

# 14SMX Crystals

ISSUE 9; 24 SEPTEMBER 2004

Outline in mm

## Delivery Options

- Please contact our sales office for current leadtimes

## Holder Style

- 14SMX surface mount crystals are encapsulated in a ceramic package with a seam welded metal lid

## General Specifications

- Load Capacitance ( $C_L$ ): 10pF to 75pF or Series
- Drive Level: 0.1mW max
- Static Capacitance ( $C_0$ ): 7pF max

## Packaging

- 14SMX surface mount crystals are available packaged individually or on tape and reel

## Standard Frequency Tolerances and Stability

- $\pm 15\text{ppm}$ ,  $\pm 20\text{ppm}$ ,  $\pm 30\text{ppm}$ ,  $\pm 50\text{ppm}$ ,  $\pm 100\text{ppm}$

## Operating Temperature Ranges

- 0 to 50°C      -30 to 80°C
- 10 to 60°C    -40 to 85°C
- 20 to 70°C

## Storage Temperature Range

- -40 to 85°C

## Solder Condition

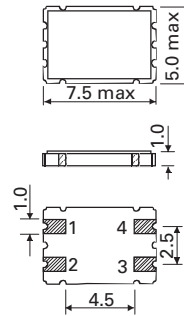
- For typical soldering conditions, please see the relevant page in Application Notes

## Marking

- Frequency only

## Minimum Order Information Required

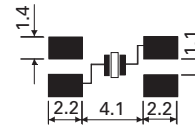
- Frequency + Holder + Frequency Tolerance @ 25°C  
+ Frequency Stability + Operating Temperature Range +  
Circuit Condition + Overtone Order



## Pad connections

1. Crystal
2. GND & lid
3. Crystal
4. GND & lid

## Solder pad layout



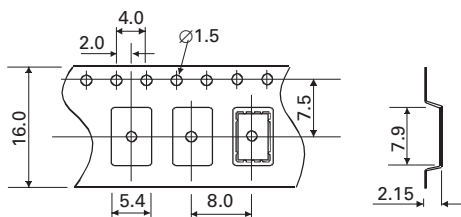
**Electrical Specification – maximum limiting values**

Frequency Range	Frequency Tolerance @ 25°C ±2°C	Operating Temperature Range	Frequency Stability Available Over Operating Temperature		ESR max.	Vibration Mode
			Minimum	Maximum		
8.0 to < 10.0MHz	±10ppm to ±100ppm	0 to 50°C	±5ppm	±100ppm	60Ω	Fundamental AT cut
		-10 to 60°C	±5ppm	±100ppm		
		-20 to 70°C	±5ppm	±100ppm		
		-30 to 80°C	±15ppm	±100ppm		
		-40 to 85°C	±20ppm	±100ppm		
10.0 to < 16.0MHz	±10ppm to ±100ppm	0 to 50°C	±5ppm	±100ppm	50Ω	Fundamental AT cut
		-10 to 60°C	±5ppm	±100ppm		
		-20 to 70°C	±5ppm	±100ppm		
		-30 to 80°C	±15ppm	±100ppm		
		-40 to 85°C	±20ppm	±100ppm		
16.0 to < 32.0MHz	±10ppm to ±100ppm	0 to 50°C	±5ppm	±100ppm	40Ω	Fundamental AT cut
		-10 to 60°C	±5ppm	±100ppm		
		-20 to 70°C	±5ppm	±100ppm		
		-30 to 80°C	±15ppm	±100ppm		
		-40 to 85°C	±20ppm	±100ppm		
28.0 to < 84.0MHz	±10ppm to ±100ppm	0 to 50°C	±5ppm	±100ppm	60Ω	3rd Overtone AT cut
		-10 to 60°C	±5ppm	±100ppm		
		-20 to 70°C	±5ppm	±100ppm		
		-30 to 80°C	±15ppm	±100ppm		
		-40 to 85°C	±20ppm	±100ppm		
84.0 to < 100.0MHz	±10ppm to ±100ppm	0 to 50°C	±5ppm	±100ppm	80Ω	5th Overtone AT cut
		-10 to 60°C	±5ppm	±100ppm		
		-20 to 70°C	±5ppm	±100ppm		
		-30 to 80°C	±15ppm	±100ppm		
		-40 to 85°C	±20ppm	±100ppm		

Note. High frequency fundamentals are available up to 200.0MHz, please contact Application Support.

SURFACE MOUNT QUARTZ CRYSTALS

**Outline in mm - Tape**



**Outline in mm - Reel**

