



kHz RANGE CRYSTAL UNIT FOR AUTOMOTIVE APPLICATIONS



Product Number (please contact us)
Q1xMC30A1xxxx00

MC - 30A

- Frequency range : 32.768 kHz (20 kHz to 165 kHz)
- Thickness : 2.54 mm Max.
- Overtone order : Fundamental
- Applications : Accessories and ECU sub clock
- Conforms to AEC-Q200



Actual size



Specifications (characteristics)

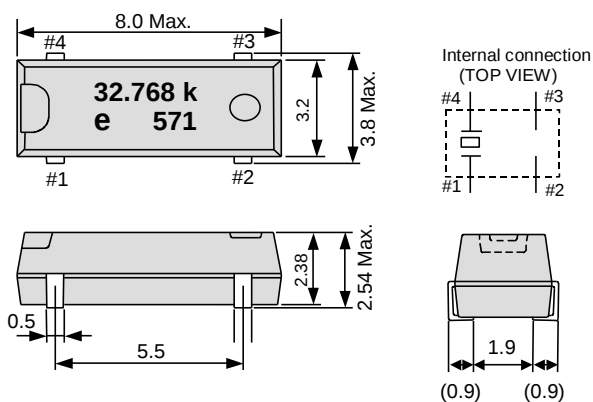
Item	Symbol	Specifications		Conditions / Remarks
Nominal frequency range	f_nom	32.768 kHz	20 kHz to 165 kHz	Please contact us regarding available frequencies
Storage temperature	T_stg	-55 °C to +125 °C		Store as bare product.
Operating temperature	T_use	-40 °C to +85 °C		
Level of drive	DL	1.0 μW Max.		
Frequency tolerance (standard)	f_tol	$\pm 20 \times 10^{-6}$, $\pm 50 \times 10^{-6}$	$\pm 50 \times 10^{-6}$, $\pm 100 \times 10^{-6}$	+25 °C, DL=0.1 μW
Turnover temperature	Ti	+25 °C $\pm$ 5 °C		
Parabolic coefficient	B	-0.04×10^{-6} / °C ² Max.		
Load capacitance	CL	6 pF to ∞ (standard :12.5 pF)		Please specify
Motional resistance (ESR)	R ₁	50 kΩ Max.	As per below table	
Motional capacitance	C ₁	1.8 fF Typ.	4.0 fF to 0.6 fF	
Shunt capacitance	C ₀	0.9 pF Typ.	2.0 pF to 0.6 pF	
Frequency aging	f_age	$\pm 3 \times 10^{-6}$ / year Max.	$\pm 5 \times 10^{-6}$ / 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<130 kHz	130 kHz≤f_nom≤165 kHz
Motional resistance	55 kΩ Max.	35 kΩ Max.	20 kΩ Max.	12 kΩ Max.	10 kΩ Max.

External dimensions

(Unit:mm)



Do not connect #2 and #3 to external device.

Metal may be exposed on the top or bottom of this product.
This will not affect any quality, reliability or electrical spec.

Footprint (Recommended)

(Unit:mm)

