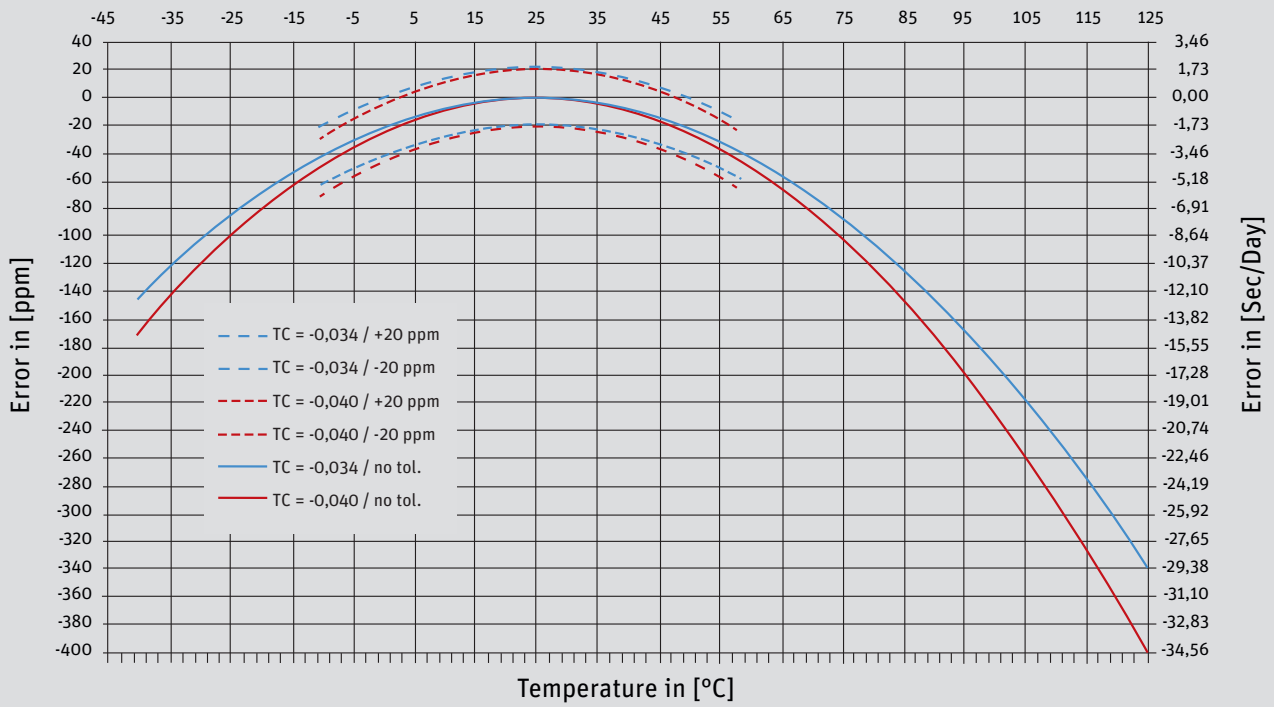


note: parts are also suitable for soldering systems with lead (Pb) content

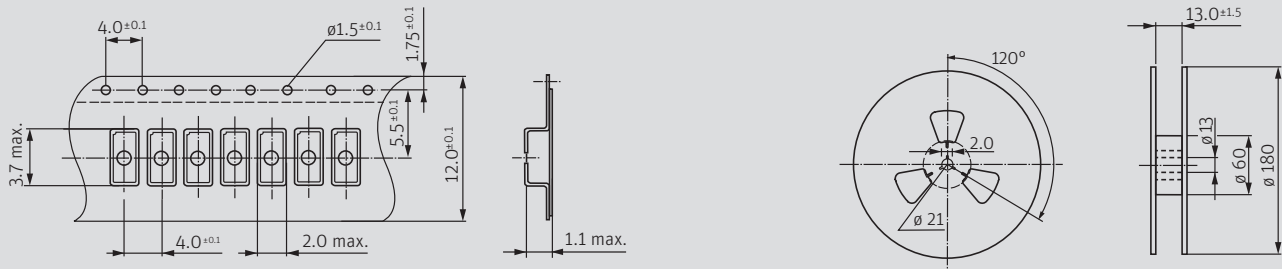
DIMENSIONS				
				in mm
top view	side view	bottom view	pad layout	

ORDER INFORMATION				
type	cl code	tolerance at +25 °C	temperature range	frequency
J31SMT	A = 12.5 pF std.	D = ±20 ppm std.	K = -40 °C ~ +85 °C	32K768 = 32.768 kHz
<b>Example: J31SMT-A-D-K-32K768</b>				

## FREQUENCY ERROR VS. TEMPERATURE IN PPM OR SECONDS PER DAY



## TAPING SPECIFICATION



3000 pcs per reel (standard)

Feeding

in mm