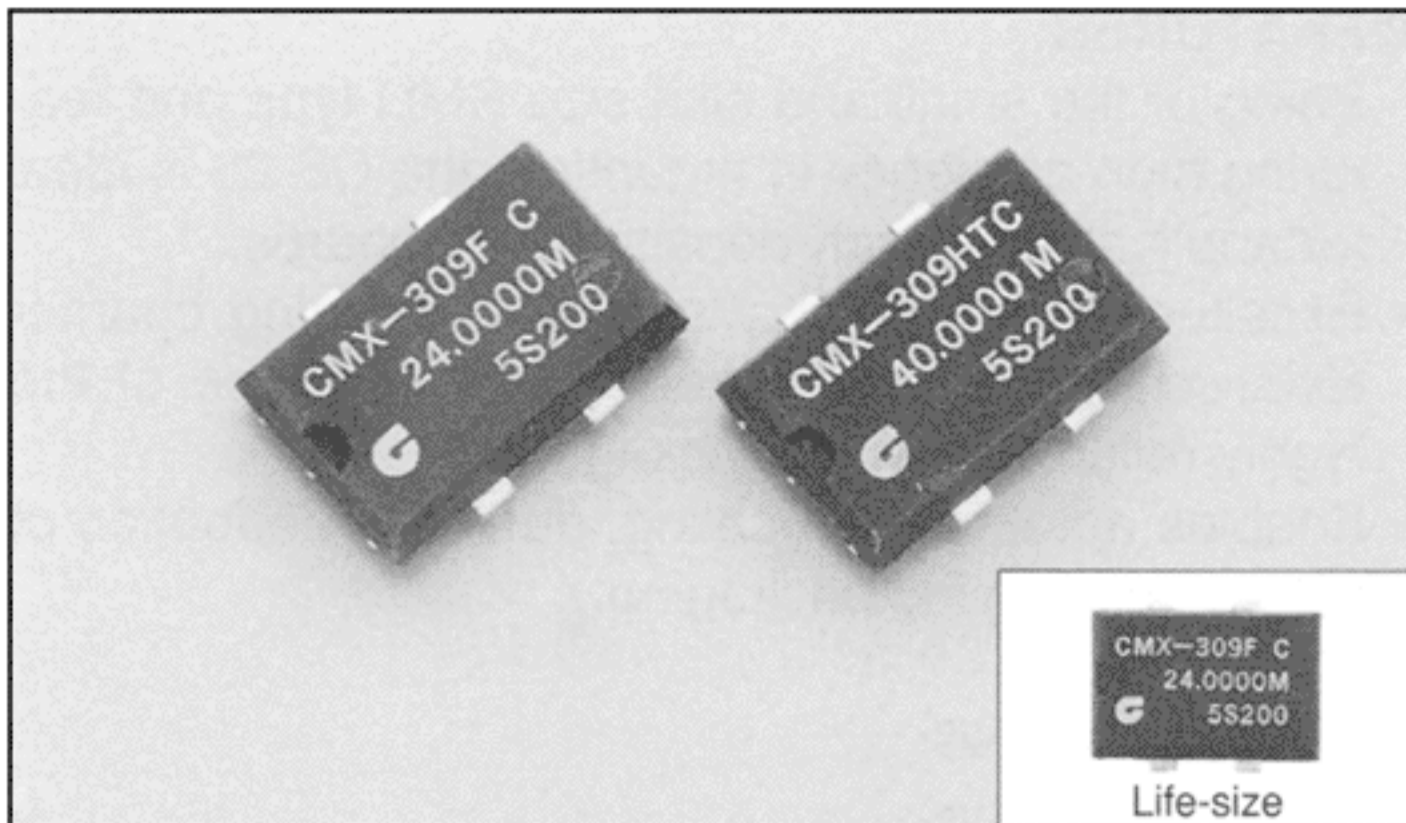


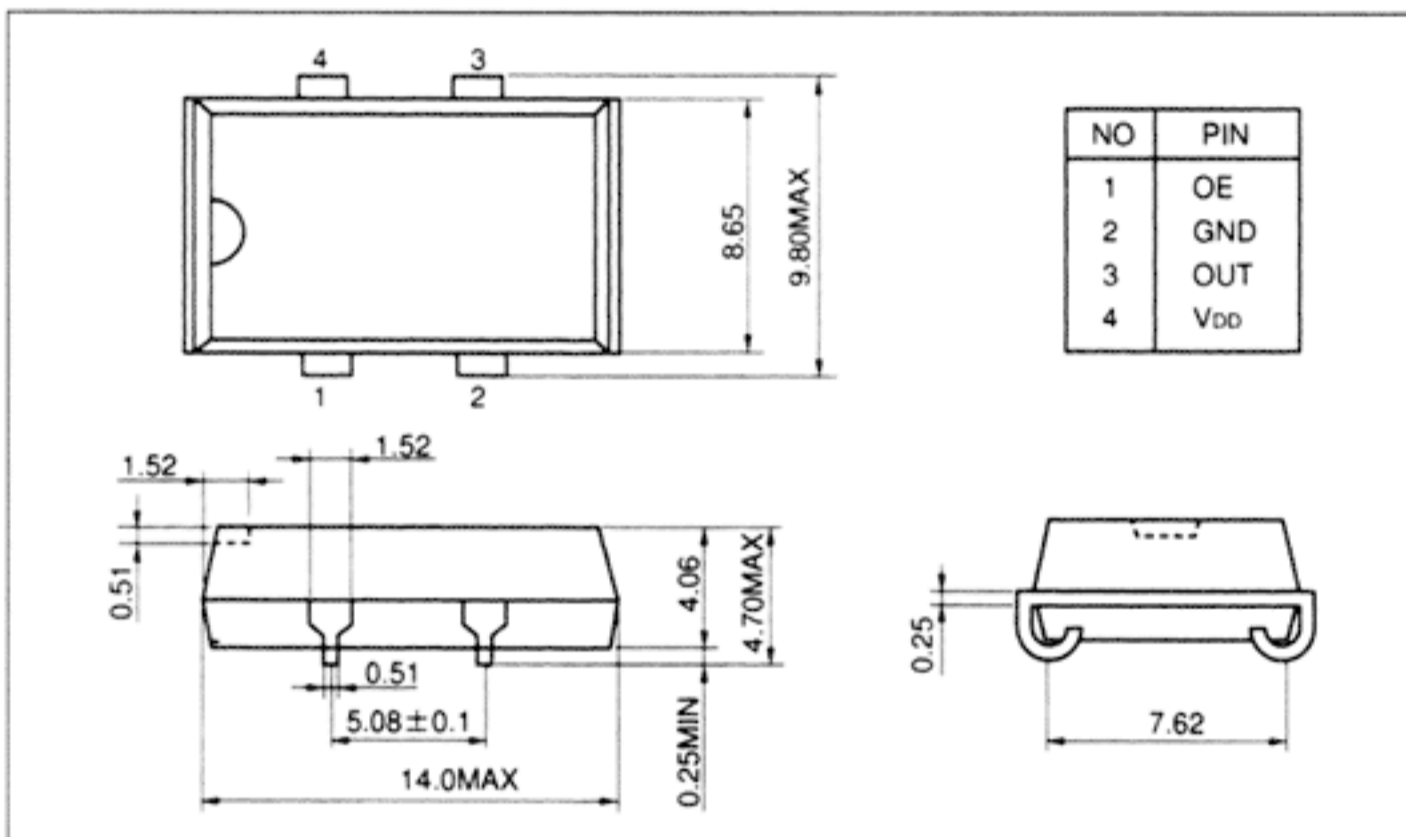
# CRYSTAL CLOCK OSCILLATOR (PLASTIC SURFACE MOUNT TYPE)

