

SC-12S

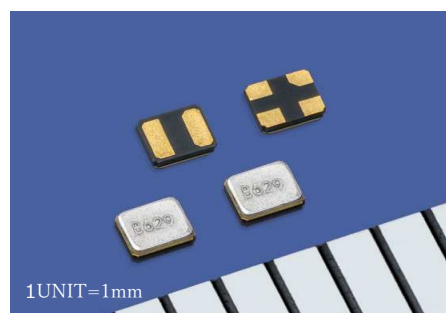
1210-Size 32 kHz Tuning Fork Crystal Resonator Ultra-Compact Package

•Features

- Ultra small size type 1210(1.2×1.0×0.5mm max.).
- Space-saving design improves board layout flexibility
- Excellent shock and heat resistance.
- Ideal for small devices such as smart rings and medical wearables
- Supports 2-terminal and 4-terminal configurations

•Applications

- Smart ring
- GPS module
- Smartwatch
- Smart hearing aid
- Various microcontroller sub-clocks
- Reference clock for RTC
- Various communication modules
- Medical wearable devices

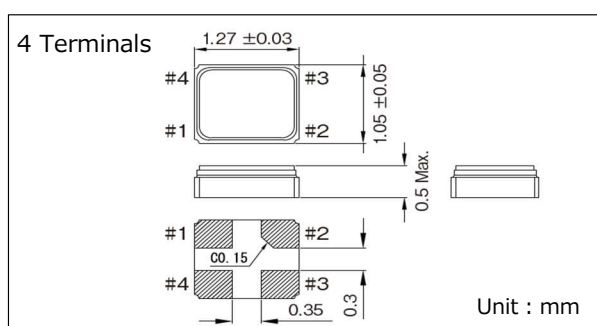
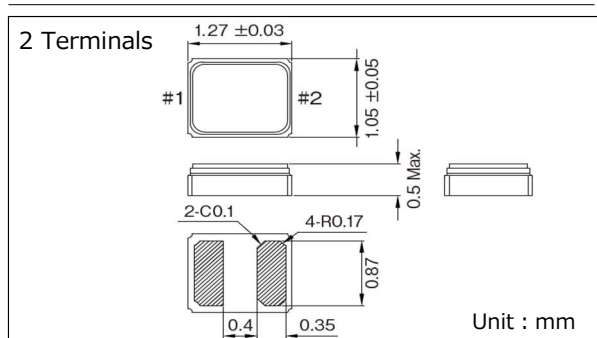


•Specifications

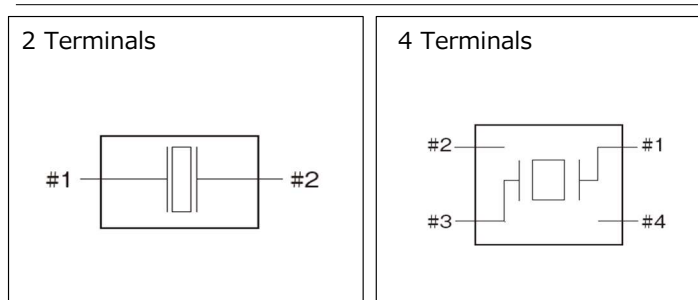
Conditions where not specified (Temperature: 25±2°C, DL;0.1μW)

Item	Symbol	Specifications		Conditions / Note
		2 terminals	4 terminals	
Nominal Frequency	f _{nom}	32.768kHz		
Frequency Tolerance	f _{tol}	±20×10 ⁻⁶		
Turnover Temperature	T _i	25±5°C		
Parabolic Coefficient	β	(-0.036±10%)×10 ⁻⁶ /°C ²		
Load Capacitance	CL	4pF, 6pF, 7pF, 9pF, 12.5pF		For other CLs, please contact us.
Motional Resistance (ESR)	R ₁	90kΩ Max.		
Absolute Max. Drive Level	DL _{max}	0.3μW Max.		
Drive Level	DL	0.1μW Typ.		
Shunt Capacitance	C ₀	1.4pF Typ.		Reference value
Frequency Ageing	f _{age}	±5×10 ⁻⁶ /year		First year
Operating Temperature	T _{use}	-40~+85°C		
Storage Temperature	T _{stg}	-55~+125°C		Store individually

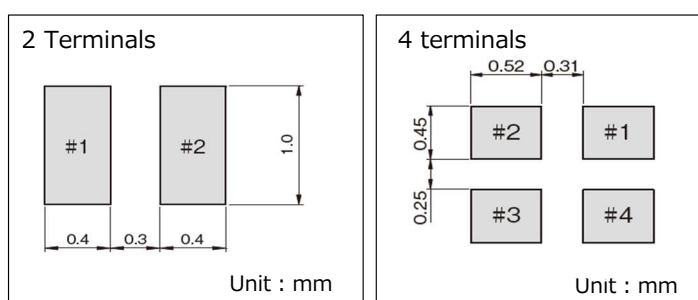
•Dimensions



•Internal Lead Connections



•Recommended Soldering Pattern



Remark: When designing the circuit board, do not place circuit patterns on the crystal resonator mounting area (bottom surface).

Seiko Instruments Inc.

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