



kHz RANGE CRYSTAL UNIT



Product Number
 FC-135R : X1A000141xxxx00
 FC-135 : Q13FC1350xxxx00
 FC-135 TYPE : Q14FC1350xxxx00

FC-135R

FC-135 / FC-135 TYPE

- Frequency range : FC-135R / FC-135...32.768 kHz
: FC-135 TYPE...32 kHz to 77.5 kHz
- External dimensions : 3.2 × 1.5 × 0.80 mm
- Overtone order : Fundamental
- Applications : Small communications devices



Specifications (characteristics)

Item	Symbol	Specifications			Conditions / Remarks
		FC-135R	FC-135	FC-135 TYPE	
Nominal frequency range	f_nom	32.768 kHz	32.768 kHz	32 kHz to 77.5 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 (+105 °C)			Please contact us about +85 °C < T_use
Level of drive	DL	0.5 μW (1.0 μW Max.)			Please contact us if you require 1.0 μW Max.
Frequency tolerance (standard)	f_tol	±20 × 10 ⁻⁶			+25 °C, DL=0.1 μW Please ask for tighter tolerance
Turnover temperature	Ti	+25 °C ±5 °C			
Parabolic coefficient	B	-0.04 × 10 ⁻⁶ / °C ² Max.			
Load capacitance	CL	7 pF, 9 pF, 12.5 pF			Please specify
Motional resistance (ESR)	R1	50 kΩ Max.	70 kΩ Max.	70 kΩ to 45 kΩ	
Motional capacitance	C1	3.4 fF Typ.	3.4 fF Typ.	3.7 fF to 1.6 fF	
Shunt capacitance	C0	1.0 pF Typ.	1.0 pF Typ.	1.3 pF to 0.5 pF	
Frequency aging	f_age	±3 × 10 ⁻⁶ / year Max.			+25 °C, First year

Product name FC-135R 32.768000kHz 12.5 +20.0-20.0

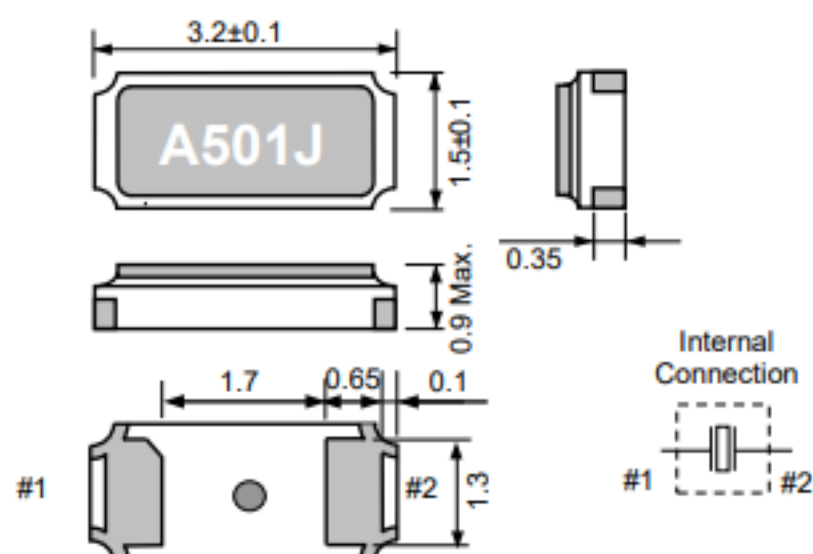
(Standard form)

① Model ② Frequency ③ Load capacitance (pF) ④ Frequency tolerance (× 10⁻⁶, +25 °C)

External dimensions

(Unit:mm)

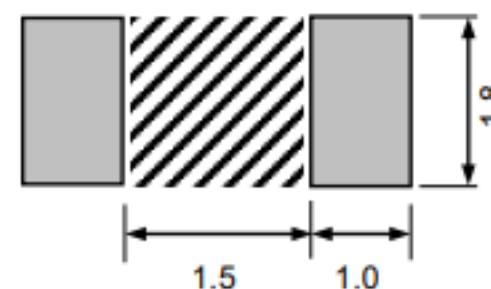
FC-135R / FC-135



Footprint (Recommended)

(Unit:mm)

FC-135R / FC-135



*Do not design any circuit patterns in the shaded area.