



SELECTION GUIDE

The widest choice of quartz crystals, oscillators and sensors

Visit our website www.statek.com

THE COMPANY

In 1970, Statek Corporation was the first to use semiconductor technology such as photolithography, chemical etching and micromachining to manufacture quartz resonators in wafer form. Today, Statek remains at the forefront of innovation in the design, development and manufacturing of highly reliable, ultra-miniature quartz-based frequency control products.

Innovative in-house design, production and testing capabilities make possible not only rapid new product development and validation, but also continuous improvement of key product features such as low acceleration sensitivity, high shock, tight calibration tolerance, low aging, radiation resistance, and highly stable frequencies at increasingly higher operating temperatures.

KEY ATTRIBUTES

- Ultra miniature products
- Highest shock survivability in the industry
- High stability and precision
- Proven reliability
- Excellent long-term aging
- Full military testing
- Widest selection of packaging options
- Prompt specialized technical support
- Full lot traceability
- Designed and manufactured in the USA

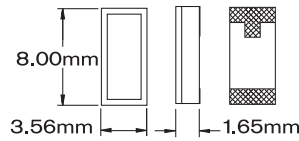
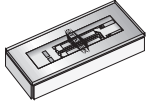


EXAMPLES OF APPLICATIONS

Medical	Military	Industrial
■ Cardiac rhythm management	■ Smart munitions	■ Oil and gas exploration
■ Neurostimulators	■ High shock embedded electronics	■ Directional drilling
■ RF telemetry	■ Guidance and navigation	■ Ruggedized wireless communications
■ Infusion pumps	■ Communications	■ Force, temperature, pressure sensors
■ Cochlear implants	■ Sensors (IMU)	■ Inventory control
■ Orthopedic implants	■ Avionics	■ Transport safety
■ Retinal implants	■ Military medical devices	■ Public transport electronics
■ Glaucoma implants	■ Space / Satellites	■ In-flight entertainment systems
■ Patient monitoring equipment	■ Unmanned Aerial Vehicles (UAV)	■ Aircraft engines

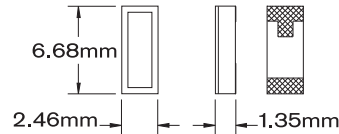
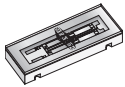
SURFACE MOUNT CRYSTALS – 10 kHz to 250 MHz

CX1



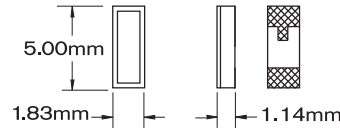
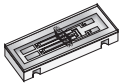
HG = HIGH SHOCK, HT = HIGH TEMPERATURE, SW = SWEPT QUARTZ

CX3



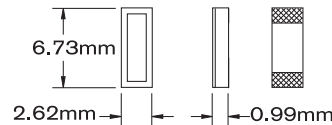
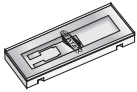
HG = HIGH SHOCK

CX4

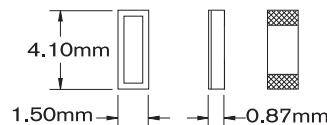
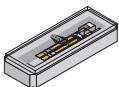


HG = HIGH SHOCK, HT = HIGH TEMPERATURE
HIGHEST SHOCK SURVIVABILITY

CX6

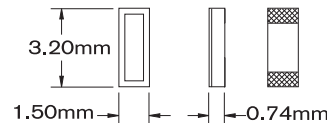
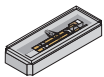


