

SMD Tuning Fork Crystal Unit

Low ESR / 1.6 mm x 1.0 mm / 32.768 kHz

TFX-04 / TFX-04C

Standard type

Low-ESR type

FEATURES

- 1610 size tuning fork crystal unit (32.768 kHz) with 2 types :
 - TFX-04 (standard type)
 - TFX-04C (low-ESR type) : ESR 60 kΩ Max.
- Frequency tolerance of ± 10 ppm (@25 °C) available
- Wide operating temperature range of -40 °C to +105 °C available
- Excellent shock-resistance
- Robust ceramic package with metal lid sealed by electron beam
- Specifications in conformity with AEC-Q200 available on request



(1.6 × 1.0 × 0.5 mm)



APPLICATIONS

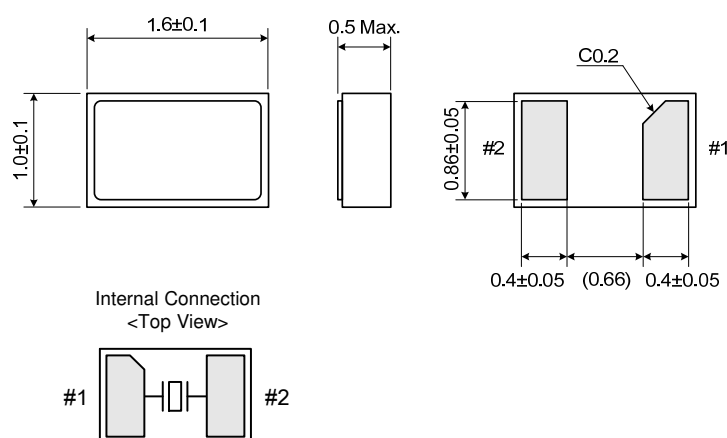
- Small wireless-modules, Wearable devices, Hearable devices, and others
- Smartphones, Medical and Healthcare devices, Automotive electronics, and others

STANDARD SPECIFICATIONS

Item	Specifications		Unit	Conditions (Remarks)
	TFX-04 (Standard)	TFX-04C (Low-ESR)		
Nominal frequency	32.768		kHz	-
Frequency tolerance	± 10		ppm	@25 °C (See below for more options)
Equivalent series resistance (Max.)	90	60	kΩ	-
Motional capacitance (Typ.)	6.5	7.5	fF	-
Shunt capacitance (Typ.)	1.3	1.5	pF	-
Storage temperature	-55 to +125		°C	-
Operating temperature	-40 to +85 -40 to +105		°C	(See below for more options)
Temperature coefficient	-0.03 ± 0.01		ppm/°C ²	-
Turnover temperature	25 $\pm$ 5		°C	-
Load capacitance	5.0, 7.0, 9.0, 12.5		pF	(Other values available)
Drive level (Max.)	0.5		μW	-
Tape and reel	5000		pcs/reel	Reel diameter : ϕ 180 mm

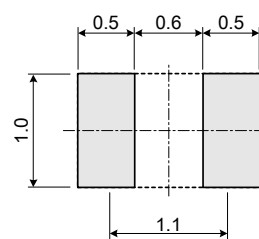
OUTLINE DIMENSIONS

(Unit: mm)



RECOMMENDED LAND PATTERN

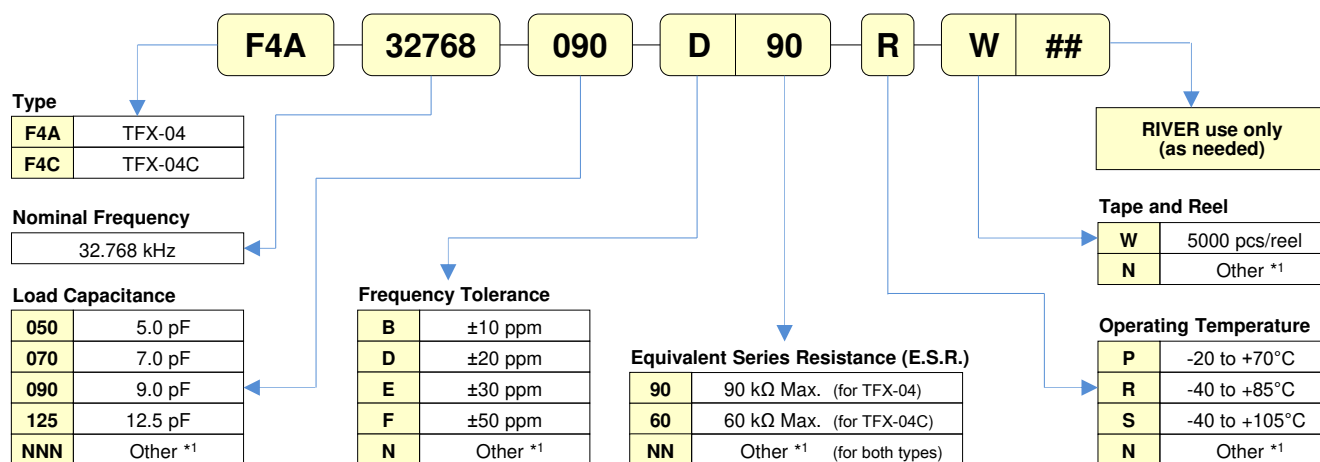
(Unit: mm)



GENERAL NOTES

- Certain combinations of standard options may be classified as high-spec models.
- Please consult us for specifications that do not match the standard specifications.
- The information in this document is subject to change without notice.

ORDERING NUMBER GUIDE



*1. Please consult us for your requirements.

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