



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 mm ...MC-306
10.41 × 4.06 × 3.6 mm ...MC-405 / 406
- Overtone order : Fundamental
- Applications : Clock and Microcomputer



Product Number (please contact us)

MC-306 : Q1xMC3061xxxx00

MC-405 : Q1xMC4051xxxx00

MC-406 : Q1xMC4061xxxx00



Actual size

MC-306



MC-405 / 406



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}	±20 × 10 ⁻⁶ , ±50 × 10 ⁻⁶	±50 × 10 ⁻⁶ , ±100 × 10 ⁻⁶	+25 °C, DL=0.1 μW
Turnover temperature	T _i	+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.	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

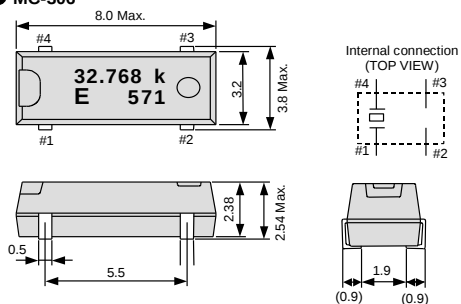
Motional resistance (ESR)

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
Motional resistance	55 kΩ Max.	35 kΩ Max.	20 kΩ Max.	12 kΩ Max.	10 kΩ Max.

External dimensions

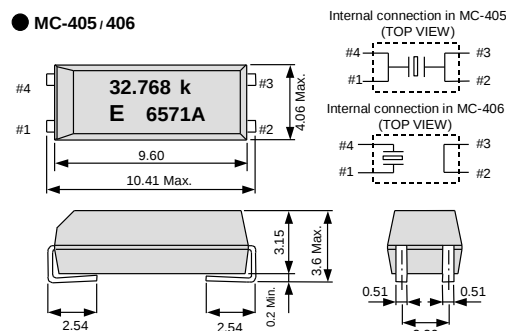
(Unit:mm)

MC-306



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.

MC-405 / 406



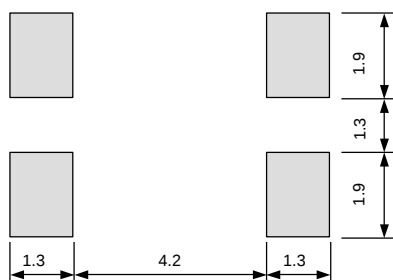
Do not connect #2 and #3 of MC-406 to external device.

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

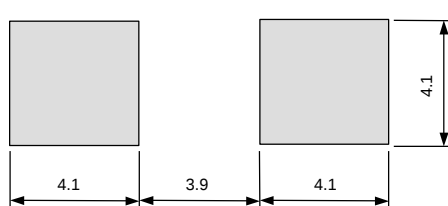
Footprint (Recommended)

(Unit:mm)

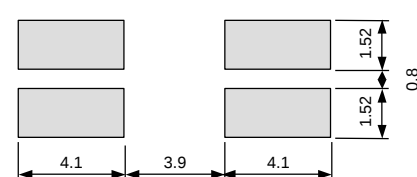
MC-306



MC-405



MC-406



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Epson:

[MC-405 32.7680K-E:RoHS](#) [MC-406 32.768K-A3:ROHS](#) [MC-306 32.7680K-A0:ROHS](#) [MC-306 32.768K-E3:ROHS](#)
[MC-405 32.7680K-A0:ROHS](#)