



kHz RANGE CRYSTAL UNIT

FC2012SN



Product Number
FC2012SN: X1A000201xxxx18

- Frequency range : 32.768 kHz
- External dimensions : 2.05 x 1.2 x 0.6 mm
- Overtone order : Fundamental
- Applications : IoT Devices, Modules, etc.



Specifications (characteristics)

Item	Symbol	Specifications	Conditions / Remarks
Nominal frequency range	f_nom	32.768 kHz	
Storage temperature range	T_stg	-55 °C to +125 °C	Storage as single product.
Operating temperature range	T_use	-40 °C to +105 °C	
Level of drive	DL	0.5 μW Max.	
Frequency tolerance (standard)	f_tol	$\pm 20 \times 10^{-6}$	+25 °C, DL = 0.1 μW
Turnover temperature	Ti	+25 °C $\pm$ 5 °C	
Parabolic coefficient	B	$-0.04 \times 10^{-6} / ^\circ\text{C}^2$ Max.	
Load capacitance	CL	6 pF to ∞	Please specify
Motional resistance (ESR)	R1	90 kΩ Max.	-40 °C to +85 °C
		100 kΩ Max.	-40 °C to +105 °C
Motional capacitance	C1	8.4 fF Typ.	
Shunt capacitance	C0	1.6 pF Typ.	
Frequency aging	f_age	$\pm 3 \times 10^{-6} / \text{year}$ Max.	+25 °C, First year

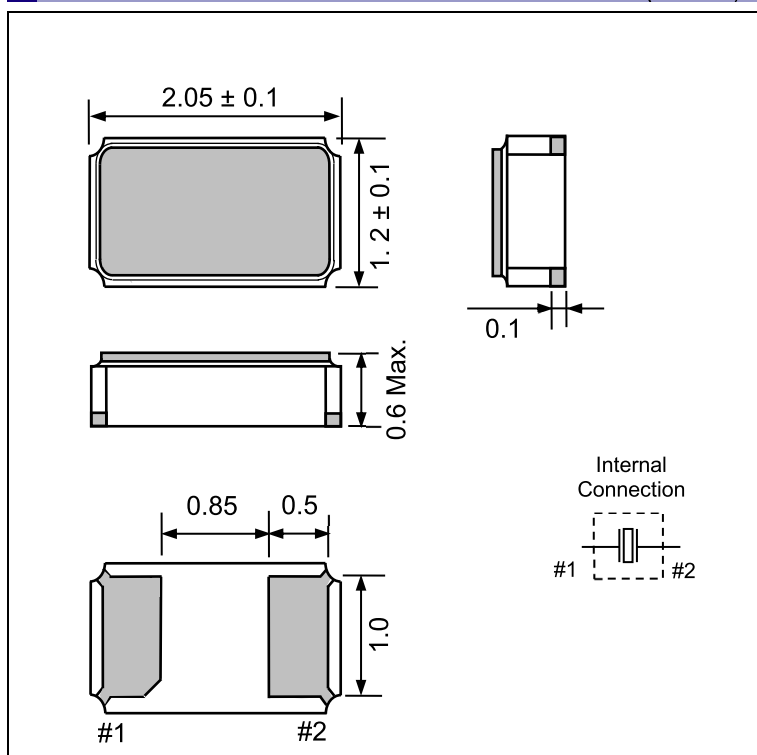
Product name

Product name FC2012SN 32.768000kHz 12.5 +20.0-20.0
(Standard form) a b c d

a: Model b: Frequency c: Load capacitance (pF) d: Frequency tolerance ($\times 10^{-6}$, +25 °C)

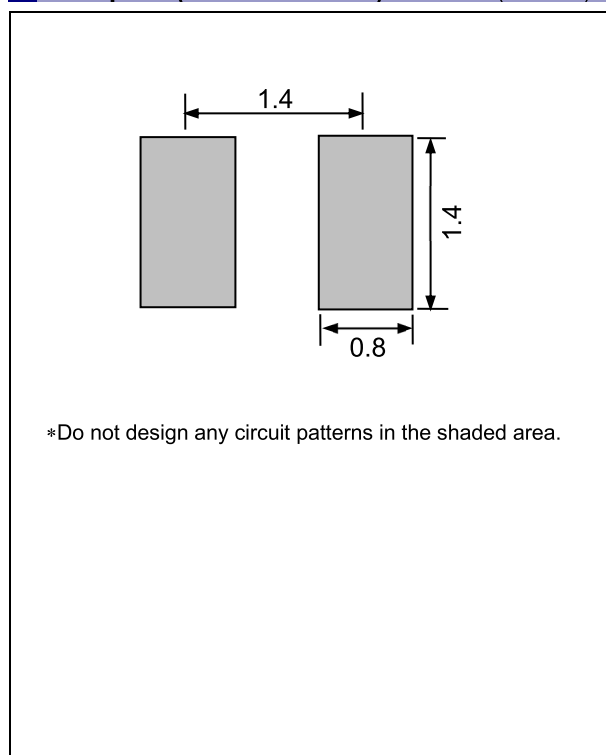
External dimensions

(Unit:mm)



Footprint (Recommended)

(Unit:mm)



► Explanation of the mark that are using it for the catalog

	► Pb free.
	► Complies with EU RoHS directive. *About the products without the Pb-free mark. Contains Pb in products exempted by EU RoHS directive. (Contains Pb in sealing glass, high melting temperature type solder or other.)
	► Designed for automotive general equipment.
	► Designed for automotive applications related to driving and safety.

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