

# 12SMX AUTO

ISSUE 2; 1 NOVEMBER 2010 - RoHS 2002/95/EC

## Description

- Ceramic package with a hermetically seam sealed metal lid suitable for automotive applications. Qualified to AEC-Q200 and available with TS16949 release.

## General Specifications

- Load Capacitance ( $C_L$ ): 8pF standard
- Drive Level: 50µW standard
- Ageing: ±5ppm max per year at 25°C
- Shunt Capacitance ( $C_0$ ): 7pF max

## Standard Frequency Tolerances

- ±10ppm to ±50ppm

## Standard Frequency Stabilities

- ±15ppm to ±100ppm

## Operating Temperature Ranges

- -40 to 85°C
- -40 to 125°C

## Storage Temperature Range

- -40 to 150°C

## Environmental

- Qualified to AEC-Q200

## Packaging

- Loose in bulk pack, 100pcs per bag
- Tape and reel in accordance with EIA-481-D, 1kpcs per reel (please see pages 372 & 373)

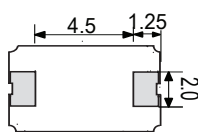
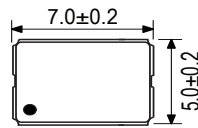
## Ordering Information (\*minimum required)

- Frequency\*
- Model\*
- Variant\*
- Frequency Tolerance (@25°C)\*
- Frequency Stability (over operating temperature range)\*
- Operating Temperature Range\*
- Load Capacitance\*
- Overtone

## Example

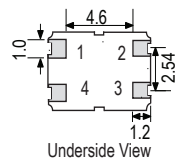
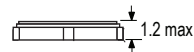
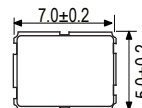
- 10.00MHz 12SMX AUTO - B  
50/100/-40 to 125C/8 FUND

## Outline (mm) 12SMX AUTO - A



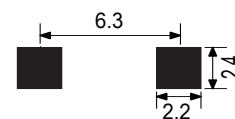
Underside View

## Outline (mm) 12SMX AUTO - B



Underside View

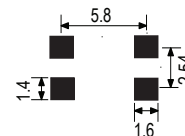
## Solder Pad Layout



## Pad Connections

1. Crystal
2. GND
3. Crystal
4. GND

## 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 Range		ESR Max	Vibration Mode
			Minimum	Maximum		
6.0 to 8.0MHz	±10ppm to ±30ppm	-40 to 85°C	±15ppm	±50ppm	150Ω	Fundamental AT cut
	±20ppm to ±50ppm	-40 to 125°C	±50ppm	±100ppm		
>8.0 to 9.0MHz	±10ppm to ±30ppm	-40 to 85°C	±15ppm	±50ppm	100Ω	
	±20ppm to ±50ppm	-40 to 125°C	±50ppm	±100ppm		
>9.0 to 11.0MHz	±10ppm to ±30ppm	-40 to 85°C	±15ppm	±50ppm	60Ω	
	±20ppm to ±50ppm	-40 to 125°C	±50ppm	±100ppm		
>11.0 to 40.0MHz	±10ppm to ±30ppm	-40 to 85°C	±15ppm	±50ppm	40Ω	
	±20ppm to ±50ppm	-40 to 125°C	±50ppm	±100ppm		
26.0 to 80.0MHz	±10ppm to ±30ppm	-40 to 85°C	±15ppm	±50ppm	100Ω	3rd Overtone AT cut
	±20ppm to ±50ppm	-40 to 125°C	±50ppm	±100ppm		

Note. For any other frequencies / specifications please contact our sales offices

