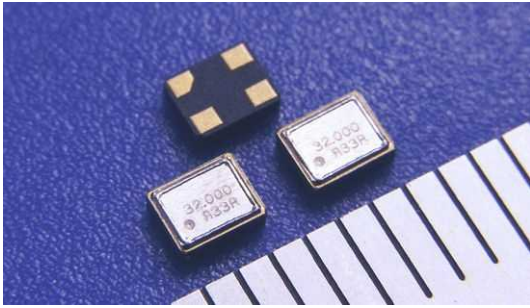


SMD Crystal Oscillator

FCXO-05E

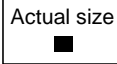


◆ FEATURES

- AT-cut crystal oscillator / frequency range 1 ~ 50 MHz.
- 2.5 × 2.0 × 0.9 mm Max. / 13 mg.
- Frequency tolerance ±7 ppm available.
- Operating temperature range -40 ~ +105°C available.
- Low phase noise.
- Ceramic with metal lid sealed by patented Electron-Beam-Soldering.

◆ APPLICATIONS

- Mobile communication, wireless-modules, Hi-Fi audio/video.



◆ STANDARD SPECIFICATIONS / ORDERING INFORMATION

Ordering Number (Sample): **X5E** — **49152** — **18** — **C Q3** — **H X ##**
 (1) (2) (3) (4) (5) (6) (7) (8)

(1) Type	(2) Nominal Frequency	(3) Supply Voltage	(4) Frequency Tolerance @ 25°C
X5E	1.000 ~ 50.000 MHz e.g. 49.152 MHz = 49152	1.8 ±0.18 V 18 2.5 ±0.25 V 25 3.3 ±0.33 V 33 Other: 1.60 ~ 3.63 V NN	±7 ppm A ±20 ppm D ±10 ppm B ±30 ppm E ±15 ppm C ±50 ppm F Other N

(5) Operating Temperature	Frequency Temperature Characteristics (with reference to 25°C)				
	±10 ppm	±15 ppm	±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

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

(8) RIVER Use Only (As needed)

*1 Not applicable to packing materials

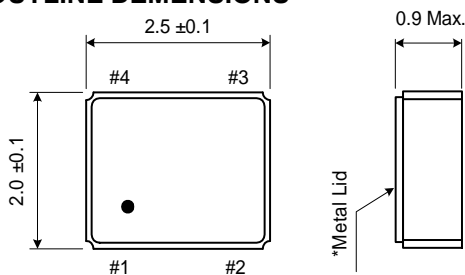
Common Parameter	Specification	Unit	Note
Operating Supply Current	3.0 Max.	mA	F = 40 MHz, V _{DD} = 3.0 V, No load
Stand-by Supply Current	10 Max.	μA	Stand-by = "L"
High-level Output Voltage	V _{DD} -0.4 Min.	V	I _{OH} = -4 mA
Low-level Output Voltage	0.4 Max.	V	I _{OL} = +4 mA
Output Load	15 Max.	pF	-
Output Level	CMOS	-	-
Duty Cycle	50 ±5	%	-
Rise / Fall Time	6.0 Max.	ns	10% V _{DD} to 90% V _{DD} level

Common Parameter	Specification	Unit	Note
Startup Time	2.0 Max.	ms	V _{DD} = 3.3 V
	5.0 Max.	ms	V _{DD} = 1.8 V
Random Jitter (RJ) *2	3.0 typ.	ps	V _{DD} = 3.3 V
Total Jitter (TJ) *2	43 typ.	ps	V _{DD} = 3.3 V, T _J = n*RJ (n ≈ 14.1, BER = 10 ⁻¹²)
Phase Noise	-140 typ.	dBc /Hz	V _{DD} = 1.8V, f _o ±1 kHz
	-156 typ.		V _{DD} = 1.8V, f _o ±100 kHz
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

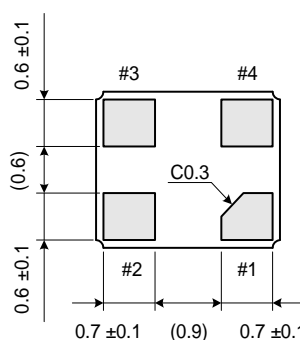
*2 Measured on "Wave Crest 3100C"

- 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 DIMENSIONS

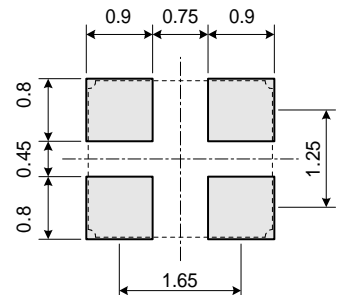


Pinout:
 Pin #1. Stand-by (Marked with "●")
 Pin #2. Ground & Metal Lid*
 Pin #3. Output
 Pin #4. V_{DD}



◆ 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.

