



SMQ32

SMQ32 S

SMQ32 SL

actual size

# Quartz Crystal · SMQ

## Surface Mount Tuning Fork Quartz Crystal

### Features

- RoHS compliant
- three different package versions
- reflow soldering types

### General Data

type	SMQ32	SMQ32S	SMQ32SL
frequency	32.768 kHz (30.0 ~ 80.0 kHz)		32.768 kHz (30.0 ~ 80.0 kHz)
frequency tolerance at 25 °C ±2 °C	± 30 ppm	±30 ppm	± 20 ppm
load capacitance C <sub>L</sub>	10 pF	12.5 pF	12.5 pF
frequency temperature characteristic	f (ppm) = -0.04 ( 25°C -T* ) <sup>2</sup>		f (ppm) = -0.04 ( 25°C -T* ) <sup>2</sup>
operating temperature range	-20°C ~ +70°C / -40°C ~ +85°C		-20°C ~ +70°C / -40°C ~ +85°C
shunt capacitance C <sub>0</sub>	2 pF typical	1.75 pF typical	1.3 pF typical
ratio C <sub>0</sub> / C <sub>1</sub>	580 typical	480 typical	518 typical
series resistance max. ( ESR )	33.0 kΩ	50.0 kΩ	50.0 kΩ
storage temperature	-40 °C ~ +90 °C		-40 °C ~ +90 °C
drive level max.	1 μW	1 μW	1 μW
aging first year	< ± 3 ppm		< ± 3 ppm

\* T = requested temperature

### Frequency Stability vs. Temperature

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

● standard

### Marking

SMQ32/32S: D327 date code

SMQ32SL: 32.768 KDS date code

date code:

A ~ M: Jan.- Dec.

