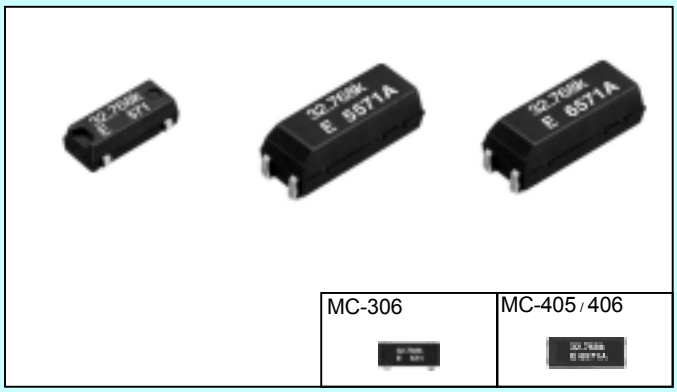
SMD LOW / MEDIUM-FREQUENCY CRYSTAL UNIT

MC - 306 / 405 / 406

Product number (please contact us)

MC-306 : Q1xMC3061xxxx00
MC-405 : Q1xMC4051xxxx00
MC-406 : Q1xMC4061xxxx00

- •Frequency range : 32.768 kHz (20 kHz to 165 kHz)
- •Thickness : 2.54 mm Max.(MC-306)
  3.60 mm Max.(MC-405/406)
- •Overtone order : Fundamental
- •Applications : Clock and Microcomputer
- •Lead(Pb)-free : Complies with EU RoHS directive



Actual size

■ Specifications (characteristics)

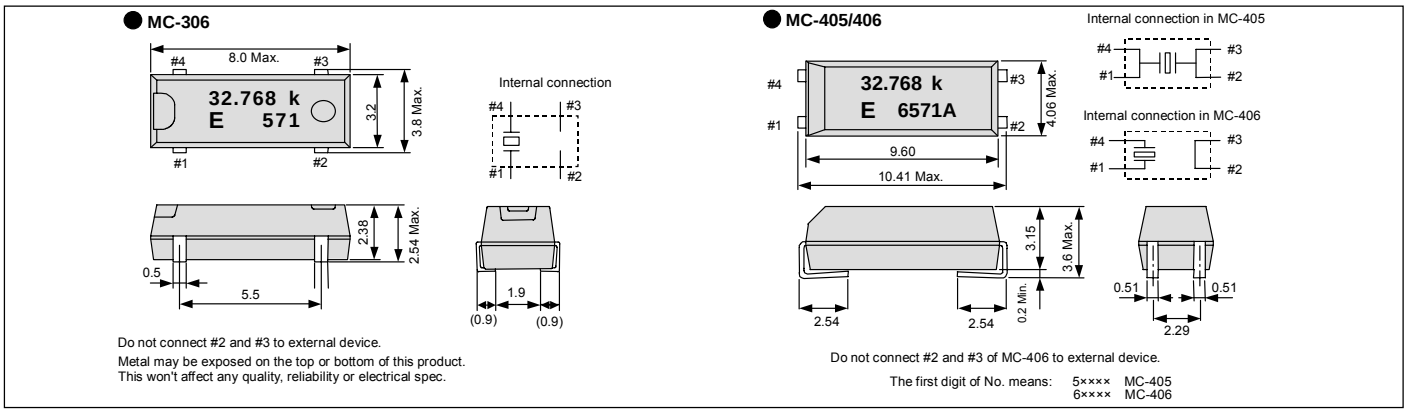
Item		Symbol	Specifications		Remarks
Nominal frequency range		f	32.768 kHz	20 kHz to 165 kHz	please contact us for inquiries about the available frequency
Temperature range	Storage temperature	TSTG	-55 °C to +125 °C		Stored as bare product after unpacking
	Operating temperature	TUSE	-40 °C to +85 °C		
Maximum drive level		GL	1.0 µW Max.		
Frequency tolerance (standard)		Δf/f	±20 × 10^{-6}, ±50 × 10^{-6}	±50 × 10^{-6}, ±100 × 10^{-6}	Ta=+25 °C, DL=0.1 µW
Peak temperature (frequency)		θT	+25 °C ±5 °C		
Temperature coefficient (frequency)		a	-0.04 × 10^{-6} / °C^2 Max.		
Load capacitance		CL	6 pF to ∞ (standard :12.5 pF)		Please specify
Series resistance		R1	50 kΩ Max.	55 kΩ to 10 kΩ	
Motional capacitance		C1	1.8 fF Typ.	4.0 fF to 0.6 fF	MC-306
			2.0 fF Typ.		MC-405/406
Shunt capacitance		C0	0.9 pF Typ.	2.0 pF to 0.6 pF	MC-306
			0.85 pF Typ.		MC-405/406
Insulation resistance		IR	500 MΩ Min.		
Aging		fa	±3 × 10^{-6} / year Max.	±5 × 10^{-6} / year Max.	Ta=+25 °C ±3 °C,first year
Shock resistance		S.R.	±5 × 10^{-6} Max.		Three drops on a hard board from 750 mm or excitation test with 29400 m/s^2 x 0.3 ms x 1/2 sine wave x 3 directions

■ Series resistance

Frequency	20 kHz≤f< 31.2 kHz	31.2 kHz≤f< 40 kHz	40 kHz≤f< 90 kHz	90 kHz≤f< 130 kHz	130 kHz≤f≤165 kHz
Series resistance	55 kΩ Max.	35 kΩ Max.	20 kΩ Max.	12 kΩ Max.	10 kΩ Max.

■ External dimensions

(Unit:mm)



■ Recommended soldering pattern

(Unit:mm)