

### FEATURES

- Frequency Range 16MHz to 50MHz
- Mechanical shock survivability up to 75,000g
- Ultra-low profile and outline ceramic package
- Low acceleration sensitivity available
- Low ageing
- Full MIL testing available

### DESCRIPTION

CX11LHG crystals are high performance devices designed to survive extreme shock and high vibration environments. Low acceleration sensitivity and low ageing performance are coupled with tight calibration and temperature tolerances.

### SPECIFICATION

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

Parameters	16.0MHz	24.0MHz	32.0MHz
Frequency 1:	16.0MHz	24.0MHz	32.0MHz
Motional Resistance R1 (Ω):	85	30	25
Motional Capacitance C1 (ff):	1.5	1.6	1.9
Quality Factor Q (k):	80	150	110
Shunt Capacitance C0 (pF):	0.7	0.7	0.9

Calibration Tolerance 2: ±100 to ±30ppm  
or tighter as required

Load Capacitance: 10pF (unless specified otherwise)

Drive Level: 200µW maximum

Frequency-Temperature Stability 2,3:

Commercial: ±50ppm to ±10ppm

Industrial: ±50ppm to ±20ppm

Military: ±100ppm to ±30ppm

Ageing: ±5ppm maximum (first year)

Shock, survival: <75,000g, 0.3ms, ½ sinewave

Vibration, survival 4: 20g, 10~2000Hz swept sinewave

Operating Temperature Range: -10°C to +70°C (Commercial)  
-40°C to +85°C (Industrial)  
-55° to +125°C (Military)

Storage Temperature Range: -55°C to +125°C

Maximum Process Temperature: 260°C for 20 seconds maximum

1. For frequencies above 50MHz contact Euroquartz
2. Other tolerances are available.
3. Does not include calibration tolerance. The characteristics of the frequency stability over temperature follow that of the AT thickness-shear mode.
4. Per MIL-STD-202G, Method 204D, Condition D. Random vibration testing also available.
5. Crystal designed and manufactured in USA by Statek Inc.

### PACKAGING OPTIONS

CX11LHG crystals are available either tray packed (<250pcs) or tape and reel (>250 pieces).  
12mm tape, 178mm or 330mm reels (EIA 418).

### HOW TO ORDER CX11LHG CRYSTALS

**CX11L - S - HG3 - C - SM1 - 24.0M, 100 / 100 / - / I**

Blank = Standard  
S = Special or custom

Blank = 5000g  
HG1 = 10000g  
HG2 = 20000g  
HG3 = 30000g  
HG4 = 50000g  
HG5 = 75000g

C = Ceramic Lid

Terminations  
SM1 = Gold plated \*  
SM2 = Solder plated  
SM3 = Solder dipped  
SM4 = Solder plated \*  
SM5 = Solder dipped \*  
\* = Lead free

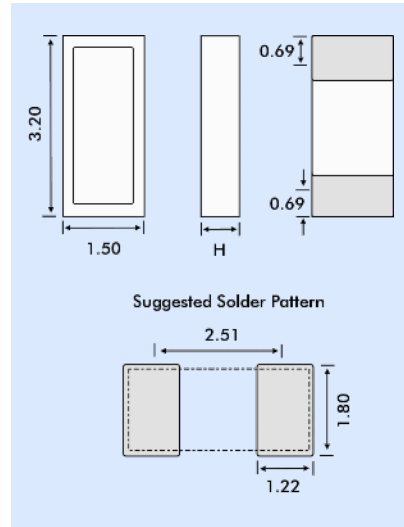
Frequency  
M = MHz

Calibration  
Tolerance  
@ 25°C  
(in ppm)

Temp. Range  
C = Commercial  
I = Industrial  
M = Military  
S = Customer specified

Frequency Stability over  
Temp. Range (-/ ppm)

### OUTLINE & DIMENSIONS

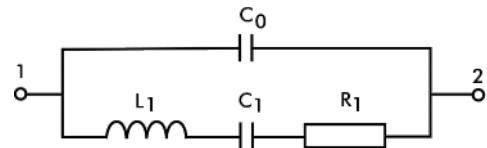


Dimension H	Typical	Maximum
SM1	0.51	0.59
SM2/SM4	0.53	0.60
SM3/SM5	0.58	0.63

### 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)

### CRYSTAL EQUIVALENT CIRCUIT



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