

KHz RANGE CRYSTAL UNIT LOW PROFILE SMD

MC-146 / MC-156

- Frequency range : 32.768 kHz (32 kHz to 100 kHz)
- Thickness : 1.4 mm Max. (MC-146)
1.5 mm Max. (MC-156)
- Overtone order : Fundamental
- Applications : Small communications devices



Actual size

MC-146

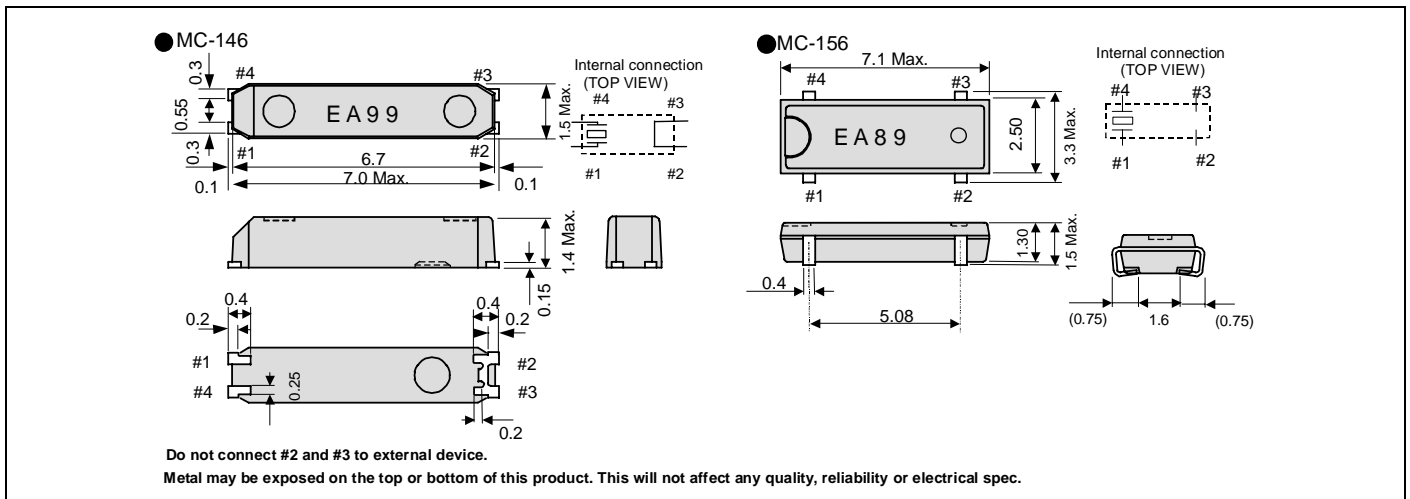
MC-156

Specifications (characteristics)

Item	Symbol	Specifications		Remarks
Nominal frequency range	f	32.768 kHz	32 kHz to 100 kHz	Please contact us for inquiries regarding available frequencies
Temperature range	Storage temperature	-55 °C to +125 °C		Store as bare product after unpacking
	Operating temperature	-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	$\pm 20 \times 10^{-6}$, $\pm 50 \times 10^{-6}$	$\pm 50 \times 10^{-6}$, $\pm 100 \times 10^{-6}$	+25 °C, DL=0.1 μW
Turnover temperature	Ti	+25 °C \pm 5 °C		
Parabolic coefficient	B	$-0.04 \times 10^{-6} / ^\circ\text{C}^2$ Max.		
Load capacitance	CL	7 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	$\pm 3 \times 10^{-6} / \text{year}$ Max.	$\pm 5 \times 10^{-6} / \text{year}$ Max.	+25 °C, First year

External dimensions

(Unit:mm)



Footprint (Recommended)

(Unit:mm)

