

**kHz RANGE CRYSTAL UNIT**  
For Automotive



**MC - 30AY**

- Frequency range : 32.768 kHz (20 kHz to 120 kHz)
- External dimensions : 8.0 × 3.8 × 2.54 mm
- Overtone order : Fundamental
- Applications : Car audio, ECU sub clock, Car navigation system, Clock
- Conforms to AEC-Q200



Actual size



**Specifications (characteristics)**

Item	Symbol	Specifications		Conditions / Remarks
Nominal frequency range	f_nom	32.768 kHz	20 kHz to 120 kHz	Please contact us about available frequencies.
Storage temperature	T_stg	-55 °C to +125 °C		Storage as single product.
Operating temperature	T_use	-40 °C to +125 °C		
Level of drive	DL	1.0 μW Max.		
Frequency tolerance (standard)	f_tol	±20 × 10 <sup>-6</sup> , ±50 × 10 <sup>-6</sup>	±50 × 10 <sup>-6</sup> , ±100 × 10 <sup>-6</sup>	+25 °C, DL=0.1 μW
Turnover temperature	Ti	+25 °C ±5 °C		
Parabolic coefficient	B	-0.04 × 10 <sup>-6</sup> / °C <sup>2</sup> Max.		
Load capacitance	CL	6 pF to ∞ (standard :12.5 pF)		Please specify
Motional resistance (ESR)	R1	50 kΩ Max.	As per table below	
Motional capacitance	C1	1.8 fF Typ.	4.0 fF to 0.6 fF	
Shunt capacitance	C0	0.9 pF Typ.	2.0 pF to 0.6 pF	
Frequency aging	f_age	±3 × 10 <sup>-6</sup> / year Max.	±5 × 10 <sup>-6</sup> / year Max.	+25 °C, First year

**Motional resistance (ESR)**

Frequency	20 kHz ≤ f_nom < 31.2 kHz	31.2 kHz ≤ f_nom < 40 kHz	40 kHz ≤ f_nom < 90 kHz	90 kHz ≤ f_nom ≤ 120 kHz
Motional resistance	55 kΩ Max.	35 kΩ Max.	20 kΩ Max.	12 kΩ Max.

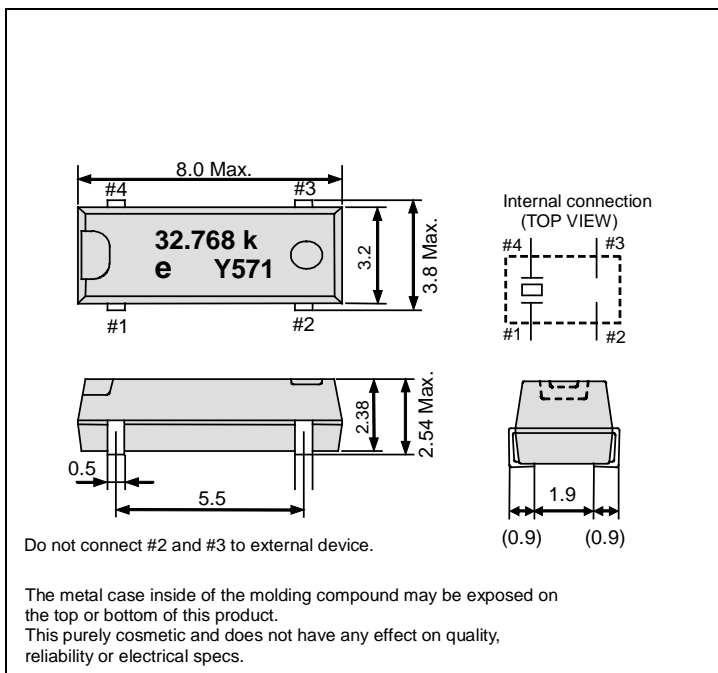
Product name MC-30AY 32.768000kHz 12.5 +20.0-20.0

(Standard form)

- ① Model    ② Frequency    ③ Load capacitance(pF)    ④ Frequency tolerance(x 10<sup>-6</sup>, +25 °C)

**External dimensions**

(Unit:mm)



**Footprint (Recommended)**

(Unit:mm)

