

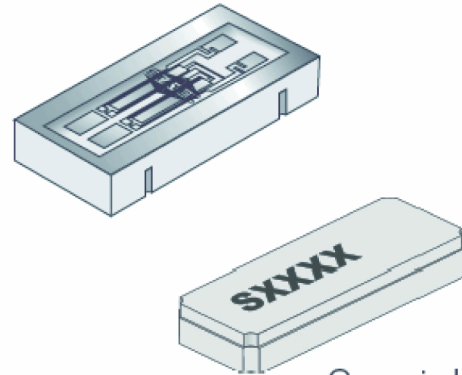
ISSUE 2; June 2019

Description

- This product is designed and manufactured by Statek Corporation in California, USA and distributed by IQD. The CX9V TF quartz crystal is available in frequencies from 32 kHz to 160 kHz. Using micro-machining processes, this surface-mountable crystal is hermetically sealed within an ultra-miniature ceramic package to ensure high stability and low ageing. Tight calibration and high frequency/temperature stability make the CX9V TF ideally suited for all low frequency applications.
- -SM1 SM1 (Gold Plated RoHS)
- -SM1-C SM1-C (Gold Plated, ceramic lid, RoHS)
- -SM2 SM2 (Solder plated, non RoHS)
- -SM2-C SM2-C (Solder plated, ceramic lid, non RoHS)
- -SM3 SM3 (Solder dipped, non RoHS)
- -SM3-C SM3-C (Solder dipped, ceramic lid, non RoHS)
- -SM4 SM4 (Solder Plated, RoHS)
- -SM4-C SM4-C (Solder Dipped, ceramic lid, RoHS)
- -SM5 SM5 (Solder Dipped, RoHS)
- -SM5-C SM5-C (Solder Dipped, ceramic lid, RoHS)
- FEATURES:
Ultra-miniature, surface mount design
Low profile
Available with glass or ceramic lid
Hermetically sealed ceramic package
High shock and vibration survival
Excellent ageing characteristics
Designed for low power applications
- APPLICATIONS:
Medical -
Defibrillator
Medical instruments
Industrial, Computer & Communications -
Smart card
Down hole instrumentation
Transponder / Animal migration
Process instrumentation
Aerospace -
Airborne hybrid
Navigational computer
Real time clock
- Please note that all data is only valid at 25°C unless otherwise stated.

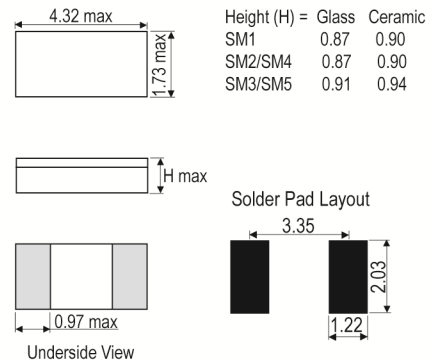
Frequency Parameters

- Frequency 32.0kHz to 160.0kHz
- Frequency Tolerance ±30.00ppm to ±10,000.00ppm
- Tolerance Condition @ 25°C
- Ageing ±5ppm max in 1st year @ 25°C
- Frequency (f) at temperature (T) deviation from frequency (fo) at turning point temperature (To): $(f - fo)/fo = k(T - To)^2$
- Note: Tighter Frequency Tolerances are available - please contact an IQD Sales Office

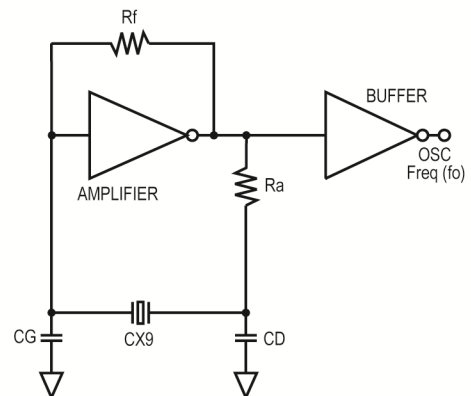


Ceramic Lid

Outline (mm) -SM1 = SM1 (Gold Plated RoHS)



Conventional CMOS Pierce Oscillator Circuit



Sales Office Contact Details:

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Electrical Parameters

- Load Capacitance (CL) 5.0pF to 9.0pF
- Shunt Capacitance (C0) 1.0pF typ
- Drive Level 0.5µW max
- Typical Motional Values:

Frequency	32.768kHz	100kHz
Motional Resistance R1 (kΩ)	60	19
Motional Capacitance C1 (fF)	2.2	1.0
Quality Factor Q (k)	37	80
Shunt Capacitance C0 (pF)	1.0	0.84
Load Capacitance (pF)	9	5
Turning Point (°C)	20	16
- Note: Other load capacitances and other turning point temperatures are available - please contact an IQD Sales Offices
- Temperature Coefficient: -0.035ppm/°C²

Operating Temperature Ranges

- -10 to 70°C
- -40 to 85°C
- -55 to 125°C

Environmental Parameters

- Shock: 5000G, 0.3ms, 1/2 sine
Note: Higher shock values also available - please contact an IQD Sales Offices
- Vibration: 20G rms, 10-2000Hz random
- Storage Temperature Range: -55 to 125°C

Manufacturing Details

- Maximum Process Temperature: 260°C for 20sec max

Ordering Information

- Frequency*
- Model*
- Lid Variant*
- Termination Variant*
- Frequency Tolerance (@ 25°C)*
- Operating Temperature Range*
- Load Capacitance*
(*minimum required)
- Lid Variants:
 - Blank = Glass
 - C = Ceramic
- Termination Variants:
 - SM1 = Gold Plated
 - SM4 = Solder Plated
 - SM5 = Solder DippedNote: non-RoHS compliant terminations SM2 and SM3 are available - please contact an IQD Sales Office
- Example
 - 100.0kHz CX9V TF-C-SM1
 - 100/-/-40 to 85C/5 FUND

Compliance

- RoHS Status (2015/863/EU) Optional
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

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Packaging Details

- Pack Style: Tray Tray pack
Pack Size: 1
- Pack Style: Reel Tape & reel in accordance with EIA-481-D
Pack Size: 1,000

Electrical Specification - maximum limiting values

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Over Tone Order	ESR
		°C	ppm		Ω
32.000kHz	160.00kHz	-10 to 70		Fundamental	- 0
		-40 to 85			- 0
		-55 to 125			- 0

*Stability Maximum values ±0ppm

This document was correct at the time of printing; please contact your local sales office for the latest version.

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