

## CX-1-SM Crystals 10.0kHz to 2.10MHz

ISSUE 5; 26 MARCH 1998

### Delivery Options

- Please contact our sales office for current leadtimes

### Description

- Statek's CX-1,-1V, -1H range of SM quartz crystals are designed for surface mounting on printed circuit boards or hybrid substrates. CX-1V-SM models are for use in Pierce oscillators. CX-1H-SM models are for use in series oscillators and CX-1-SM are length extensional mode resonators

### Holder Style

- CX-1-SM: hermetically sealed ceramic package

### Terminations

- SM1 - gold plated
- SM2 - nickel solder plated
- SM3 - nickel solder plated, solder dipped

### Methods of Attachment

- Vapor phase, wave solder, infrared or silver epoxy

### General Specifications

- Load Capacitance ( $C_L$ ) CX-1V-SM type:
  - 11pF (10.0 to < 16.0kHz)
  - 10pF (16.0 to < 25.0kHz)
  - 9pF (25.0 to < 55.0kHz)
  - 8pF (55.0 to < 100.0kHz)
  - 5pF (100.0 to < 180.0kHz)
  - 4pF (180.0 to < 614.40kHz)
- CX-1H-SM type is calibrated at Series Resonance
- Load Capacitance ( $C_L$ ) CX-1-SM type:
  - 7pF (530.0kHz to 2.10MHz)
 Other values available upon request
- Static Capacitance ( $C_0$ ): 1.0pF to 2.0pF
- Drive Level CX-1V-SM type:
  - 0.5μW max. (10.0 to < 25.0kHz)
  - 1.0μW max. (25.0 to < 614.40kHz)
- Drive Level CX-1-SM type:
  - 3.0μW max. (530.0kHz to 2.10MHz)
- Drive Level CX-1H-SM type:
  - 1.5μW max. (10.0 to < 25.0kHz)
  - 3.0μW max. (25.0 to < 614.40kHz)
- Ageing: ±5ppm maximum first year

### Operating Temperature Ranges

- -10 to 70°C = C
- -40 to 85°C = I
- -55 to 125°C = M

### Storage Temperature Range

- -55 to 125°C

### Environmental Specification

- Shock: 1000g, 1.0ms  $\frac{1}{2}$  sine (< 614.40kHz)
- Shock: 750g, 0.3ms  $\frac{1}{2}$  sine (530.0kHz to 2.10MHz)
- Vibration: 20g, 10 to 2000Hz

### Solder Conditions

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

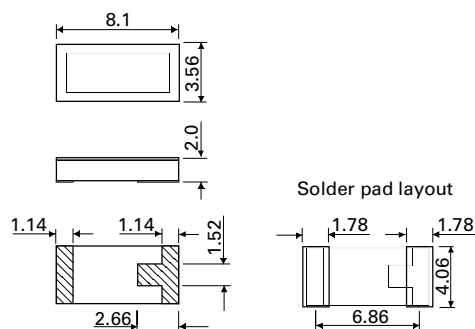
### Marking

- Includes Frequency

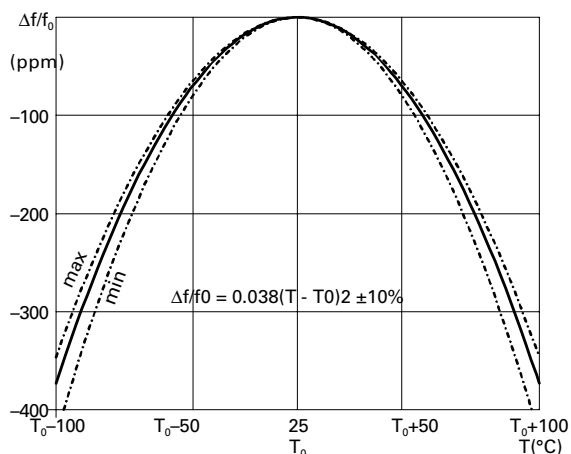
### Minimum Order Information Required

- Frequency + Model + Terminations + Frequency Tolerance @ 25°C + Operating Temperature Range + Circuit Condition

### Outline in mm



### Frequency Temperature Curve (32.768kHz)



# Electrical Specification – maximum limiting values

Frequency Range	Frequency Tolerance @ 25°C ±2°C	Operating Temperature Range	*ESR max.	Vibration Mode
10.0 to < 25.0kHz	A = ±30ppm	-10 to 70°C	2.1MΩ	Tuning Fork
	B = ±100ppm	-40 to 85°C		
	C = ±1000ppm	-55 to 125°C		
25.0 to < 50.0kHz	A = ±30ppm	-10 to 70°C	360kΩ	Tuning Fork
	B = ±100ppm	-40 to 85°C		
	C = ±1000ppm	-55 to 125°C		
50.0 to < 75.0kHz	A = ±30ppm	-10 to 70°C	160kΩ	Tuning Fork
	B = ±100ppm	-40 to 85°C		
	C = ±1000ppm	-55 to 125°C		
75.0 to < 170.0kHz	A = ±50ppm	-10 to 70°C	100kΩ	Tuning Fork
	B = ±100ppm	-40 to 85°C		
	C = ±1000ppm	-55 to 125°C		
170.0 to < 250.0kHz	A = ±100ppm	-10 to 70°C	50kΩ	Tuning Fork
	B = ±200ppm	-40 to 85°C		
	C = ±2000ppm	-55 to 125°C		
250.0 to < 614.40kHz	A = ±200ppm	-10 to 70°C	25kΩ	Tuning Fork
	B = ±500ppm	-40 to 85°C		
	C = ±5000ppm	-55 to 125°C		
530.0kHz to 2.10MHz **	A = ±500ppm	-10 to 70°C	3kΩ	Extensional
	B = ±1000ppm	-40 to 85°C		
	C = ±10000ppm	-55 to 125°C		

## Ordering Example

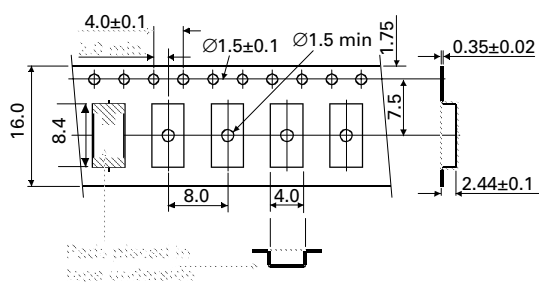
Frequency 600.0kHz CX-1V SM1 C C 9pF  
 Model No \_\_\_\_\_  
 Termination \_\_\_\_\_  
 Frequency Tolerance @ 25°C \_\_\_\_\_  
 Operating Temperature Range: C = -10 to 70°C; I = -40 to 85°C; M = -55 to 125°C \_\_\_\_\_  
 Load Capacitance (Circuit Condition) - if non-standard \_\_\_\_\_

\* Above ESR values are for CX-1H only, CX-1V divide above values by 3.

\*\* Only CX-1 available, ESR for this range is as shown in table

Please note: other frequency tolerances are available on request

## Outline in mm - Tape



## Outline in mm - Reel