CX9



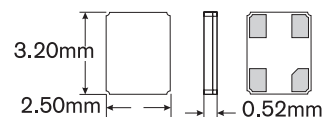
HT = HIGH TEMPERATURE

CX11/CX11L/CX11LHG




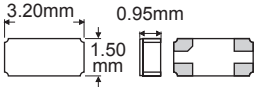

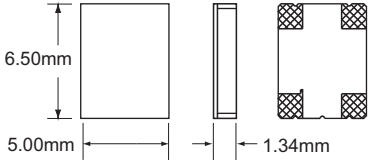

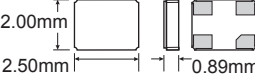

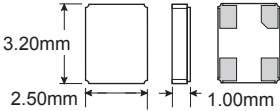

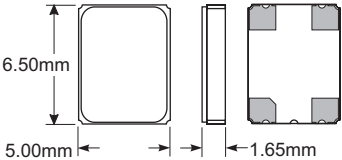
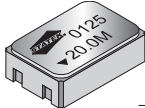
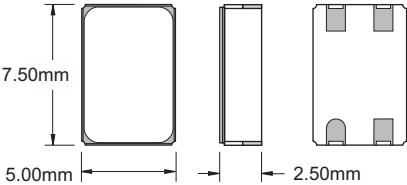
L = Low-Profile Package Version, 0.51mm typical height
HG = HIGH SHOCK

CX14




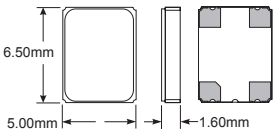
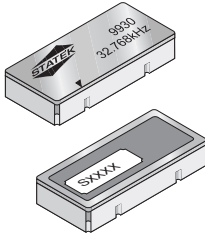
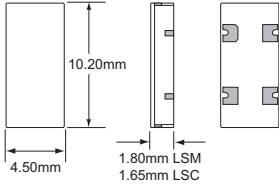

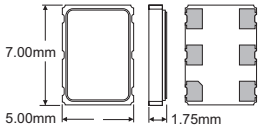
Frequency Range	Reference Data Sheets
10 kHz to 600 kHz (Tuning Fork)	10121 CX1VSM TF 10122 CX1HSM TF 10183 CX1VHT 10129 CX1SM EXT 10185 CX1HT EXT
530 kHz to 2.1 MHz (Extensional)	
6 MHz to 250 MHz (AT Fundamental)	10107 CX1SM AT 10108 CX1HGSM AT 10184 CX1HT AT 10199 SWCX1SM AT
18 kHz to 600 kHz (Tuning Fork)	10104 CX3VSM TF 10146 CX3HSM TF 10123 CX3SM EXT
800 kHz to 1.35 MHz (Extensional)	
9.6 MHz to 250 MHz (AT Fundamental)	10120 CX3SM AT 10182 CX3HGSM AT
30 kHz to 250 kHz (Tuning Fork)	10103 CX4VSM TF 10183 CX4VHT TF 10161 CX4 EXT 10185 CX4HT EXT
600 kHz to 2.5 MHz (Extensional)	
14 MHz to 250 MHz (AT Fundamental)	10150 CX4SM AT 10184 CX4HT AT 10165 CX4HGSM AT
14 MHz to 50 MHz (High Shock)	
18 kHz to 600 kHz (Tuning Fork)	10132 CX6VSM TF
800 kHz to 1.35 MHz (Extensional)	10133 CX6SM EXT
9.6 MHz to 250 MHz (AT Fundamental)	10117 CX6SM AT
32 kHz to 250 kHz (Tuning Fork)	10157 CX9VSM TF
32 kHz to 160 kHz (Tuning Fork / High Temp)	10183 CX9VHT TF
14 MHz to 250 MHz (AT Fundamental)	10158 CX9SM AT 10187 CX9 Telemetry
32 kHz to 180 kHz (Tuning Fork)	10174 CX11SM TF
16 MHz to 250 MHz (AT Fundamental)	10179 CX11SM AT 10188 CX11L Telemetry
16 MHz to 50 MHz (AT Fundamental / High Shock)	10193 CX11LHG
12 MHz to 50 MHz (AT Fundamental)	10173 CX14SM AT

