

# 90SMX & 91SMX Crystals

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RoHS  
2002/95/EC

## Delivery Options

- Please contact our sales office for current leadtimes

## Holder Style

- 90SMX & 91SMX surface mount crystals are plastic encapsulated

## General Specifications

- Load Capacitance ( $C_L$ ): 6pF and 12.5pF standard
- Drive Level: 1.0μW max
- Ageing ±5ppm max per year at 25°C

## Packaging

- 90SMX & 91SMX surface mount crystals are available packaged individually or on tape and reel

## Standard Frequency Tolerance

- ±20ppm

## Operable Temperature Range

- 40 to 85°C

## Storage Temperature Range

- 55 to 125°C

## Environmental Specification

- Mechanical Shock: 75cm drop (3 times) onto hard wooden board
- Vibration: 1.5mm amplitude, 10Hz-60Hz, 2-3min in 3 directions (X, Y, Z axis) duration 2 hours each axis.

## Marking

- Frequency Indicator + Date Code

## Marking Explanation ( example: 32K152B )

The 32K is a code indicating frequency, in this case 32.768kHz

The 752 is the date code in YWW, ie.2007 wk 52

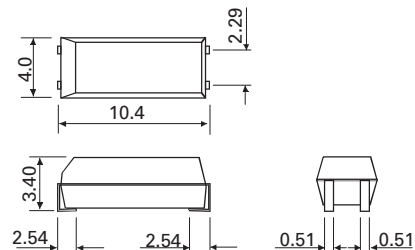
The letter on the end indicies: A for 90SMX, B for 91SMX

Note, if the letter is at the end of the crystal then it is 12.5pF loaded. If it appears after the 32K as 32KA152, then the crystal is 6pF loaded. This is the same for both 90SMX and 91SMX.

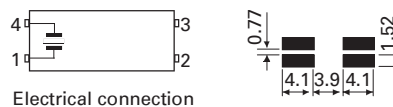
## Minimum Order Information Required

- Frequency + Holder + Load Capacitance

## Outline in mm - 90SMX

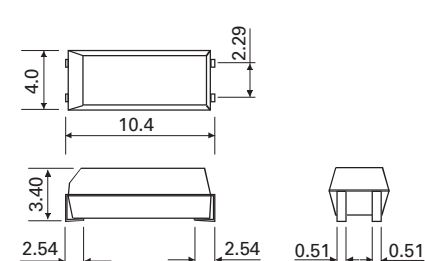


## Solder pad layout

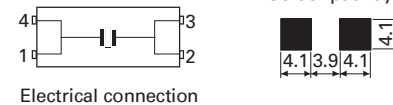


## Electrical connection

## Outline in mm - 91SMX

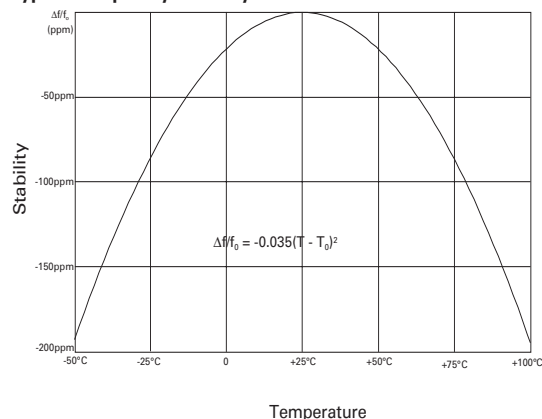


## Solder pad layout



## Electrical connection

## Typical Frequency Stability Characteristic



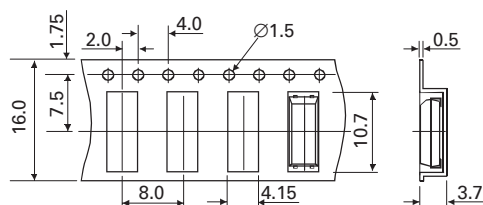


# Electrical Specification - maximum limiting values

Frequency Range	Frequency Tolerance @ 25°C ±5°C	Operable Temperature Range	Typical Frequency Stability Coefficient	ESR	Vibration
32.7680kHz	±20ppm	-40+85°C	-0.035/°C <sup>2</sup>	50kΩ	Fundamental

SURFACE MOUNT  
QUARTZ CRYSTALS

## Outline in mm - Tape



## Outline in mm - Reel

