

FEATURES

- Ultra-miniature, low profile (>1.2mm) ceramic package
- Available with glass or ceramic lid
- Excellent ageing characteristics
- High shock and vibration resistance
- Full military testing available

DESCRIPTION

CX4SM AT crystals provide a reliable and rugged source of high frequencies in an ultra-miniature package.

SPECIFICATION

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

Standard Calibration Tolerance ¹ :	±100ppm, or tighter as required
Load Capacitance:	10pF
Drive Level:	200µW max. for Fr. <50MHz 100µW max. for Fr. >50MHz

Frequency Stability ^{1,3}	
-10° to +70°C:	±50ppm to ±10ppm
-40° to +85°C:	±100ppm to ±20ppm
-55° to +125°C:	±100ppm to ±30ppm

Ageing First Year ³ :	±5ppm max. (Better than ±1ppm available)
----------------------------------	--

Shock, Survival ⁴ :	5000g, 0.3ms, ½ sine
Vibration, Survival ⁵ :	10g 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

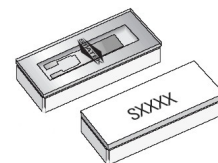
1. Other tolerances available; contact Euroquartz sales.
2. Does not include calibration tolerance. Frequency stability characteristics follow that of the AT thickness-shear mode.
3. ±5ppm max. for frequencies below 40MHz. For tighter tolerances contact Euroquartz sales.
4. Higher shock verion available.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

FREQUENCY-DEPENDENT SPECIFICATION TABLE

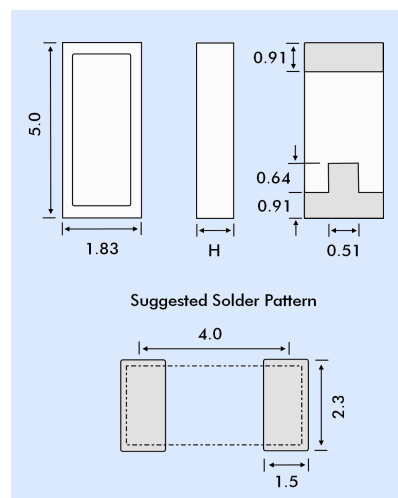
Fundamental Frequency	14.745MHz	16MHz	20MHz	32MHz	40MHz	80MHz	160MHz	200MHz
Motional Resistance R1 (Ω):	60	75	50	30	30	30	30	40
Motional Capacitance C1 (Ff):	1.4	1.5	1.4	2.5	1.5	1.8	2.5	2.0
Quality Factor Q (k):	120	90	110	70	90	40	20	15
Shunt Capacitance (C0 (pF):	0.8	0.9	0.9	1.1	1.0	1.0	1.5	1.5

HOW TO ORDER CX4SM AT CRYSTALS

CX4	- 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 temperature (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	1.14	1.27
SM2	1.17	1.30
SM3	1.22	1.35
SM4	1.17	1.30
SM5	1.22	1.35

PACKAGING OPTIONS

CX4SM AT 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)