

FEATURES

- Frequency Range 80kHz to 160kHz
- High shock resistance
- Ultra-small ceramic package
- Low ageing
- Designed for low power applications
- Full MIL testing available

DESCRIPTION

CX7VSM crystals are leadless devices designed for surface mounting on PCBs or hybrid substrates. The crystals are intended for use in Pierce (single inverter) oscillator circuits.

SPECIFICATION

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

Parameters	Fundamental	
Frequency (kHz):	100.0	153.6
Motional Resistance R1 (kΩ):	19	11
Motional Capacitance C1 (ff):	1.0	0.8
Quality Factor Q (k):	86	110
Load Capacitance (pF):	5	5
Turning Point (°C):	10	5

Standard Calibration Tolerance for 32.768kHz (3)			
Glass Lid:	A = ±50ppm (0.003%)	B = ±100ppm (0.01%)	C = ±1000ppm (0.1%)
Ceramic Lid:	A = ±100ppm (0.01%)	B = ±1000ppm (0.1%)	C = ±10000ppm (1.0%)

Drive Level: 0.5μW max.

Temperature Coefficient (k): -0.035ppm/°C²

Ageing, first year: 5ppm max.

Note: Frequency f at temperature T is related to frequency Fo at turning point temperature To by:

$$\frac{f-f_0}{f_0} = k(T-T_0)^2$$

Shock, survival: 5000g, 0.3ms, ½ sine

Vibration, survival: 20g rms, 10~2000Hz random

Operating Temperature Range

Commercial: -10° to +70°C

Industrial: -40° to +85°C

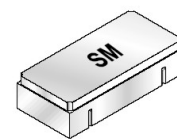
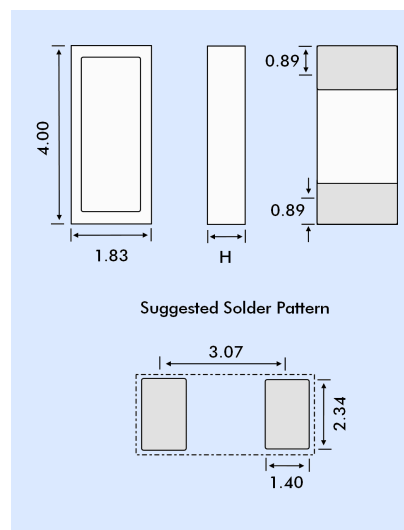
Military: -55 to +125°C

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

Maximum Process Temperature: +260°C for 20 seconds

1. Other load capacitance values are available.
2. Other temperature available.
3. Tighter tolerances available.

OUTLINE & DIMENSIONS

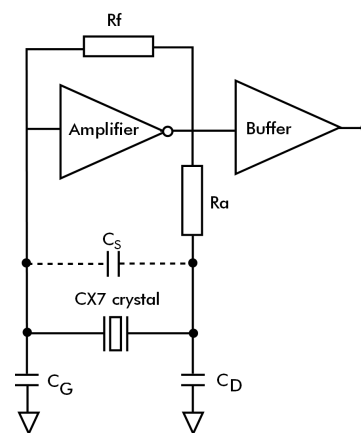


Dim. H	Glass Lid	Ceramic Lid
SM1	1.14	1.27
SM2	1.17	1.30
SM3	1.22	1.35

TERMINATIONS - PLATING

Designation	Termination
SM1	Gold Plated
SM2	Nickel, Solder Plated
SM3	Nickel, Solder Plated and Solder Dipped

Conventional CMOS Pierce Oscillator Circuit



PACKAGING OPTIONS

CX7VSM crystals are available either tray packed (<250pcs) or tape and reel (>250 pieces).
16mm tape, 178mm or 330mm reels (EIA 418).

HOW TO ORDER CX7VSM CRYSTALS

CX7V	- S	- C	- SM1	- 100.0K,	A	/ 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	Frequency K = kHz	Calibration Tolerance* A B C	Temp. Range C = -10° ~ +70°C I = -40° ~ +85°C M = -55° ~ +125°C S = Customer specified

* If other calibration required enter in ppm.