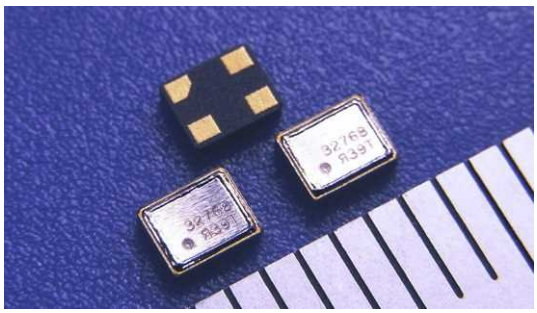
SMD Crystal Oscillator FCXO-05C



RoHS Compliant Pb Free

Actual size

◆ FEATURES

- AT-cut crystal oscillator.
- Supports the wide kHz range of 22 ~ 87 kHz (32.768 kHz typ.).
- 2.5 × 2.0 × 0.9 mm Max. / 13 mg.
- Supply voltage 5.5 V available.
- Frequency tolerance ±7 ppm available.
- Operating temperature range -40 ~ +105°C available.
- Ceramic with metal lid sealed by patented Electron-Beam-Soldering.

◆ APPLICATIONS

- Smart-meters, wireless-modules.

◆ STANDARD SPECIFICATIONS / ORDERING INFORMATION

Ordering Number (Sample): X5C — 32768 — 18 — C Q3 — H X ##

(1) (2) (3) (4) (5) (6) (7) (8)

(1) Type
X5C

(2) Nominal Frequency	
32.768 kHz typ. / 22.000 ~ 87.000 kHz	e.g. 32.768 kHz = 32768

(3) Supply Voltage	
1.8 ±0.18 V	18
2.5 ±0.25 V	25
3.3 ±0.33 V	33
5.0 ±0.50 V	50
Other: 1.60 ~ 5.50 V	NN

(4) Frequency Tolerance @ 25°C			
±7 ppm	A	±20 ppm	D
±10 ppm	B	±30 ppm	E
±15 ppm	C	±50 ppm	F
		Other	N

1/10 of the tolerance of typical tuning-fork oscillators

(5) Operating Temperature	Frequency Temperature Characteristics (with reference to 25°C)				
	±10 ppm	± 15ppm	±20 ppm	±30 ppm	±50 ppm
-20 ~ +70°C	P1	P2	P3	P4	P5
-30 ~ +85°C	Q1	Q2	Q3	Q4	Q5
-40 ~ +85°C	-	R2	R3	R4	R5
-40 ~ +105°C	-	-	-	S4	S5
Other	NN				

(6) Storage Temperature*1	
-40 ~ +85°C	G
-40 ~ +105°C	H
-55 ~ +125°C	J
Other	N

*1 Not applicable to packing materials

(7) Tape & Reel (φ180 mm)	
3000 pcs/reel	X
Other	N

(8) RIVER Use Only (As needed)

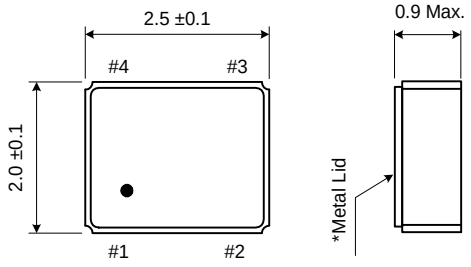
1/200 of the startup time of typical tuning-fork oscillators

Common Parameter	Specification	Unit	Note
Operating Supply Current	0.08 Max.	mA	F = 32.768 kHz, V_{DD} = 3.0V, No load
Stand-by Supply Current	10 Max.	μA	Stand-by = "L"
High-level Output Voltage	V_{DD}-0.4 Min.	V	I_{OH} = -1mA (up to +85°C) I_{OH} = -0.8mA (up to +105°C)
Low-level Output Voltage	0.4 Max.	V	I_{OL} = +1 mA (up to +85°C) I_{OL} = +0.8 mA (up to +105°C)
Output Load	15 Max.	pF	-

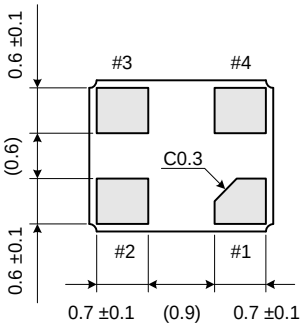
Common Parameter		Specification	Unit	Note
Output Level		CMOS	-	-
Duty Cycle		50 ±5	%	-
Rise / Fall Time		200 Max.	ns	10%V_{DD} to 90%V_{DD} level
Startup Time		2.0 Max.	ms	V_{DD} = 3.3 V
		5.0 Max.	ms	V_{DD} = 1.8 V
Stand-by (pin #1) Function	(High)	0.7V_{DD} Min.	V	Output (pin #3) enabled
	(Low)	0.3V_{DD} Max.	V	Output (pin #3) disabled: High-Z

- The codes for the *Ordering Number* are indicated in blue, and the specifications are described in black.
- Not all combinations of options are available as standard.
- For specifications that include "*Overall Frequency-Tolerance*", please select "N" for the *(4) Frequency Tolerance* and let us know your specific requirements.
- For specifications other than those above, please contact our sales / website and let us know your specific requirements.

◆ OUTLINE DEMENSIONS

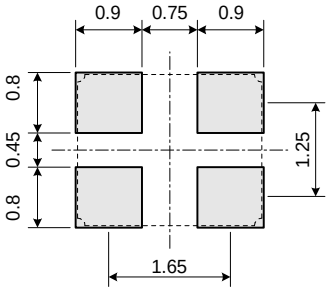


Pinout:
Pin #1. Stand-by (Marked with " ●")
Pin #2. Ground & Metal Lid*
Pin #3. Output
Pin #4. V_{DD}



◆ LAND PATTERN

Unit: mm



- For operational stability, a 0.01 μF bypass capacitor should be placed between *V_{DD} (Pin #4)* and *GND (Pin #2)* as close as possible to the product.

RIVER

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