SURFACE MOUNT OSCILLATORS **30 kHz to 200 MHz**

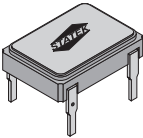
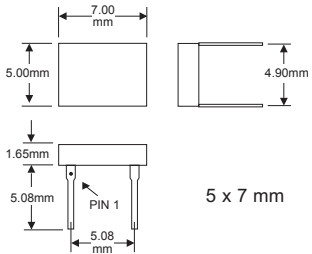
Model	Package Configuration	Features	Frequency Range	Reference Data Sheets
CXOL  				
CXOL	4-pad Ceramic SMD	1.2V to 5.0V operation CMOS/TTL compatible Enable/Tri-state output	32 kHz to 100 kHz	10205
CXOMK  				
CXOMK CXOMKHG High Shock	4-pad Ceramic SMD	0.9V to 5V operation CMOS/TTL compatible Enable/Tri-state output	200 kHz to 200 MHz	10210
CXOMKHT High Temp	4-pad Ceramic SMD	3.3V or 5V operation CMOS/TTL compatible Enable/Tri-state output	200 kHz to 50 MHz	10180
CXOMKHT High Temp Fast Start-up	4-pad Ceramic SMD	3.3V operation CMOS/TTL compatible Enable/Tri-state output	32.768 kHz	10201
CXOQ  				
CXOQ/ CXOQHG High Shock	4-pad Ceramic SMD	1.8V to 3.3V operation CMOS/TTL compatible Enable/Tri-state output	400 kHz to 100 MHz	10190
CXOX  				
CXOX/ CXOXHG High Shock	4-pad Ceramic SMD	1.8V to 5V operation CMOS/TTL compatible Enable/Tri-state output	1 MHz to 160 MHz	10168
CXOXHT High Temp	4-pad Ceramic SMD	3.3V or 5V operation CMOS/TTL compatible Enable output	1 MHz to 50 MHz	10180
Fast Start Up			32.768 kHz	10201
HFXO  				
HFXO High Precision High Shock	4-pad Ceramic SMD	0.9V to 5V operation CMOS/TTL compatible hybrid circuit Shock survivability of 75,000 g Tight frequency tolerance	220 kHz to 100 MHz	10189
HGXO  				
HGXO High Shock	4-pad Ceramic SMD	1.8V to 5V operation CMOS/TTL compatible Extreme high shock survivability up to 100,000 g. Highest accuracy and stability	460 kHz to 50 MHz	10156
HGXOHT High Temp				10208 (3.3V and 5.0V)
Fast Start Up and High Temp			32.768 kHz	10209
HIGHEST SHOCK SURVIVABILITY				

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SURFACE MOUNT OSCILLATORS 30 kHz to 200 MHz (continued)

LFXO			LFXO Fast Start Up	4-pad Ceramic SMD	1.8V to 5V operation CMOS/TTL compatible High shock resistance Tight frequency-temperature stability	32.768 kHz	10191
		LFXOTF Low Power					10195
LSM/LSC			LSM	4-pad Ceramic SMD	3.3V or 5V operation CMOS compatible Tri-state output (optional) Lowest current Highest accuracy and stability	30 kHz to 200 kHz 700 kHz to 2.1 MHz	10151 10154
		LSC	4-pad Ceramic SMD	3.3V or 5V operation CMOS compatible Tri-state output (optional) Lowest current		30 kHz to 200 kHz	10153
VCXO			VCXO	6-pad Ceramic SMD	3.3V operation CMOS/TTL compatible High frequency	16.384 MHz to 130 MHz	10197
							

LEADED OSCILLATORS 320 kHz to 50 MHz

LHGAT/LHTAT		Model	Package Configuration	Features	Frequency Range	Reference Data Sheets
		LHGAT High Shock	4-Pin Ceramic (outward bent leads available)	3.3V operation CMOS/TTL compatible Enable/Tri-state output	320 kHz to 50 MHz	10211
		LHTAT High Temperature				10204

