kHz RANGE CRYSTAL UNIT
SMD

MC - 306
MC - 405 / MC - 406

- Frequency range : 32.768 kHz (20 kHz to 165 kHz)
- Thickness : 8.0 × 3.8 × 2.54 t (mm) ⋯MC-306
  10.41 × 4.06 × 3.6 t (mm) ⋯MC-405 / 406
- Overtone order : Fundamental /Overtone (307.2 kHz)
- Applications : Clock and Microcomputer

RoHS Compliant

Product Number (please contact us)
MC-306 : Q13MC3061xxxx00
MC-405 : Q1xMC4051xxxx00
MC-406 : Q1xMC4061xxxx00

Actual size

MC-306	MC-405 / 406
	

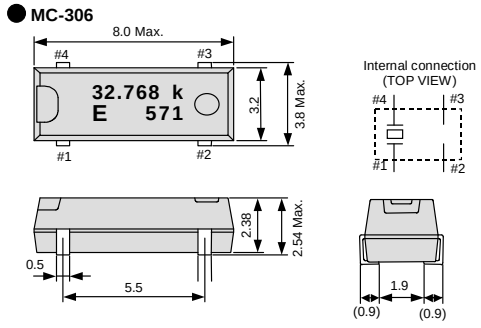
Specifications (characteristics)

Item		Symbol	Specifications		Remarks
Nominal frequency range		f_nom	32.768 kHz	20 kHz to 165 kHz 307.2 kHz(MC-405 / 406)	Please contact us 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.		
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	6 pF to ∞ (standard :12.5 pF)		Please specify
Motional resistance (ESR)		R_1	50 kΩ Max.	55 kΩ to 6 kΩ	As per below table
Motional capacitance		C_1	1.8 fF Typ.	4.0 fF to 0.6 fF	MC-306
			2.0 fF Typ.		MC-405 / 406
Shunt capacitance		C_0	0.9 pF Typ.	2.0 pF to 0.6 pF	MC-306
			0.85 pF Typ.		MC-405 / 406
Frequency aging		f_age	±3 × 10^{-6} / year Max.	±5 × 10^{-6} / year Max.	+25 °C, First year

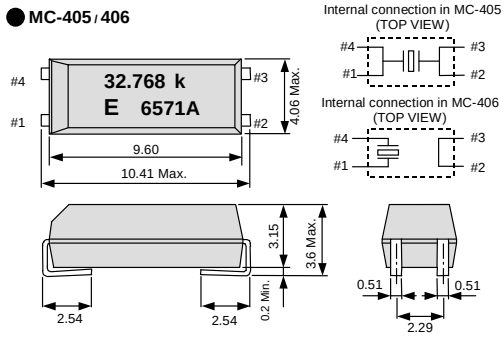
Motional resistance (ESR)

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	307.2 kHz
Motional resistance	55 kΩ Max.	35 kΩ Max.	20 kΩ Max.	12 kΩ Max.	10 kΩ Max.	6 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.



Do not connect #2 and #3 of MC-406 to external device.

The first digit of No. means: 5×××× MC-405
6×××× MC-406

Footprint (Recommended) (Unit:mm)