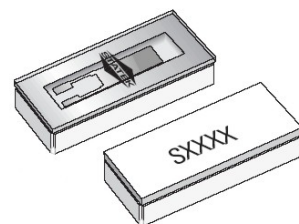


FEATURES

- Designed for infrared, vapour phase or epoxy mounting
- Low profile, 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

CX1SM AT crystals are leadless devices designed for surface mounting. The crystals are hermetically sealed in a rugged, ceramic package. Due to its robust design this crystal has gained wide acceptance in the industry.

APPLICATIONS
Medical

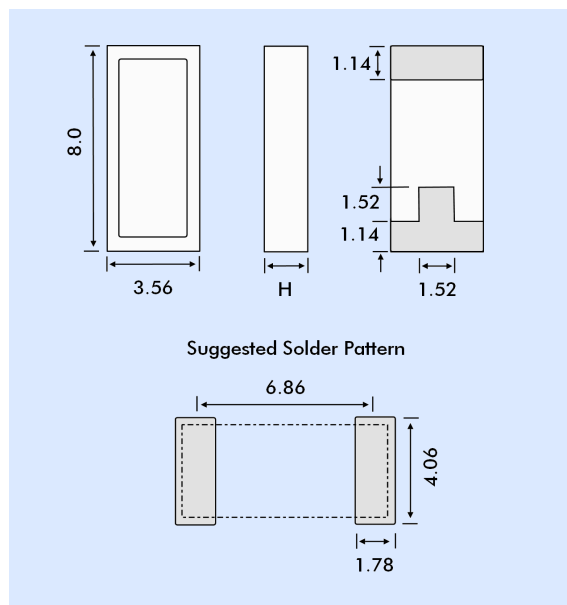
- Infusion pumps
- Monitoring equipment

Industrial, Computer and Instrumentation

- Instrumentation
- Process control
- Environmental control
- Telemetry

Military & Aerospace

- Communications
- Satellite Command and Control
- Cockpit electronics
- Smart munitions
- Timing devices (fuses)

OUTLINE & DIMENSIONS

DIMENSION 'H'

Terminations	Glass Lid	Ceramic Lid
SM1	1.65	1.78
SM2/SM4	1.70	1.83
SM3/SM5	1.78	1.90

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)

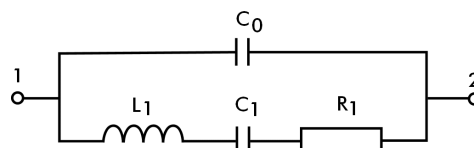
SPECIFICATION

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

Fundamental Frequency:	10.0MHz	32.0MHz	155.52MHz
Motional Resistance R (Ω):	30	25	15
Motional Capacitance C1 (ff):	5.5	6.2	4.0
Quality Factor Q (k):	100	30	30
Shunt Capacitance C0 (pF):	2.2	2.3	2.3

Calibration Tolerance ¹ :	±100ppm or tighter as required
Load Capacitance ² :	20pF for fr. <50MHz 10pF for fr. >50MHz
Drive Level:	500μW max. for fr. <50MHz 200μW max. for fr. <50MHz
Temperature Stability ³	
Commercial -10 ~ +60°C:	±50ppm to ±10ppm
Industrial -40 to +85°C:	±100ppm to ±20ppm
Military -55 to +125°C:	±100ppm to ±30ppm
Ageing, first year ⁴ :	5ppm max. (±1ppm available)
Shock, survival ⁵ :	3,000g, 0.3ms, ½ sine
Vibration, survival ⁶ :	20g, 10~2000Hz swept sine
Operating Temperature Range	
Commercial:	-10° to +70°C
Industrial:	-40° to +85°C
Military:	-55 to +125°C
Storage Temperature Range:	-55° to +125°C
Maximum Process Temperature:	+260°C for 20 seconds

CRYSTAL EQUIVALENT CIRCUIT



R1 Motional Resistance L1 Motional Inductance
C1 Motional Capacitance C0 Shunt Capacitance

PACKAGING OPTIONS

CX1SM crystals are available either tray packed (<250pcs) or tape and reel (>250 pieces).
16mm tape, 178mm or 330mm reels (EIA 418).

1. Other tolerances available, contact Euroquartz sales.
2. Unless specified otherwise.
3. Does not include calibration tolerance. The characteristics of the frequency stability over temperature follow that of the AT thickness-shear mode.
4. 5ppm max. for frequencies below 40MHz. For tighter tolerances and higher frequencies contact Euroquartz sales.
5. Higher shock version available. See CX1HGSM
6. Per MIL-STD-202G, Method 204D, Condition D. Random vibration testing also available.

HOW TO ORDER CX1SM AT CRYSTALS

CX1 - S - C - SM1 - 32.0M 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

May be specified as - / - / 200 / I
where '200' indicates an overall total frequency tolerance in ppm.