Packaging options for shipments of surface mount crystals, oscillators and sensors

Tray Pack
Tape and Reel

Packaging options for shipments of thru-hole crystals, oscillators and sensors

Tray Pack
Tube

Surface mount (SM) package termination guide

Designation	Termination	Maximum Process Temperature
SM1	Gold Plated (Pb Free)	260°C for 20 sec.
SM2	Solder Plated	260°C for 20 sec.
SM3	Solder Dipped	260°C for 20 sec.
SM4	Solder Plated (Pb Free)	260°C for 20 sec.
SM5	Solder Dipped (Pb Free)	260°C for 20 sec.


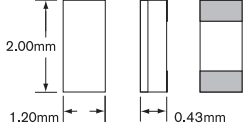
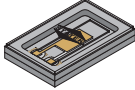
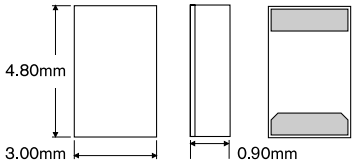

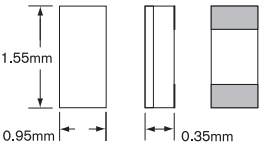
ORDERING OPTIONS FOR STATEK QUARTZ CRYSTAL OSCILLATORS

e.g. CXOMK	4	S	T*	SM3	-	32.0M	50	/	50	/	-	/	I
Model	Supply Voltage 1 = 1.8 V 2 = 2.5 V 3 = 3.0 V 4 = 3.3 V 5 = 5.0 V	S = special or custom design Blank = Std.	E = Enable T = Tri-State N = Neither	Terminations Blank = SM1 Gold Plated (Pb Free) SM3 = Solder Dipped SM5 = Solder Dipped (Pb Free)	Frequency K = kHz M = MHz	Calibration Tolerance @ 25°C (in ppm)	Frequency Stability over Temp. Range (in ppm)	Temp. Range C = -10°C to +70°C I = -40°C to +85°C M = -55°C to +125°C S = Specify					
NOTE: For specific ordering requirements, call us at 714-639-7810. Please refer to the model data sheet for detail of all available parameters and options.													
Or - / - / 100 / I Total Frequency Stability over Temp. Range (in ppm)													

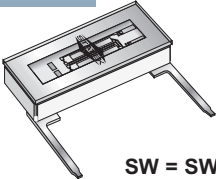
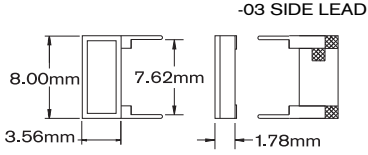
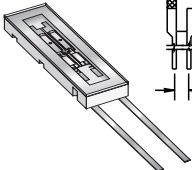
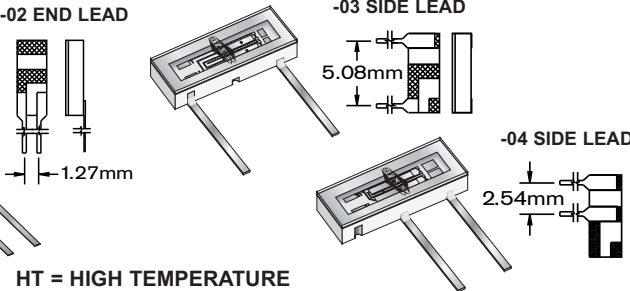

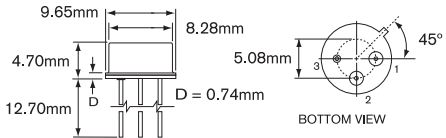
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SURFACE MOUNT CRYSTALS – 10 kHz to 250 MHz

(continued)

