

### ◆ FEATURES

- 1610 size tuning fork crystal unit / 32.768 kHz.
- 1.6 × 1.0 × 0.5 mm Max. / 2.7 mg.
- Frequency tolerance ±10 ppm available.
- Excellent shock-resistance & low ESR.
- Operating temperature range -40 ~ +105°C available.
- Ceramic with metal lid sealed by patented Electron-Beam-Soldering.

### ◆ APPLICATIONS

- Smartphones, wireless-modules, wearable devices.

### ◆ STANDARD SPECIFICATIONS / ORDERING INFORMATION

Ordering Number (Sample): F4A — 32768 — 090 — D 90 — R — H W ##

(1)                      (2)                      (3)                      (4) (5)                      (6)                      (7) (8) (9)

(1) Type	
TFX-04	F4A
TFX-04C	F4C

(2) Nominal Frequency	
32.768 kHz	32768

(3) Load Capacitance	
5.0, 7.0, 9.0, 12.5 pF*1	e.g. 9.0 pF = 090

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

(5) Equivalent Series Resistance (Motional/Shunt Capacitance)		
TFX-04	90 kΩ Max. (6.5 fF Typ./1.3 pF Typ.)	90
TFX-04C	60 kΩ Max. (7.5 fF Typ./1.5 pF Typ.)	60
TFX-04/04C	Other	NN

(6) Operating Temperature	
-20 ~ +70°C	P
-40 ~ +85°C	R
-40 ~ +105°C	S
Other	N

(7) Storage Temperature*2	
-40 ~ +85°C	G
-40 ~ +105°C	H
-55 ~ +125°C	J
Other	N

(8) Tape & Reel (φ180 mm)	
5000 pcs/reel	W
Other	N

(9) RIVER Use Only (As needed)

\*2 Not applicable to packing materials

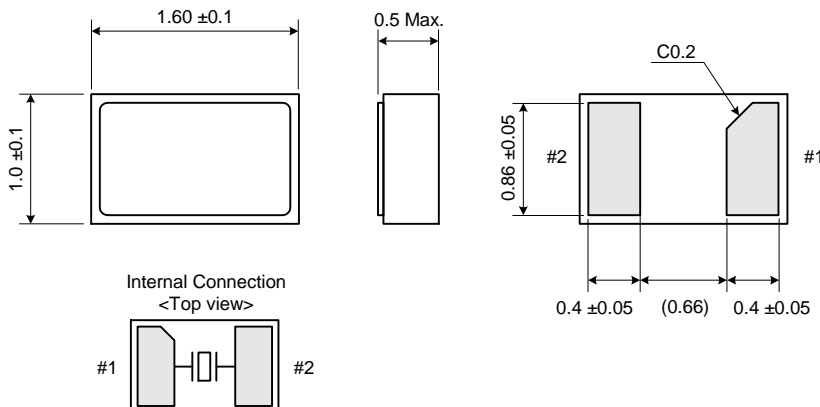
Temperature Coefficient
-0.03 ±0.01ppm/°C <sup>2</sup>

Turnover Temperature
25 ±5°C

Drive Level
0.5 μW Max.

- 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.
- AEC-Q200 complaint spec available upon request.
- For specifications other than those above, please contact our sales / website and let us know your specific requirements.

### ◆ OUTLINE DIMENSIONS



### ◆ LAND PATTERN

Unit: mm

