kHz RANGE CRYSTAL UNIT

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



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







Actual size

MC-306

MC-405 / 406



32.768k E 6571A

Specifications (characteristics)

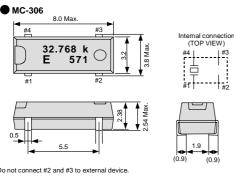
Item		Symbol	Specifications		Remarks	
Nominal frequency range		f_nom	32.768 kHz	20 kHz to 165 kHz 307.2 kHz(MC-405/406)	Please contact us regarding available frequencies	
Temperature	Storage temperature	T_stg	-55 °C to +125 °C		Store as bare product after unpacking	
range	Operating temperature	T_use	-40 °C to +85 °C			
Level of drive		DL	1.0 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 ±5 °C			
Parabolic coefficient		В	-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 k Ω to 6 k Ω	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.	4.0 IF 10 0.6 IF	MC-405 / 406	
Shunt capacitance		C ₀	0.9 pF Typ.	20 nF to 06 nF	MC-306	
			0.85 pF Typ.		MC-405 / 406	
Frequency aging		f_age	$\pm 3 \times 10^{-6}$ / year Max.	$\pm 5 \times 10^{-6}$ / 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: 5xxxx MC-405
6xxx MC-406

Footprint (Recommended)

(Unit:mm)

