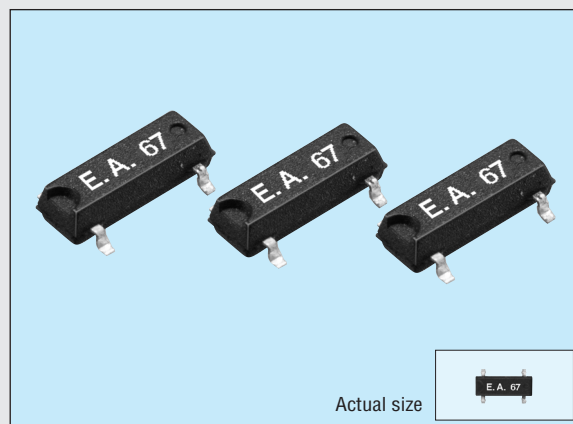


## THIN SMD LOW/MEDIUM-FREQUENCY CRYSTAL UNIT

## MC-206

- High-density mounting-type SMD of Max. 2.0 mm thickness.
- Small packaging area and light weight.
- High heat resistance allows reflow soldering.
- Excellent shock resistance and environmental capability.



## ■ Specifications (characteristics)

Item	Symbol	Specifications		Remarks
Nominal frequency	f	32.768 kHz	32.000 kHz to 100.000 kHz	
Temperature range	Storage temperature	T <sub>STG</sub> -55 °C to +125 °C		
	Operating temperature	T <sub>OPR</sub> -40 °C to +85 °C		
Maximum drive level	GL	1.0 μW Max.		
Soldering condition	T <sub>SOL</sub>	Twice at under +260 °C within 10 s or under +230 °C within 3 min.		
Frequency tolerance (standard)	Δf/f	±20 x 10 <sup>-6</sup> , ±50 x 10 <sup>-6</sup>	±50 x 10 <sup>-6</sup> , ±100 x 10 <sup>-6</sup>	T <sub>a</sub> =+25 °C, DL=0.1 μW
Peak temperature (frequency)	θT	+25 °C ±5 °C		
Temperature coefficient (frequency)	a	-0.04 x 10 <sup>-6</sup> / °C <sup>2</sup> Max.		
Load capacitance	C <sub>L</sub>	7 pF, 12.5 pF		Please specify
Series resistance	R <sub>1</sub>	55 kΩ Max.	50 kΩ to 20 kΩ	As per below table
Motional capacitance	C <sub>1</sub>	1.8 fF Typ.	3.0 fF Max.	
Shunt capacitance	C <sub>0</sub>	0.9 pF Typ.	1.5 pF Max.	
Insulation resistance	IR	500 MΩ Min.		
Aging	f <sub>a</sub>	±3 x 10 <sup>-6</sup> / year Max.	±5 x 10 <sup>-6</sup> / year Max.	T <sub>a</sub> = +25 °C ±3 °C, first year
Shock resistance	S.R.	±5 x 10 <sup>-6</sup> Max.		Three drops on a hard board from 750 mm or excitation test with 29400 m/s <sup>2</sup> x 0.3 ms x 1/2 sine wave x 3 directions

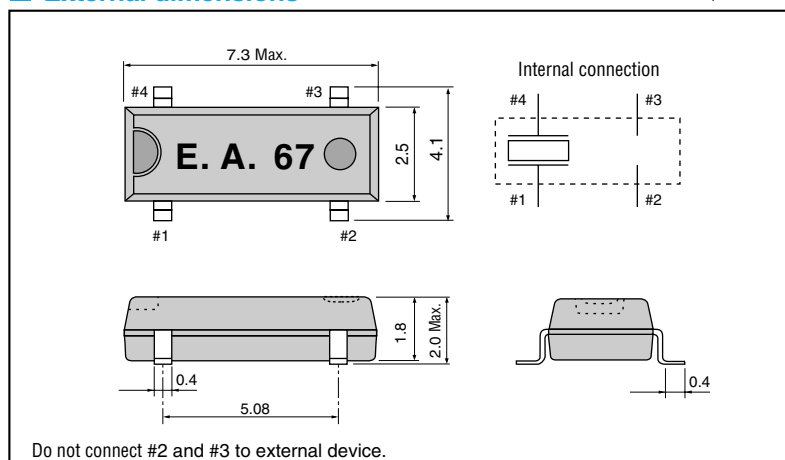
Metal may be exposed on the top of this product. This won't affect any quality, reliability or electrical spec.

## ■ Series resistance

Frequency (kHz)	32 ≤ f < 38	38 ≤ f < 65.536	65.536 ≤ f < 75	75 ≤ f ≤ 100
Series resistance (Ω)	50 kΩ Max.	40 kΩ Max.	25 kΩ Max.	20 kΩ Max.

## ■ External dimensions

(Unit: mm)



## ■ Recommended soldering pattern

(Unit: mm)

