

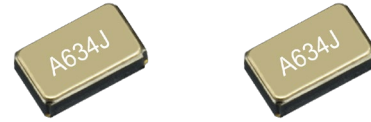
KHz RANGE CRYSTAL UNIT

FC-12M / FC-12M TYPE



Product Number  
 FC-12M : X1A000061xxxx00  
 FC-12M TYPE : X1A000021xxxx00

- Frequency range : FC-12M...32.768 kHz  
 : FC-12M TYPE...32 kHz to 68.51 kHz
- External dimensions : 2.05 x 1.2 x 0.6 mm
- Overtone order : Fundamental
- Applications : Small communications devices



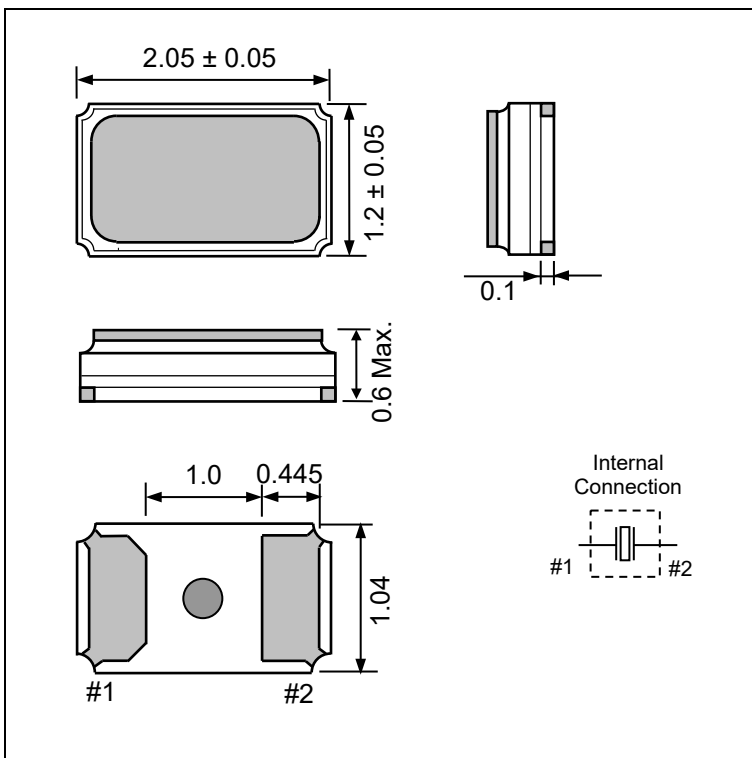
Specifications (characteristics)

Item	Symbol	Specifications		Conditions / Remarks
		FC-12M	FC-12M TYPE	
Nominal frequency range	f_nom	32.768 kHz	32 kHz to 68.51 kHz	Please contact us about available frequencies.
Storage temperature range	T_stg	-55 °C to +125 °C		Storage as single product.
Operating temperature range	T_use	-40 °C to +85 °C		
Level of drive	DL	0.5 μW Max.		
Frequency tolerance (standard)	f_tol	±20 x 10 <sup>-6</sup> ±30 x 10 <sup>-6</sup>		+25 °C, DL = 0.1 μW Please ask for tighter tolerance
Turnover temperature	Ti	+25 °C ± 5 °C		
Parabolic coefficient	B	-0.04 x 10 <sup>-6</sup> / °C <sup>2</sup> Max.		
Load capacitance	CL	7 pF, 9 pF, 12.5 pF		Please contact us other CL values
Motional resistance (ESR)	R1	90 kΩ Max.	90 kΩ to 55 kΩ Max.	
Motional capacitance	C1	6.4 fF Typ.	7.0 fF to 3.2 fF Typ.	
Shunt capacitance	C0	1.3 pF Typ.	1.6 pF to 0.8 pF Typ.	
Frequency aging	f_age	±3 x 10 <sup>-6</sup> / year Max.		+25 °C, First year

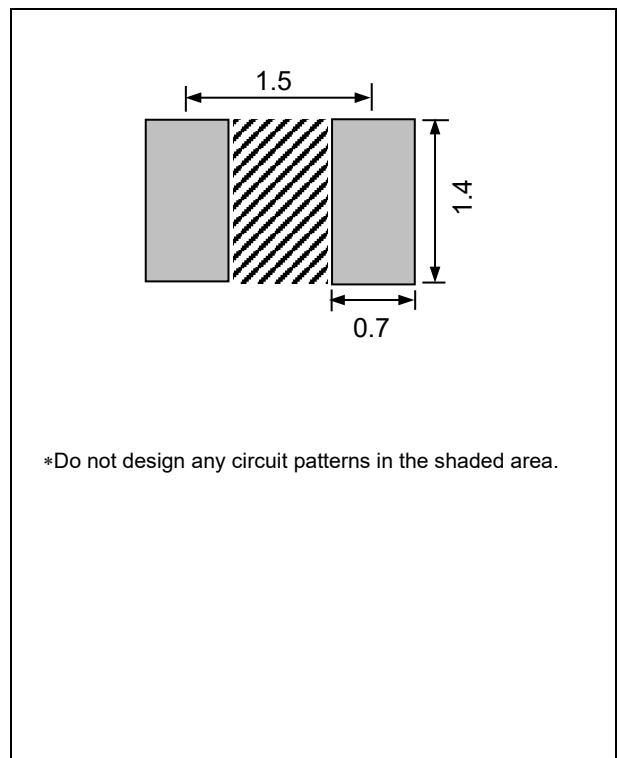
Product name

Product name FC-12M 32.768000kHz 12.5 +20.0-20.0  
 (Standard form) ① ② ③ ④  
 ①Model ②Frequency ③Load capacitance (pF) ④Frequency tolerance (× 10<sup>-6</sup>, +25 °C)

External dimensions (Unit:mm)



Footprint (Recommended) (Unit:mm)



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

	<p>► Pb free.</p>
	<p>► 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.)</p>
	<p>► Designed for automotive general equipment.</p>
	<p>► Designed for automotive applications related to driving and safety.</p>

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