



# CX7SM CRYSTAL

14 MHz to 250 MHz

Ultra-Miniature, Low Profile  
AT-Cut Surface Mount Crystal

## DESCRIPTION

STATEK's ultra-miniature, low profile CX7SM AT-cut crystals in leadless ceramic packages are designed for surface mounting on printed circuit boards or hybrid circuits. These crystals are low profile and have a very small land pattern. Maximum process temperature should not exceed 260°C.

## FEATURES

- Designed for surface mount applications using infrared, vapor phase, wave solder or epoxy mount techniques
- Low profile (less than 1.2mm) hermetically sealed ceramic package
- Excellent aging characteristics
- Available with glass or ceramic lid
- High shock and vibration resistance
- Custom designs available
- Full military testing available
- Designed and manufactured in the USA

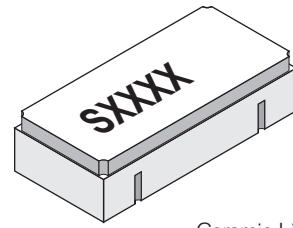
## APPLICATIONS

Industrial, Computer & Communications

- General purpose clock oscillator
- PCMCIA
- Fax, Modem and LAN
- Smart card
- PDA and notebook computers
- Handheld instrumentation
- Cellular
- PCS

Military & Aerospace

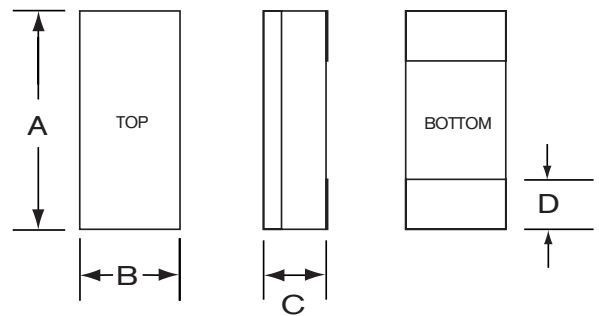
- Airborne hybrid computer
- Military high speed modem
- MCM



Ceramic Lid Shown

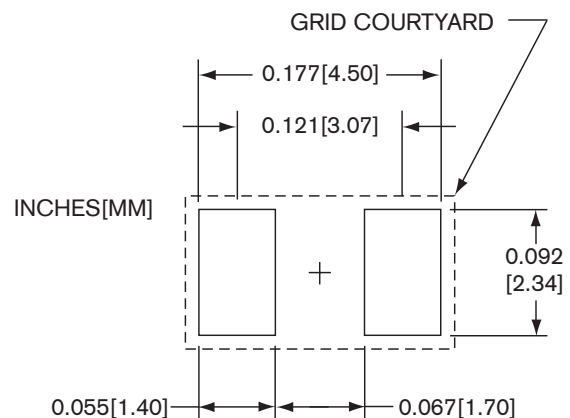
□ actual size  
□ side view

## PACKAGE DIMENSIONS



DIM	TYP.		MAX.	
	INCHES	mm	INCHES	mm
A	0.157	4.00	0.162	4.11
B	0.072	1.83	0.085	2.16
C	-	-	see below	
D	0.035	0.89	0.045	1.14
DIM "C"	GLASS LID		CERAMIC LID	
MAX	INCHES	mm	INCHES	mm
SM1	0.045	1.14	0.050	1.27
SM2	0.046	1.17	0.051	1.30
SM3	0.048	1.22	0.053	1.35

## SUGGESTED LAND PATTERN



10155 - Rev B



## SPECIFICATIONS

Specifications are typical at 25°C unless otherwise noted.  
Specifications are subject to change without notice.

	49 MHz
Motional Resistance $R_1$ (k $\Omega$ )	14
Motional Capacitance $C_1$ (fF)	2.4
Quality Factor Q (k)	100
Shunt Capacitance $C_0$ (pF)	0.8
Calibration Tol. Range*	$\pm 100$ ppm to $\pm 10000$ ppm
Load Capacitance	10pF (unless specified by customer)
Drive Level	200 $\mu$ W MAX.
Frequency Stability Over Temperature**	$\pm 10$ ppm for (Commercial) $\pm 35$ ppm for (Industrial) $\pm 50$ ppm for (Military)
Aging, first year	5 ppm MAX.
Shock, survival***	5,000 G peak 0.3 ms, 1/2 sine
Vibration, survival	20 G RMS, 10-2,000 Hz random
Standard Operating Temperature Ranges	-10°C to +70°C (Commercial) -40°C to +85°C (Industrial) -55°C to +125°C (Military)
Storage Temperature	-55°C to +125°C
Max Process Temperature	260°C for 20 sec.

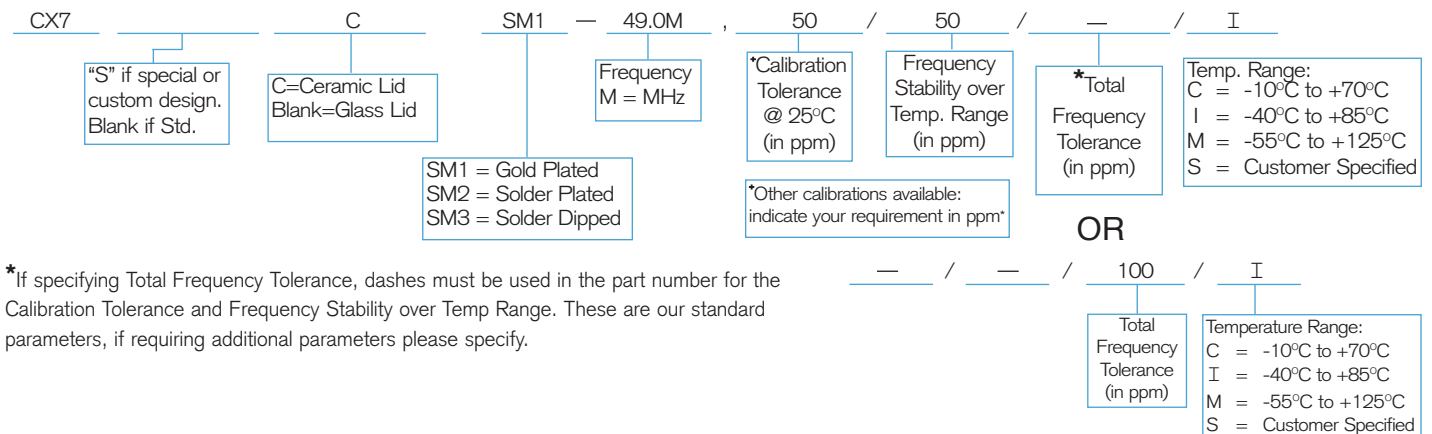
Note: The characteristics of the frequency stability over temperature follow that of the AT-Cut thickness-shear mode.

\* Tighter tolerances available as low as  $\pm 5$  ppm

\*\* Does not include calibration tolerance

\*\*\* Higher shock version available

## HOW TO ORDER CX7SM CRYSTALS



## TERMINATIONS

Designation	Termination
SM1	Gold Plated
SM2	Solder Plated
SM3	Solder Dipped

## PACKAGING OPTIONS

CX7SM	-Tray Pack
	-16mm tape, 7" or 13" reels
	(Reference tape and reel data sheet 10109)

## EQUIVALENT CIRCUIT

