

◆ FEATURES

- 2012 size tuning fork crystal unit / 32.768 kHz.
- 2.0 × 1.2 × 0.60 mm Max. / 5.0 mg (TFX-03 & TFX-03C).
- 2.0 × 1.2 × **0.35 mm** Max. / **2.9** mg (TFX-03L).
- Frequency tolerance ±10 ppm available.
- Excellent shock-resistance & low ESR in a low-profile package.
- Operating temperature range -40 ~ +105°C available.
- Ceramic with metal lid sealed by patented Electron-Beam-Soldering.

◆ APPLICATIONS

- Smartphones, wireless-modules, wearable devices, smart cards(03L).

◆ STANDARD SPECIFICATIONS / ORDERING INFORMATION

Ordering Number (Sample): **F3A** — **32768** — **090** — **D 90** — **R** — **H X ##**
 (1) (2) (3) (4) (5) (6) (7) (8) (9)

(1) Type	
TFX-03	F3A
TFX-03C	F3C
TFX-03L	F3L

(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-03/03L	90 kΩ Max. (6.5 fF Typ./1.3 pF Typ.)	90
TFX-03C	50 kΩ Max. (9.5 fF Typ./1.8 pF Typ.)	50
ALL(03/C/L)	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)		
TFX-03/03C	3000 pcs/reel	X
TFX-03L	5000 pcs/reel	W
ALL(03/C/L)	Other	N

(9) RIVER Use Only (As needed)

*2 Not applicable to packing materials

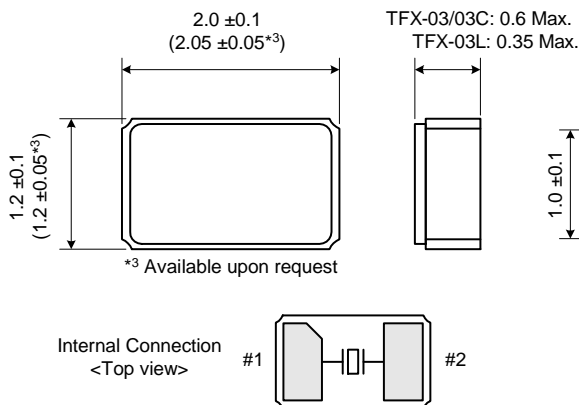
Temperature Coefficient
-0.03 ±0.01ppm/°C ²

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 DEMENSIONS



◆ LAND PATTERN

Unit: mm

