

Miniature AT-Cut Quartz Crystal
8MHz to 160MHz
FEATURES

- Low profile, hermetically sealed ceramic package
- Excellent ageing characteristics
- High shock resistance
- Full military testing available
- Available with glass or ceramic lid
- Custom designs available


DESCRIPTION

CX-1-03 AT crystals are designed in a rugged, ceramic package. Due to its robust design this crystal has gained wide acceptance in the industry.

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):	50	20	50
Motional Capacitance C1 (fF):	5.5	7.8	0.5
Quality Factor Q (k):	80	306	41
Shunt Capacitance C0 (pF):	2.2	2.6	3.2

Calibration Tolerance¹:
 A = $\pm 0.01\%$ (± 100 ppm)
 B = $\pm 0.1\%$
 C = $\pm 1\%$

Load Capacitance: 20pF (Unless specified by customer)

Drive Level: 500 μ W maximum

Temperature Stability²

Commercial -10 ~ +60°C: from ± 10 ppm

Industrial -40 to +85°C: from ± 20 ppm

Military -55 to +125°C: from ± 30 ppm

Ageing, first year: 5ppm maximum

Shock, survival³: 3,000g, 0.3ms, 1/2 sine

Vibration, survival: 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

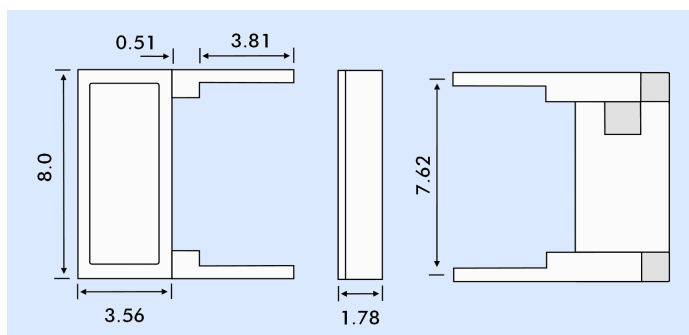
Maximum Process Temperature: See package handling notes

Note: The characteristics of the frequency temperature stability follow that of AT-Cut Thickness Shear mode.

1. Tighter tolerances available.

2. Does not include calibration tolerance.

3. Higher shock version

OUTLINE & DIMENSIONS

STANDARD FREQUENCIES

10.0, 11.0592, 12.0, 16.0, 19.66080, 20.0, 24.0, 24.576, 30.0, 32.0, 35.2512, 36.0 and 40.0MHz

PACKAGE HANDLING

The CX crystal is hermetically sealed in a ceramic package. Normal handling and soldering precautions for small, low thermal mass parts are adequate when installing or testing CX crystals. CX crystals may be wave soldered with proper precaution taken to avoid desoldering the leads. A slow machine rate or too high a pre-heat temperature or solder bath temperature may damage the crystals. **Lead to package solder interface temperature should not exceed 175°C, glass lid to package seal rim temperature should not exceed 210°C.** If the seal rim reaches temperatures above the maximum specified, the package may lose its hermeticity. Loss of hermeticity results in a frequency decrease and motional resistance increase.

HOW TO ORDER CX-1-03 CRYSTALS

CX-1														
S		OT		C		-03		32M,		A	/	25	/	I
'S' if special, custom design. Otherwise leave blank		OT = 3rd Overtone Mode. Blank = Fundamental Mode		Blank = glass lid C = ceramic lid		Side Leads		Frequency K = kHz M = MHz		Calibration Tolerance @25°C A B C		Frequency Stability over temp. (in ppm)		Temp. Range C = -10° ~ +70°C I = -40° ~ +85°C M = -55° ~ +125°C S = Customer specified