

FEATURES

- Designed for surface mount applications, including infrared, vapour phase or epoxy mount techniques
- Hermetically sealed ceramic package
- Excellent ageing characteristics
- Available with glass or ceramic lid
- High shock and vibration resistance
- Custom designs available
- Full Military testing available



DESCRIPTION

CX2SM AT crystals in leadless ceramic packages are designed for surface mounting on PCB or hybrid substrates. The small footprint, low profile crystal is ideal for a wide range of commercial, industrial, medical and defence/aerospace applications.

SPECIFICATION

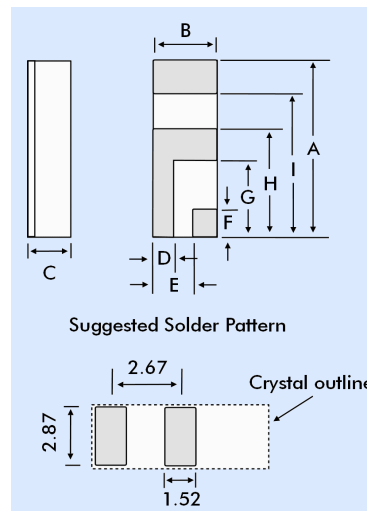
Specifications stated are typical at 25°C unless otherwise indicated. Specifications may change without notice.

Fundamental Frequency:	10.0MHz	32.0MHz	155.52MHz
Motional Resistance R (Ω):	60	25	10
Motional Capacitance C1 (fF):	2.8	6.2	4.0
Quality Factor Q (k):	95	30	30
Shunt Capacitance C0 (pF):	1.4	2.3	2.3

Calibration Tolerance ¹ :	± 100 ppm or tighter as required
Load Capacitance ² :	20pF for fr. <50MHz 10pF for fr. >50MHz
Drive Level:	500 μ W max. for fr. <50MHz 200 μ W max. for fr. <50MHz
Temperature Stability ³	
Commercial -10 ~ +60°C:	± 50 ppm to ± 10 ppm
Industrial -40 to +85°C:	± 100 ppm to ± 20 ppm
Military -55 to +125°C:	± 100 ppm to ± 30 ppm
Ageing, first year ⁴ :	5ppm max. Better than ± 1 ppm is available
Shock, survival ⁵ :	3,000g, 0.3ms, 1/2 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

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.

OUTLINE & DIMENSIONS



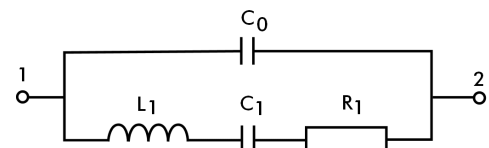
Dim.	Typ.	Max.
A	6.60	6.99
B	2.39	2.74
C	see below	
D	0.89	1.14
E	1.50	1.75
F	1.27	1.52
G	2.67	2.92
H	3.94	4.19
I	5.33	5.59

Dim. C	Glass Lid	Ceramic Lid
SM1	1.65	1.91
SM2	1.70	1.96
SM3	1.78	2.03
SM4	1.70	1.96
SM5	1.78	2.03

PACKAGING OPTIONS

CX2SM AT crystals are available either tray packed (<250pcs) or tape and reel (>250 pieces).
16mm tape, 178mm or 330mm reels (EIA 418).

CRYSTAL EQUIVALENT CIRCUIT



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

HOW TO ORDER CX2SM AT CRYSTALS

CX2 - 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