

SC-20P

2012-Size 32 kHz Low-ESR Tuning Fork Crystal Resonator R1 = 50 kΩ Max.

•Features

- Achieves R1=50kΩ Max. over a wide temperature range (-40°C to +85°C)
- SMD type suitable for high-density mounting
- Excellent shock and heat resistance.
- Complies with EU RoHS directive (completely Pb-free)
- Built-in highly reliable photolithographic crystal Resonator

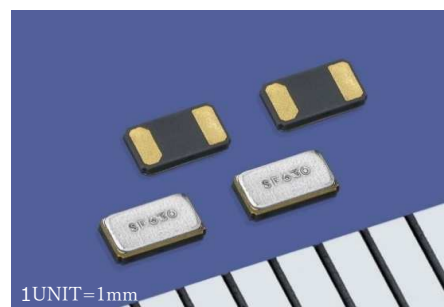
•Applications

- Smart ring
- Smartwatch
- Various microcontroller sub-clocks
- Bluetooth communication module
- GPS module
- Smart hearing aid
- Reference clock for RTC

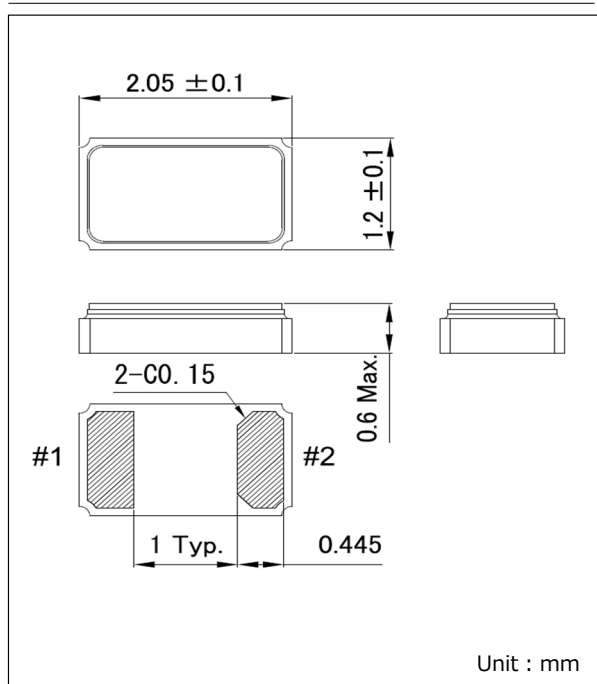
•Specifications

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

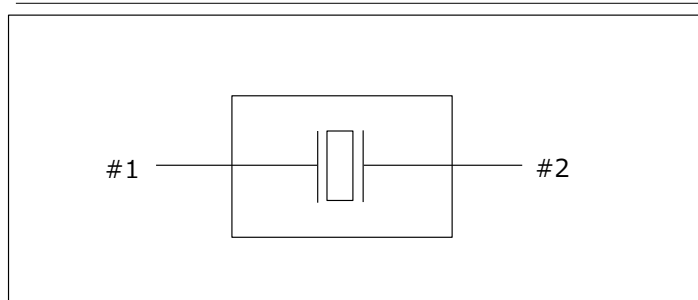
Item	Symbol	Specifications	Conditions / Note
Nominal Frequency	f_nom	32.768kHz	
Frequency Tolerance	f_tol	±20×10 ⁻⁶	Please contact us regarding other deviations.
Turnover Temperature	Ti	25±5°C	
Parabolic Coefficient	β	(-0.029±10%) × 10 ⁻⁶ /°C ²	
Load Capacitance	CL	4pF, 6pF, 7pF, 9pF, 12.5pF	For other CLs, please contact us.
Motional Resistance (ESR)	R1	50kΩ Max.	-40°C to +85°C
Absolute Max. Drive Level	DLmax.	1.0μW Max.	
Drive Level	DL	0.1μW Typ.	
Shunt Capacitance	C0	1.5pF 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



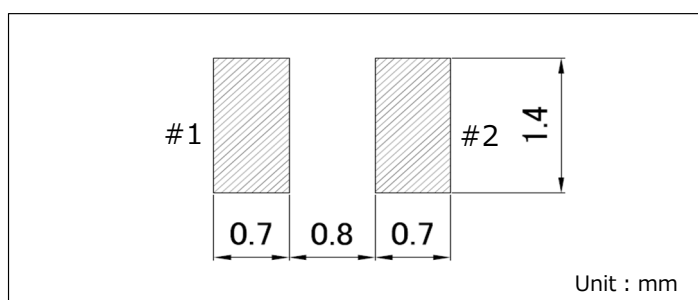
•Dimensions



•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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