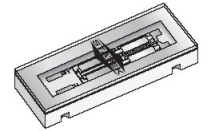


### FEATURES

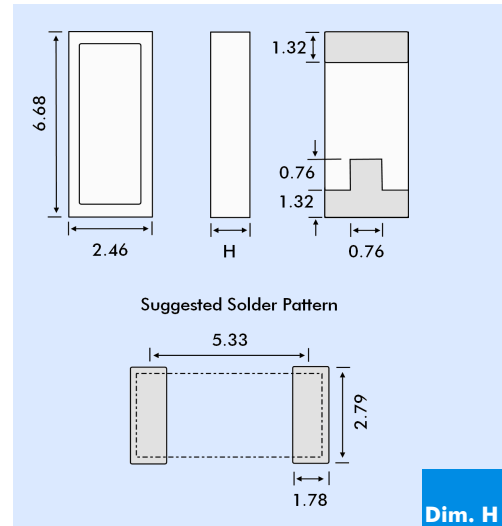
- Very high shock and vibration survival
- Designed for surface mount applications, including infrared, vapour phase or epoxy mount techniques
- Hermetically sealed ceramic package
- Excellent ageing characteristics
- Available with glass or ceramic lid
- Custom designs available
- Full Military testing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



### DESCRIPTION

CX3HGSM AT crystals in leadless ceramic packages are designed for surface mounting on PCB or hybrid substrates. The small footprint, low profile crystal has been designed for applications requiring high shock and vibration survival.

### OUTLINE & DIMENSIONS



Dim. H	Glass Lid	Ceramic Lid
SM1	1.35	1.70
SM2	1.40	1.75
SM3	1.47	1.83
SM4	1.40	1.75
SM5	1.47	1.83

### 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 ( $\Omega$ ):	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

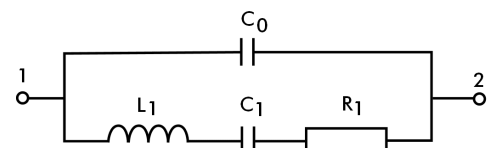
Calibration Tolerance <sup>1</sup> :	$\pm 100$ ppm or tighter as required
Load Capacitance <sup>2</sup> :	20pF for fr. <50MHz 10pF for fr. >50MHz
Drive Level:	500 $\mu$ W max. for fr. <50MHz 200 $\mu$ W max. for fr. <50MHz
Temperature Stability <sup>3</sup>	
Commercial -10 ~ +60°C:	$\pm 50$ ppm to $\pm 10$ ppm
Industrial -40 to +85°C:	$\pm 100$ ppm to $\pm 20$ ppm
Military -55 to +125°C:	$\pm 100$ ppm to $\pm 30$ ppm
Ageing, first year <sup>4</sup> :	5ppm max. Better than $\pm 1$ ppm is available
Shock, survival <sup>5</sup> :	Up to 20,000g, 0.3ms, 1/2 sine
Vibration, survival <sup>6</sup> :	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.

### PACKAGING OPTIONS

CX3HGSM 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 CX3HGSM AT CRYSTALS

**CX3 - S - HG1 - C - SM1 - 32.0M , 100 / 100 / - / I**

'S' if special, custom design. Otherwise leave blank	HG1 = 10,000g HG2 = 20,000g	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
	Blank = glass lid C = ceramic lid					