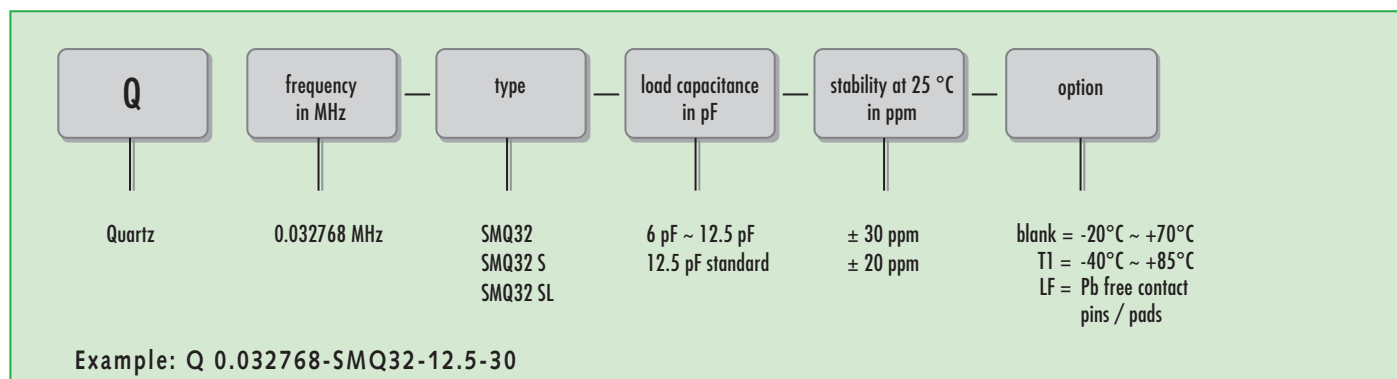
4: 2004

5: 2005

6: 2006

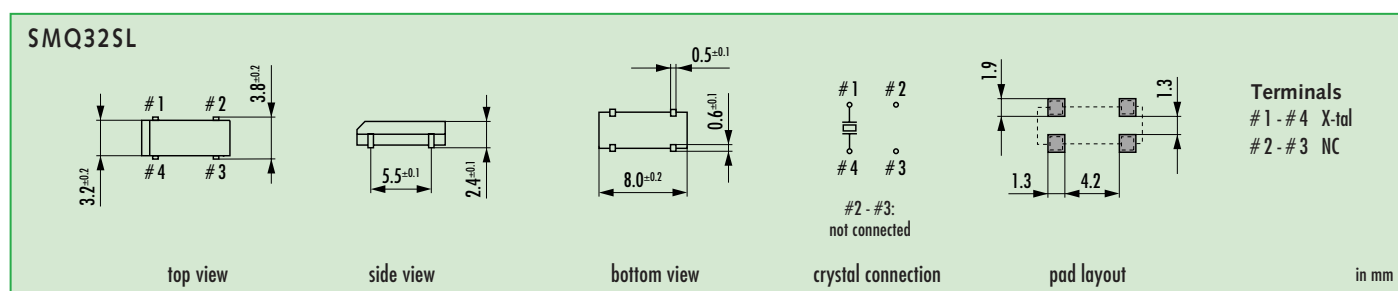
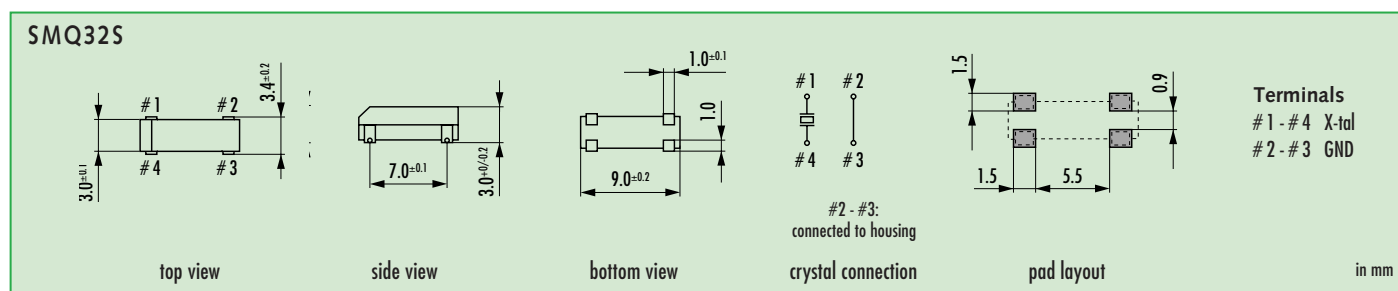
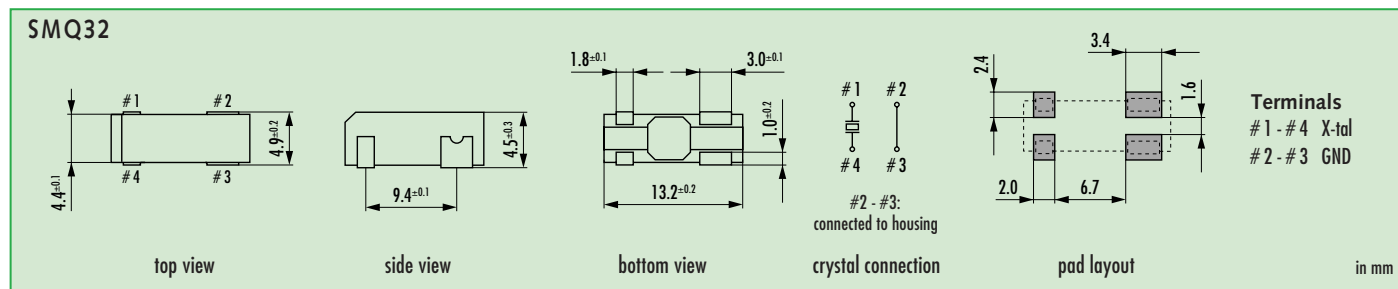
Jan.	Febr.	Mar.	Apr.	May	June
A	B	C	D	E	F
July	Aug.	Sept.	Oct.	Nov.	Dec.
G	H	J	K	L	M

### Order Information

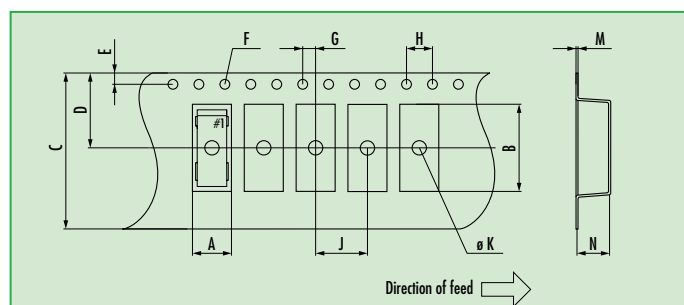


# Quartz Crystal · SMQ32 · SMQ32S · SMQ32SL

## Dimensions



## Taping Specification



SMQ32 (1000 pcs per reel)										
A	B	C	D	E	F	G	H	J	K	N
5.3±0.1	13.4±0.1	24.0±0.3	11.5±0.1	1.75±0.1	∅ 1.5±0.1	2.0±0.1	4.0±0.1	8.0±0.1	∅2.5±0.05	5.5±0.1
SMQ32 S (1000 pcs per reel)										
3.2±0.1	9.3±0.1	16.0±0.3	7.5±0.1	1.75±0.1	∅ 1.5±0.1	2.0±0.1	4.0±0.1	8.0±0.1	∅2.5±0.05	3.4±0.1
SMQ32 SL (1000 pcs per reel)										
4.1±0.1	8.5±0.1	16.0±0.3	7.5±0.1	1.75±0.1	∅ 1.5±0.1	2.0±0.1	4.0±0.1	8.0±0.1	∅2.5±0.05	2.7±0.1

## Reflow Soldering Profile

