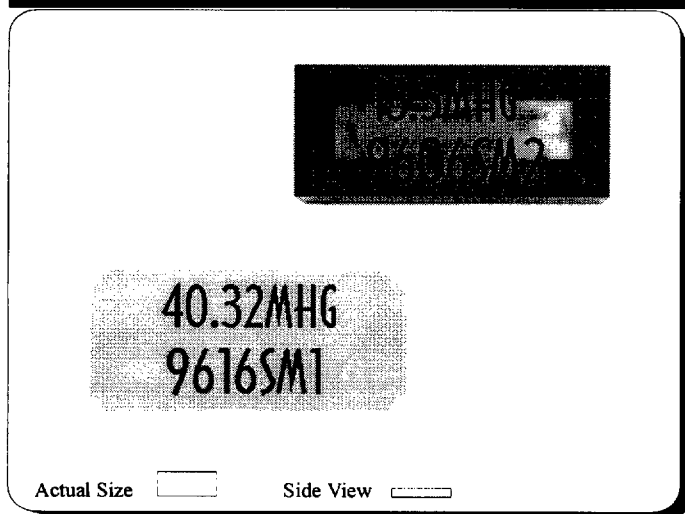




CX-1HG-SM CRYSTAL

8 MHz to 160 MHz

HIGH SHOCK MINIATURE AT-CUT SURFACE MOUNT CRYSTAL



DESCRIPTION

Statek's miniature AT-cut crystals in leadless ceramic packages are designed for surface mount on printed circuit boards or hybrid circuits. These crystals are designed for applications requiring exceptional shock and vibration survival. 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 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

APPLICATIONS

INDUSTRIAL, COMPUTER & COMMUNICATIONS

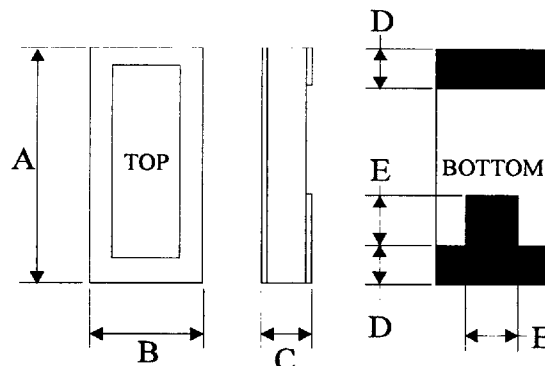
- ☐ General purpose clock oscillator
- ☐ PCMCIA (FAX, Modem and LAN)
- ☐ Smart Card
- ☐ PDA and notebook computers

MILITARY & AEROSPACE

- ☐ Airborne hybrid computer
- ☐ Military high speed modem
- ☐ MCM
- ☐ Smart fuze

Fundamental Mode: 8 MHz - 70 MHz
Third Overtone Mode: 48 MHz - 160 MHz

PACKAGE DIMENSIONS



DIM	TYP.		MAX.	
	INCHES	mm	INCHES	mm
A	.315	8.00	.335	8.51
B	.140	3.56	.160	4.06
C	----	----	SEE BELOW	
D	.045	1.14		
E	.060	1.52		

DIM "C"	GLASS LID		CERAMIC LID	
MAX.	INCHES	mm	INCHES	mm
SM1	.065	1.65	.070	1.78
SM2	.067	1.70	.072	1.83
SM3	.070	1.78	.075	1.91

STATEK CORPORATION

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SPECIFICATIONS

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

	10 MHz	32 MHz	155.52 MHz
Motional Resistance R_1 (Ω)	50	20	50
Motional Capacitance C_1 (fF)	5.5	7.8	0.5
Quality Factor Q (k)	80	36	41
Shunt Capacitance C_0 (pF)	2.2	2.6	3.2
Calibration Tolerance*	A $\pm 0.01\%$ (± 100 ppm) B $\pm 0.1\%$ (± 1000 ppm) C $\pm 1.0\%$ ($\pm 10,000$ ppm)		

Load Capacitance 20 pF (Unless specified by customer)

Drive Level 500 μ W MAX.

Frequency-Temperature Stability**

-20°C to +70°C	from ± 10 ppm
-40°C to +85°C	from ± 20 ppm
-55°C to +125°C	from ± 30 ppm

Aging, first year 5ppm MAX.

Shock, survival 10,000g peak .2msec., $\frac{1}{2}$ sine

Vibration, survival 50g rms 10-2,000 Hz random

Operating Temperature Range

-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

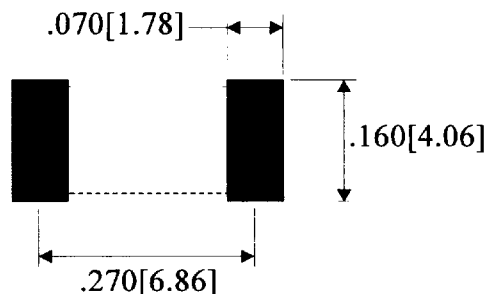
Maximum Process Temperature 260°C for 20 sec.

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

* Tighter tolerances available as low as ± 5 ppm

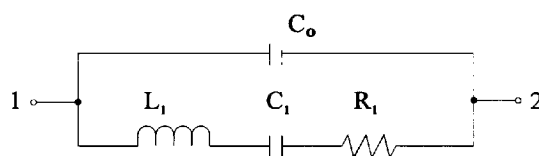
** Does not include calibration tolerance

SUGGESTED LAND PATTERN



INCHES[mm]

EQUIVALENT CIRCUIT



R_1 Motional Resistance L_1 Motional Inductance
 C_1 Motional Capacitance C_0 Shunt Capacitance

TERMINATIONS

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

PACKAGING

CX-1 -16mm Tape, 7" or 13" Reels,
Per EIA 481A (See data sheet 10109)
-Tray Pack
-Bulk Pack

HOW TO ORDER CX-1HG-SM SURFACE MOUNT CRYSTALS

CX-1	HG	SM1	32 MHz	(25ppm / 25ppm / 50ppm / I)
"S" if special or custom design. Blank if Std.	O.T.=3 RD O.T. Mode Blank=Fundamental Mode	C=Ceramic Lid Blank=Glass Lid	SM1 SM2 SM3	Frequency
				*Calibration Tolerance @25°C (A) (B) (C)
				Frequency Stability over Temp. Range
				Total Frequency Tolerance: Stability @ Room Temperature
				Temp. Range: C = Commercial I = Industrial M = Military

*Other calibration fill in ppm

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