CX16  2.0 x 1.2 mm 	Frequency Range 24 MHz to 50 MHz (AT Fundamental)	Reference Data Sheets 10200 CX16SM AT
CX17  High Pullability for VCTCXO Applications 	Frequency Range 12 MHz to 200 MHz (AT Fundamental)	Reference Data Sheets 10206 CX17SM AT
CX18  1.55 x 0.95 mm Actual Size ■ 	Frequency Range 30 MHz to 50 MHz (AT Fundamental)	Reference Data Sheets 10207 CX18SM AT

THRU-HOLE CRYSTALS – 10 kHz to 250 MHz

CX1  SW = SWEPT QUARTZ 	Frequency Range 10 kHz to 600 kHz (Tuning Fork) 530 kHz to 2.1 MHz (Extensional) 6 MHz to 250 MHz (AT Fundamental)	Reference Data Sheets 10101 CX1V TF 10102 CX1H TF 10130 CX1 EXT 10127 CX1 AT 10202 CX1HT-06 10199 SWCX1 AT
CX2  HT = HIGH TEMPERATURE 	Frequency Range 16 kHz to 600 kHz (Tuning Fork) 760 kHz to 1.35 MHz (Extensional) 9.6 MHz to 250 MHz (AT Fundamental)	Reference Data Sheets 10138 CX2V TF 10139 CX2 EXT 10140 CX2 AT 10202 CX2HT-06 10202 CX2HT-07
SX1  HT = HIGH TEMPERATURE (up to +260°C) 	Frequency Range 30 kHz to 250 MHz	Reference Data Sheets 10194 SX1HT

ORDERING OPTIONS FOR STATEK QUARTZ CRYSTALS

e.g. CX11 Model	S S=Special or custom design. Blank if std.	C C=Ceramic Lid Blank=Glass Lid	SM1* - 32.0M, SM1 SM2 SM3 SM4 SM5 *Refer to Package Termination Guide	Frequency K=kHz M=MHz	50 Calibration Tolerance @ 25°C (in ppm)	50 Frequency Stability Over Temp. Range (in ppm)	- / I Temp. Range: C = -10°C to +70°C I = -40°C to +85°C M = -55°C to +125°C S = Specify
Designate "H" for Series, "V" for Pierce: 10 kHz to 600 kHz Tuning Fork design only. Leave blank for standard AT cut designs.	Or - / - / 100 / I Total Frequency Stability over Temp. Range (in ppm)						

NOTE: For specific ordering requirements, call us at 714-639-7810.
Please refer to the model data sheet for detail of all available parameters and options.

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TEMPERATURE SENSORS - 160 kHz to 350 kHz

	Frequency Range	Reference Data Sheets
TS1 See CX1 surface mount and leaded package configurations for typical dimensions.	160 kHz to 350 kHz (Tuning Fork)	10162
TS2 See CX2 surface mount and leaded package configurations for typical dimensions.	160 kHz to 350 kHz (Tuning Fork)	10162

LEGACY OSCILLATORS

Statek provides full support for its legacy oscillators. Please contact us.



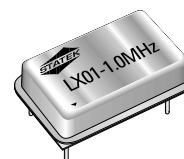
3 Pin / 6 Pin
TO-39 / TO-5



24 Pad LCC
Leadless Chip Carrier



4 Pin
Half DIP



4 Pin
Full DIP

TCXO/OCXO

PLEASE CONTACT OUR SISTER COMPANY: **GREENRAY INDUSTRIES**, TEL: 717-766-0223
FAX: 717-790-9509 / WEBSITE: WWW.GREENRAYINDUSTRIES.COM



Statek Corporation
Orange, California



Greenray Industries
Mechanicsburg, Pennsylvania

Statek Corporation maintains synergetic relationships with sister companies Greenray Industries (www.greenrayindustries.com) and Advanced Technical Ceramics Company (www.adtechceramics.com), both leaders in their respective industries. Our alliance helps us to best serve our customers with leading-edge innovation and world-class manufacturing, all from a single source.



Advanced Technical Ceramics Company
Chattanooga, Tennessee