

# 86SMX CRYSTALS

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*Not Recommended For New Designs*

## Delivery Options

- Common frequencies are available from stock. Please see p142 for details

## Holder Style

- 86SMX surface mount crystals are plastic encapsulated

## General Specifications

- Load Capacitance ( $C_L$ ): 10pF to 50pF or Series
- Drive Level: 100 $\mu$ W max

## Packaging

- 86SMX surface mount crystals are available bulk packed or on tape and reel

## Standard Frequency Tolerances and Stabilities

- $\pm 10$ ppm,  $\pm 20$ ppm,  $\pm 30$ ppm,  $\pm 50$ ppm,  $\pm 100$ ppm,  $\pm 150$ ppm

## Operating Temperature Ranges

- 0 to 50°C      -20 to 70°C
- 10 to 60°C    -40 to 90°C

## Storage Temperature Range

- 55 to 125°C

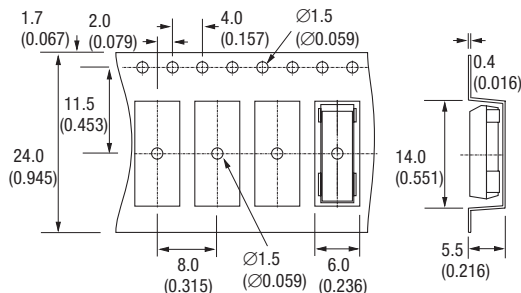
## Marking

- Frequency only

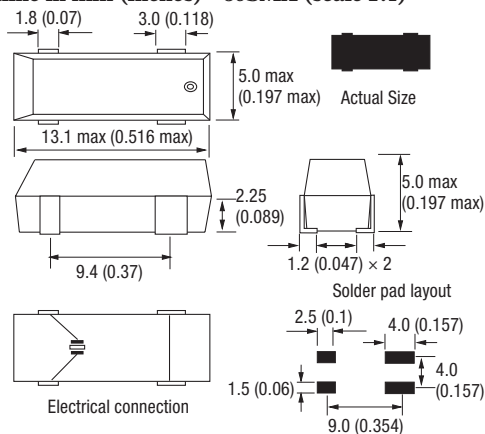
## Minimum Order Information Required

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

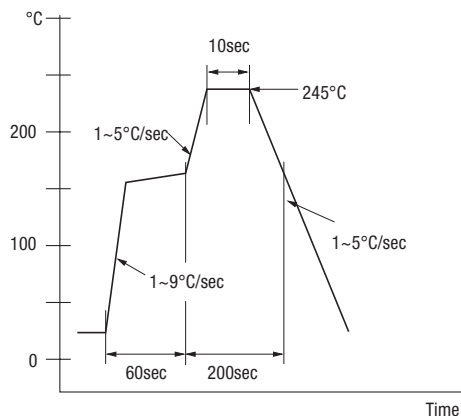
## Outline in mm (inches) - Tape



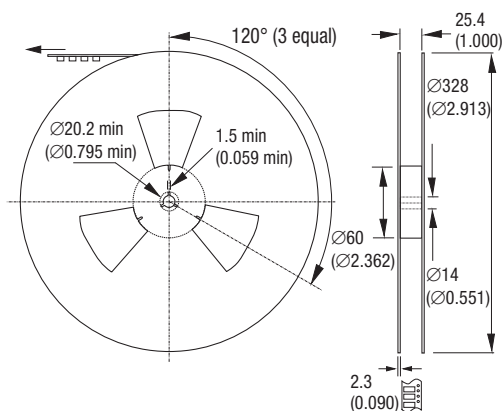
## Outline in mm (inches) - 86SMX (scale 2:1)



## Typical Solder Condition - Infrared Reflow



## Outline in mm (inches) - Reel (scale 1:8)



# 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		
3.57 to < 3.70MHz	±10ppm to ±100ppm	0 to 50°C	±10ppm	±100ppm	200Ω	Fundamental
		-10 to 60°C	±20ppm			
		-20 to 70°C	±30ppm			
		-40 to 90°C	±50ppm	±150ppm		
3.70 to < 4.0MHz	±10ppm to ±100ppm	0 to 50°C	±10ppm	±100ppm	180Ω	Fundamental
		-10 to 60°C	±20ppm			
		-20 to 70°C	±30ppm			
		-40 to 90°C	±50ppm	±150ppm		
4.0 to < 5.0MHz	±10ppm to ±100ppm	0 to 50°C	±10ppm	±100ppm	150Ω	Fundamental
		-10 to 60°C	±20ppm			
		-20 to 70°C	±30ppm			
		-40 to 90°C	±50ppm	±150ppm		
5.0 to < 10.0MHz	±10ppm to ±100ppm	0 to 50°C	±10ppm	±100ppm	120Ω	Fundamental
		-10 to 60°C	±20ppm			
		-20 to 70°C	±30ppm			
		-40 to 90°C	±50ppm	±150ppm		
10.0 to < 16.0MHz	±10ppm to ±100ppm	0 to 50°C	±10ppm	±100ppm	50Ω	Fundamental
		-10 to 60°C	±20ppm			
		-20 to 70°C	±30ppm			
		-40 to 90°C	±50ppm	±150ppm		
16.0 to < 26.0MHz	±10ppm to ±100ppm	0 to 50°C	±10ppm	±100ppm	40Ω	Fundamental
		-10 to 60°C	±20ppm			
		-20 to 70°C	±30ppm			
		-40 to 90°C	±50ppm	±150ppm		
26.0 to 33.0MHz	±10ppm to ±100ppm	0 to 50°C	±10ppm	±100ppm	25Ω	Fundamental
		-10 to 60°C	±20ppm			
		-20 to 70°C	±30ppm			
		-40 to 90°C	±50ppm	±150ppm		
26.0 to < 36.0MHz	±10ppm to ±100ppm	0 to 50°C	±10ppm	±100ppm	100Ω	3rd Overtone
		-10 to 60°C	±20ppm			
		-20 to 70°C	±30ppm			
		-40 to 90°C	±50ppm	±150ppm		
36.0 to 90.0MHz	±10ppm to ±100ppm	0 to 50°C	±10ppm	±100ppm	80Ω	3rd Overtone
		-10 to 60°C	±20ppm			
		-20 to 70°C	±30ppm			
		-40 to 90°C	±50ppm	±150ppm		