

FEATURES

- Designed for infrared, vapour phase or epoxy mounting
- Low profile, (<1.0mm) hermetically sealed ceramic package
- Excellent ageing characteristics
- High shock and vibration resistance
- Full military testing available
- Available with glass or ceramic lid
- Custom designs available

DESCRIPTION

CX9SM crystals are designed for applications requiring very small footprint and low profile (<1.0mm). Using micro-machining processes this hermetically-sealed crystal ensures high stability and low ageing. Designed and manufactured by Statek Inc.

SPECIFICATION

Specifications stated are typical at 25°C unless otherwise indicated. Specifications may change without notice.

Fundamental Frequency:	25.0MHz	49.0MHz	155.52MHz
Motional Resistance R (Ω):	30	30	25
Motional Capacitance C1 (fF):	1.8	2.1	2.5
Quality Factor Q (k):	120	60	16
Shunt Capacitance C0 (pF):	1.0	1.0	1.4

Standard Calibration Tolerance¹: ±100ppm or tighter as required.

Load Capacitance: 10pF (or as specified)

Drive Level: 200µW maximum <50MHz

100µW maximum >50MHz

Frequency Stability^{1,2,3}

-10° to +70°C: ±50ppm to ±10ppm

-40° to +85°C: ±100ppm to ±20ppm

-55° to +125°C: ±100ppm to ±30ppm

Ageing First Year: ±5ppm maximum

(Better than ±1ppm available)

Shock, Survival⁴: 5000g, 0.3ms, ½ sine

Vibration, Survival: 20g rms, 10~2000Hz swept sine

Operating Temperature Range: -10°C to +70°C (Commercial)

-40°C to +85°C (Industrial)

-55°C to +125°C (Military)

Storage Temperature Range: -55° to +125°C

Maximum Process Temperature: +260°C for 20 seconds

1. Other tolerances available, contact Euroquartz sales
2. Does not include calibration tolerance. (Frequency stability characteristics follow that of the AT-Cut thickness-shear mode.)
3. 5ppm max. for frequencies below 40MHz.
4. Per MIL-STD-202G, Method 204D, Condition D. Random vibration testing also available.

HOW TO ORDER CX9SM AT CRYSTALS

CX9 - S - C - SM1 - 49.0M, 100 / 100 / - / I

'S' if special, custom design. Otherwise leave blank

Blank = glass lid
C = ceramic lid

Terminations
SM1 = Gold plated *
SM2 = Solder plated
SM3 = Solder dipped
SM4 = Solder plated *
SM5 = Solder dipped *
* = Lead free

Frequency
M = MHz

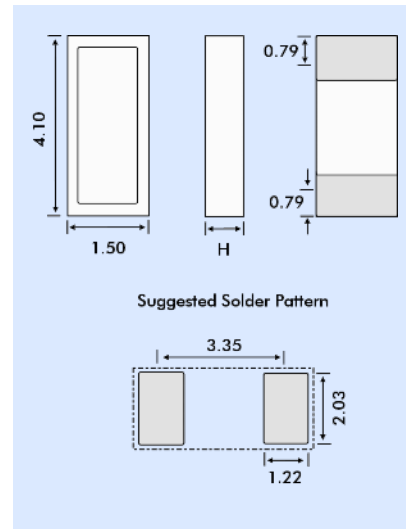
Calibration Tolerance @25°C (in ppm)*

Frequency Stability over Temp. Range (in ppm)*

Temp. Range
C = -10° ~ +70°C
I = -40° ~ +85°C
M = -55° ~ +125°C
S = Customer specified

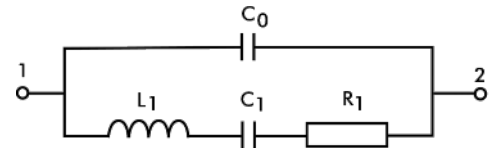
*Alternative 'total' tolerance (in ppm)

OUTLINE & DIMENSIONS



Dim. H	Glass Lid	Ceramic Lid
SM1	0.87	0.90
SM2	0.87	0.90
SM3	0.91	0.94
SM4	0.87	0.90
SM5	0.91	0.94

CRYSTAL EQUIVALENT CIRCUIT



R1 Motional Resistance

L1 Motional Inductance

C1 Motional Capacitance

C0 Shunt Capacitance

PACKAGING OPTIONS

CX9SM crystals are available either tray packed (<250pcs) or tape and reel (>250 pieces).

16mm tape, 178mm or 330mm reels (EIA 418).

TERMINATIONS - PLATING

Designation	Termination
SM1	Gold Plated (Lead Free)
SM2	Solder Plated
SM3	Solder Dipped
SM4	Solder Plated (Lead Free)
SM5	Solder Dipped (Lead Free)