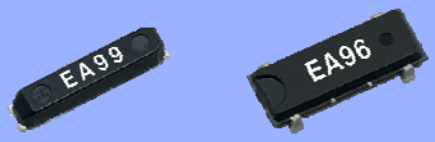
kHz RANGE CRYSTAL UNIT
LOW PROFILE SMD

MC - 146 / MC - 156

- Frequency range : 32.768 kHz (32 kHz to 100 kHz)
- External dimension : 7.0 × 1.5 × 1.4 t (mm) ···MC-146
  7.1 × 3.3 × 1.5 t (mm) ···MC-156
- Overtone order : Fundamental
- Applications : Small communications devices

RoHS Compliant

Product Number (please contact us)
MC-146 : Q14MC146xxxxx00
MC-156 : Q14MC156xxxxx00



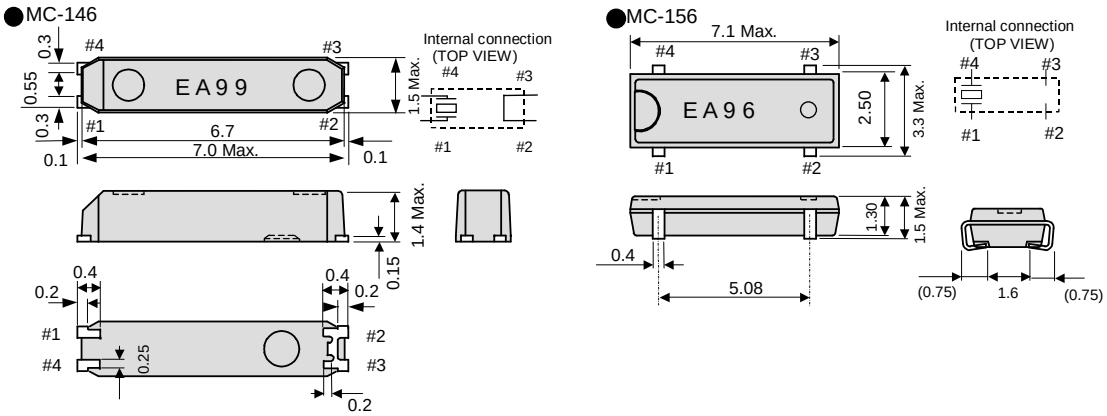
Actual size

MC-146	MC-156
	

Specifications (characteristics)

Item		Symbol	Specifications		Remarks
Nominal frequency range		f_nom	32.768 kHz	32 kHz to 100 kHz	Please contact us for inquiries regarding available frequencies
Temperature range	Storage temperature	T_stg	-55 °C to +125 °C		Store as bare product after unpacking
	Operating temperature	T_use	-40 °C to +85 °C		
Level of drive		DL	1.0 μW Max.		Operating Drive level 0.5 μW Max.
Frequency tolerance (standard)		f_tol	± 20 × 10^{-6}, ± 50 × 10^{-6}	± 50 × 10^{-6}, ± 100 × 10^{-6}	+25 °C, DL=0.1 μW
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)		R_1	65 kΩ Max.	65 kΩ to 25 kΩ	
Motional capacitance		C_1	1.9 fF Typ.	2.5 fF to 0.6 fF	
Shunt capacitance		C_0	0.8 pF Typ.	1.2 pF to 0.5 pF	
Frequency aging		f_age	±3 × 10^{-6} / year Max.	±5 × 10^{-6} / year Max.	+25 °C, First year

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)