Crystal unit

SEIKO EPSON CORPORATION

(Unit:mm)

(Unit:mm)

Internal connection in MC-405 (TOP VIEW) #4 #1 #1 #2

Internal connection in MC-406 (TOP VIEW)

2.29

‴<u></u>∔==

#3

#2

0.51

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]#2

0.2 Min

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

2 54

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

Max

00

8.6 Max

#4



Item	Symbol	Speci	fications	Conditions / Remarks	
Nominal frequency range	f_nom	32.768 kHz	20 kHz to 120 kHz	Please contact us about available frequencies.	
Storage temperature	T_stg	-55 °C 1	to +125 °C	Storage as single product.	
Operating temperature	T_use	-40 °C	to +85 °C		
Level of drive	DL	1.0 µ	W Max.		
Frequency tolerance (standard)	f_tol	$\pm 20 \times 10^{-6}, \pm 50 \times 10^{-6}$	$^{-6}, \pm 50 \times 10^{-6}$ $\pm 50 \times 10^{-6}, \pm 100 \times 10^{-6}$ +25 °C, DL=0.1 μ W		
Turnover temperature	Ti	+25 °	°C ±5 °C		
Parabolic coefficient	В	-0.04 × 10	0 ⁻⁶ / °C² Max.		
Load capacitance	CL	6 pF to ∞ (sta	andard :12.5 pF)	Please specify	
Motional resistance (ESR)	R1	50 kΩ Max.	As per table below		
Motional capacitance	C1	1.8 fF Typ.	4.0 fF to 0.6 fF	MC-306	
	C1	2.0 fF Typ.	4.0 IF 10 0.6 IF	MC-405 / 406	
Shunt capacitance	Co	0.9 pF Typ.		MC-306	
	C0	0.85 pF Typ.	2.0 pF to 0.6 pF	MC-405 / 406	
Frequency aging	f_age	$\pm 3 \times 10^{-6}$ / year Max.	\pm 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≤120 kH	z
Motional resistance	55 kΩ Max.		35 kΩ Max.		20 kΩ Max.		12 kΩ Max.	
Product name	MC-306	32.768000kHz	12.5	+20.0-20.0				
(Standard form)	1	2	3	4				

① ② ③ ①Model ②Frequency ③Load o

② ③ ④ ②Frequency ③Load capacitance(pF) ④Frequency tolerance(× 10⁻⁶, +25 °C)

MC-405 / 406

2.54

#4

#1

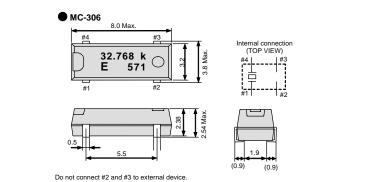
32.768 k

9.60

10.41 Max

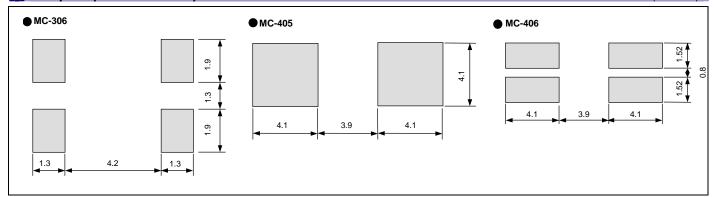
E 6571A

External dimensions



The metal case inside of the molding compound may be exposed on the top or bottom of this product. This purely cosmetic and does not have any effect on quality, reliability or electrical specs.

Footprint (Recommended)



PROMOTION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONFORMING TO INTERNATIONAL STANDARDS

At Seiko Epson, all environmental initiatives operate under the Plan-Do-Check-Action (PDCA) cycle designed to achieve continuous improvements. The environmental management system (EMS) operates under the ISO 14001 environmental management standard.

All of our major manufacturing and non-manufacturing sites, in Japan and overseas, completed the acquisition of ISO 14001 certification.

WORKING FOR HIGH QUALITY

In order provide high quality and reliable products and services than meet customer needs,

Seiko Epson made early efforts towards obtaining ISO9000 series certification and has acquired ISO9001 for all business establishments in Japan and abroad. We have also acquired ISO/TS 16949 certification that is requested strongly by major automotive manufacturers as standard.

Explanation of the mark that are using it for the catalog

ISO 14000 is an international standard for environmental management that was established by the International Standards Organization in 1996 against the background of growing concern regarding global warming, destruction of the ozone layer, and global deforestation.

ISO/TS16949 is the international standard that added the sector-specific supplemental requirements for automotive industry based on ISO9001.

Pb Free	► Pb free.
RoHS	 Complies with EU RoHS directive. *About the products without the Pb-free mark. Contains Pb in products exempted by EU RoHS directive. (Contains Pb in sealing glass, high melting temperature type solder or other.)
For Automotive	► Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
Automotive Safety	► Designed for automotive applications related to driving safety (Engine Control Unit, Air Bag, ESC etc).

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Mouser Electronics

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Epson:

 MC-306 32.7680K-A:ROHS
 MC-306 32.7680K-A0: PURE SN
 MC-306 32.7680K-A3:ROHS
 MC-306 32.7680K-AC3:

 ROHS
 MC-306 32.7680K-AE0: ROHS
 MC-306 32.7680K-E0: PURE SN
 MC-306 32.7680K-E0: ROHS
 MC-306

 32.7680K-E3: PURE SN
 MC-306 32.7680K-E3: ROHS
 MC-306 32.7680K-A0: ROHS
 MC-306
 32.7680K-E3: ROHS