

ISSUE 7; April 2016

Description

- IQD's ultra-miniature CX4V TF Statek quartz crystals are hermetically sealed in surface mount ceramic packages and custom laser-tuned to frequencies ranging from 30 kHz to 250 kHz. This high quality tuning fork resonator is intended for use in Pierce (single inverter) oscillators with a maximum process temperature not to exceed 260°C.
- -C SM1 Ceramic Lid, Gold Plated, Pb Free
- -C SM4 Ceramic lid, Solder Plated, Pb Free
- -C SM5 Ceramic lid, Solder Dipped, Pb Free
- -SM1 Glass Lid, Gold Plated, Pb Free
- -SM4 Glass Lid, Solder Plated, Pb Free
- -SM5 Glass Lid, Solder Dipped, Pb Free
- Please note that all data is only valid at 25°C unless otherwise stated.

Frequency Parameters

- Frequency 30.0kHz to 250.0kHz
- Frequency Tolerance ±30.00ppm to ±10,000.00ppm
- Tolerance Condition @ 25°C
- Ageing ±3pm max in 1st year
- Temperature Coefficient (k): -0.035 ppm/°C²
Note: Frequency f at temperature T is related to frequency f₀ at turning point temperature T₀ by: $(f - f_0)/f_0 = k(T-T_0)^2$

Electrical Parameters

- Load Capacitance (CL) 4.0pF to 11.0pF
- Shunt Capacitance (C₀) 0.7pF typ
- Drive Level 0.5µW max
- Parameters

Frequency (kHz)	32.768	100	200
Motional Resistance R ₁ (kΩ)	50	18	2.4
Motional Capacitance C ₁ (fF)	2.3	1.07	2.2
Quality Factor Q (k)	40	85	140
Shunt Capacitance C ₀ (pF)	1.1	0.7	1.2
Load Capacitance (pF)	9	8	5
Turning Point (°C)	25	10	29

Operating Temperature Ranges

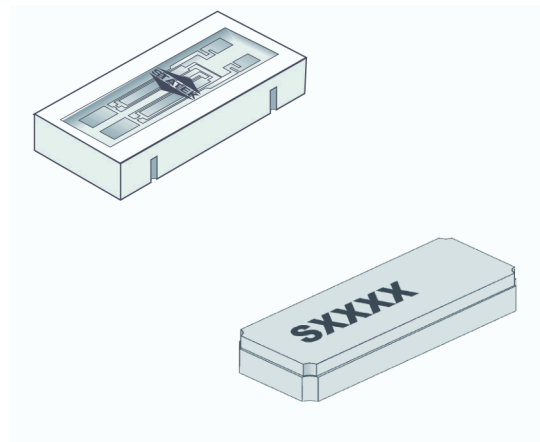
- -10 to 70°C
- -40 to 85°C
- -55 to 125°C

Environmental Parameters

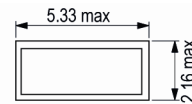
- Shock: 5000 G, 0.3 ms, 1/2 sine
- Vibration: 20 G RMS, 10-2000 Hz random
- Storage Temperature Range: -55 to 125°C

Manufacturing Details

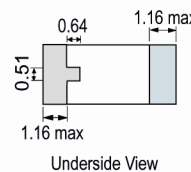
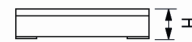
- Process Temperature: 260°C max for no more than 20 sec



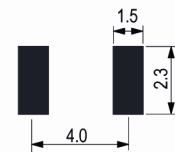
Outline (mm) -SM1 = Glass Lid, Gold Plated, Pb Free



Height (H) =	Glass Lid	Ceramic Lid
SM1	1.14	1.27
SM2	1.17	1.30
SM3	1.22	1.35
SM4	1.17	1.30
SM5	1.22	1.35



Solder Pad Layout



Sales Office Contact Details:

UK: +44 (0)1460 270200
Germany: 0800 1808 443

France: 0800 901 383
USA: +1.760.318.2824

Email: info@iqdfrequencyproducts.com
Web: www.iqdfrequencyproducts.com

Ordering Information

- Frequency*
- Model*
- Lid*
- Termination Variant*
- Frequency Tolerance (@ 25°C)*
- Operating Temperature Range*
- Load Capacitance*
- Overtone
- Example:
32.768kHz CX4V TF C SM1
100/-/-55 to 125C/9 FUND
Note: C=Ceramic Lid, Blank=Glass Lid

Compliance

- RoHS Status (2011/65/EU) Optional
- REACh Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

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
30.00kHz	250.00kHz	-10 to 70		Fundamental	-
		-40 to 85			-
		-55 to 125			-

*Stability Maximum values ±0ppm

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