

◆ FEATURES

- 1610 size, 32.768 kHz tuning fork crystal unit with 2 options;
TFX-04: Standard type (1.6 × 1.0 × 0.5 mm Max. / 2.7 mg)
TFX-04C: Low-ESR type (1.6 × 1.0 × 0.5 mm Max. / 2.7 mg)
- Ultra-Low ESR in ultra-compact package
- Excellent shock-resistance
- High-precision frequency (available from ±10 ppm @25°C)
- Wide operating temperature range (-40 ~ +105°C)
- High-reliable ceramic/metal package sealed with electron beam
- Specifications in conformity with AEC-Q200 available on request

◆ APPLICATIONS

- Smartphones / wireless-modules / wearable devices
- Applications that require accurate clock sources

◆ 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

*1 Other values available on request

(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

*2 Not applicable to packing materials

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

(9) RIVER Use Only (As needed)

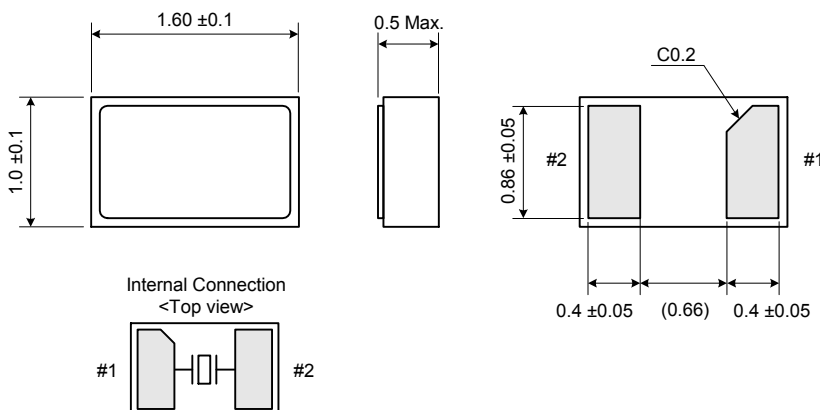
Temperature Coefficient
-0.03 ±0.01ppm/°C²

Turnover Temperature
25 ±5°C

Drive Level
0.5 μW Max.

- "Ordering Number" codes are indicated in blue, and their corresponding specifications are described in black.
- Not all combinations of options are available as a standard specification.
- For specifications other than those above, please consult our sales or contact us via our website with your requirement.

◆ OUTLINE DIMENSIONS



◆ LAND PATTERN

Unit: mm

