



Quartz Crystal SMQ32S

- SMD Tuning Fork Crystal • 9.2 x 3.4 mm
- 32.768 kHz standard
- package height 3.0 mm max.



RoHS compliant



Pb free pads



REACH compliant



Conflict mineral free

GENERAL DATA

TYPE	SMQ32S
frequency	32.768 kHz (30.0 ~ 80.0 kHz on request)
frequency tolerance at 25 °C ± 5 °C	± 30 ppm
load capacitance C_L	12.5 pF std. (6 pF ~ 12.5 pF on request)
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	$\Delta f = T_C \cdot (T_A - T_{Tp})^2$ in [ppm] T_A = actual ambient temperature $T_{Tp} = 25\text{ °C} \pm 5\text{ °C}$ T_{Tp} = turning point temperature
operating temperature range	-20 °C ~ +70 °C / -40 °C ~ +85 °C
shunt capacitance C_0	1.4 pF typical
series resistance max. (ESR)	50 kΩ
storage temperature	-40 °C ~ +90 °C
drive level max.	1 μW
aging first year	< ± 3 ppm

TABLE 1: FREQUENCY STABILITY VS. TEMPERATURE

frequency stability		-80 ppm	-160 ppm
-20 °C ~ +70 °C	STD.	●	
-40 °C ~ +85 °C	T1		●

● standard

MARKING

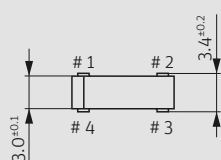
factory code / 32.7 / date code (MY)

data code: A ~ M: Jan. - Dec.

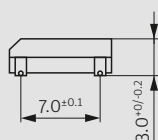
8: 2018 9: 2019 0: 2020 1: 2021 2: 2022 3: 2023

Jan.	Febr.	Mar.	Apr.	May	June
A	B	C	D	E	F
July	Aug.	Sept.	Oct.	Nov.	Dec.
G	H	J	K	L	M

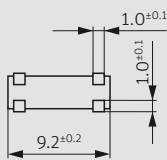
DIMENSIONS



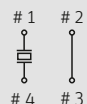
top view



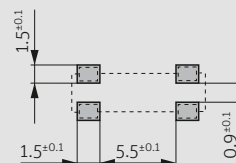
side view



bottom view



#2 - #3 connected to housing



pad layout

Terminals
1 - # 4 X-tal
2 - # 3 GND

in mm

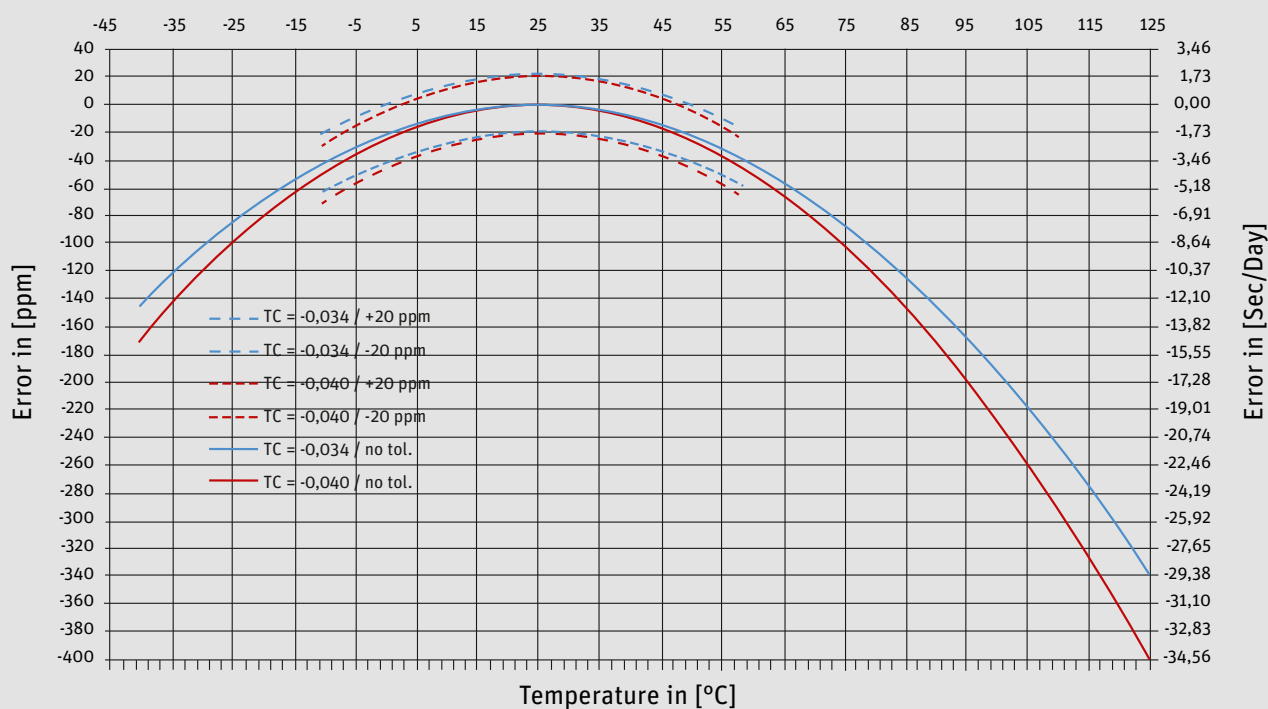
ORDER INFORMATION

Q	frequency	type	load capacitance	tolerance at 25 °C	option
Quartz	0.032768 MHz	SMQ32S	6 pF ~ 12.5 pF 12.5 pF Std.	30 = ±30 ppm	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C

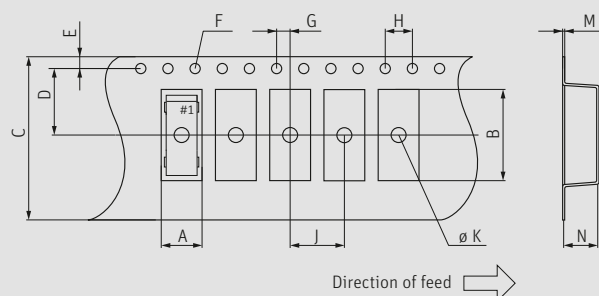
Example: Q 0.032768-SMQ32S-12.5-30-T1-LF (Suffix LF = RoHS compliant / Pb free pads)

Quartz Crystal SMQ32S

FREQUENCY ERROR VS. TEMPERATURE IN PPM OR SECONDS PER DAY



TAPING SPECIFICATION

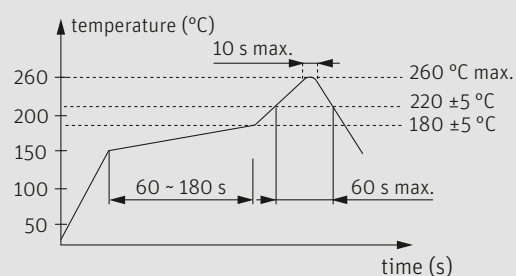


1000 pcs per reel

in mm

A	B	C	D	E	G
5.5 ^{±0.1}	9.3 ^{±0.1}	16.0 ^{±0.3}	7.5 ^{±0.1}	1.75 ^{±0.1}	Ø1.5 ^{±0.1}
G	H	J	K	L	M
2.0 ^{±0.1}	4.0 ^{±0.1}	8.0 ^{±0.1}	Ø 2.5 ^{±0.05}	0.3 ^{±0.05}	3.4 ^{±0.1}

REFLOW SOLDERING PROFILE



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