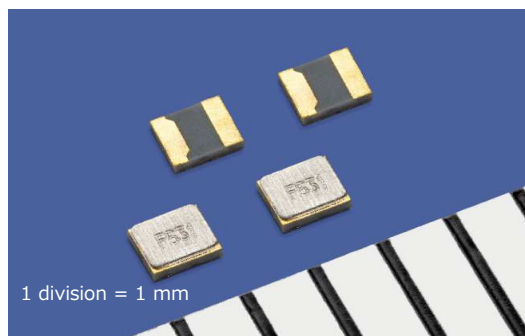


## SC-10S (World's smallest-class 32 kHz crystal)

### Features

- World's smallest-class 32 kHz crystal with dimensions of 1.0 × 0.8 × 0.32 mm
- SMD type suitable for high-density mounting
- Excellent shock resistance and heat resistance
- Completely Pb-free
- Highly reliable photolithography-processed crystal unit is built in.



### Applications

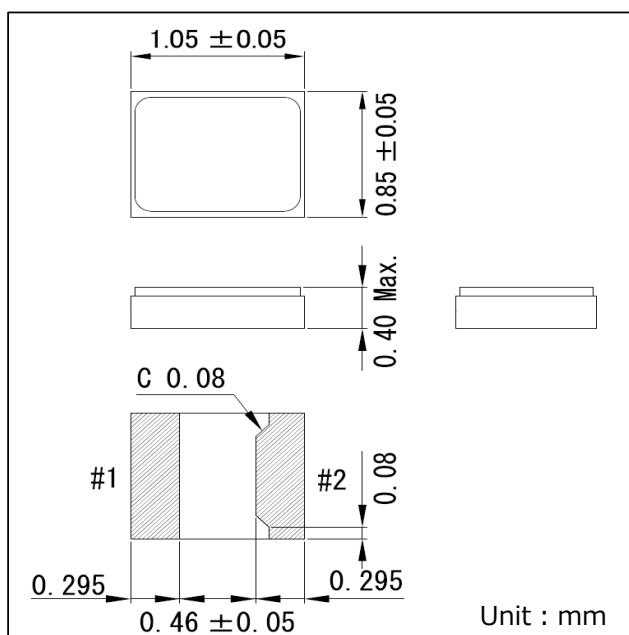
- Smart rings
- Smartwatches
- Various microcomputer sub-clocks
- Various communication modules
- GPS modules
- Hearing aid

### Standard Specifications

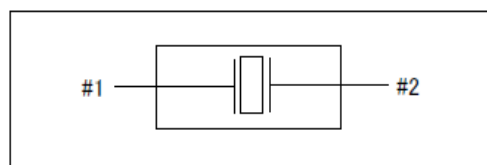
Measurement temperature: 25±2°C, DL: 0.1μW

Item	Symbol	Specifications	Conditions / Note
Nominal Frequency	f_nom	32.768kHz	
Frequency Tolerance	f_tol	±20×10 <sup>-6</sup>	
Turnover Temperature	Ti	25±5°C	
Parabolic Coefficient	B	(-0.036±10%)×10 <sup>-6</sup> /°C <sup>2</sup>	
Load Capacitance	CL	4pF, 6pF, 7pF, 9pF, 12.5pF	Please contact us for other CLs.
Motional Resistance (ESR)	R1	90kΩ Max.	
Absolute Max. Drive Level	DLmax.	0.3μW Max.	
Drive Level	DL	0.1μW Typ.	Reference
Shunt Capacitance	C0	1.1pF Typ.	Reference
Frequency Ageing	f_age	±5×10 <sup>-6</sup> /year	+25±3°C, First Year
Operating Temperature	T_use	-40~+85°C	
Storage Temperature	T_stg	-55~+125°C	Individual storage

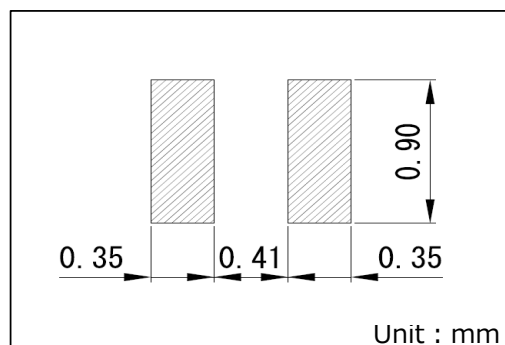
### External dimensions



### Internal connection diagram



### Recommended Land Pattern



Note: When designing a circuit board, do not create a circuit pattern on the crystal unit mounting area (bottom surface).