# CITIZEN<sup>®</sup>

## CMX-309 SERIES (1,000pcs/reel)



### ■ DIMENSIONS: (UNIT=mm)



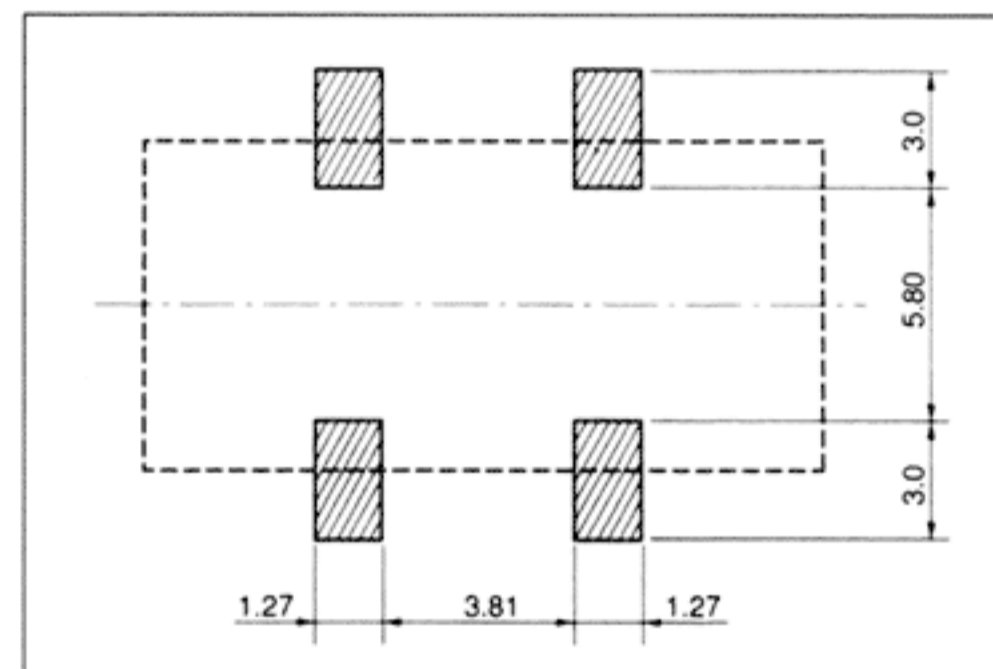
### ■ FEATURES:

- Being of the miniature plastic SMD type and featuring high efficiency in mounting, the CMX-309 is ideal for application to high-density circuit boards.
- As it incorporates a heat-resisting packaged cylinder-type crystal, it features highly stable characteristics-high enough to permit reflow soldering.
- Can be mounted automatically because of the emboss taping used.
- Low power CMOS IC.
- Provided with output enable function.

### ■ APPLICATIONS:

- Can be used for a wide range of applications including use in communication equipment, AV equipment, OA equipment and measuring instruments.

### ■ RECOMMENDED SOLDERING PATTERN: (UNIT=mm)



### ■ STANDARD SPECIFICATIONS

Item	Model	CMX-309FL (FS)	CMX-309HW (HS)	CMX-309FB (FA)	CMX-309HB (HA)
Frequency range		1.000MHz~ 30.000MHz	30.001MHz~ 70.000MHz	1.000MHz~ 30.000MHz	30.001MHz~ 70.000MHz
Frequency stability		C: ±100ppm B: ±50ppm (−20°C~+70°C)			
Operating temperature range		−20°C~+70°C (−40°C~+85°C)			
Storage temperature range		−55°C~125°C			
Supply voltage		V <sub>DD</sub> : 5.0V±0.5V		V <sub>DD</sub> : 3.3V±0.3V	
Supply current		23mA MAX.	35mA MAX.	9mA MAX.	20mA MAX.
Duty	TTL level (1.4V) CMOS level (V <sub>DD</sub> )	45%~55% (FS, HS: 40%~60%) 40%~60% (FS, HS: 45%~55%)		— 40%~60% (FA, HA: 45%~55%)	
Output voltage	V <sub>OH</sub> V <sub>OL</sub>	0.9V <sub>DD</sub> MIN. 0.4V MAX.		0.9V <sub>DD</sub> MIN. 0.1V <sub>DD</sub> MAX.	
Output load	TTL CMOS	10TTL MAX. 50pF MAX.		— 30pF MAX.	
Rise & Fall time (tr, tf)	TTL CMOS	8nsec MAX. 8nsec MAX.	5nsec MAX. 7nsec MAX.	— 6nsec MAX.	
Start up time		4msec MAX.	10msec MAX.	4msec MAX.	10msec MAX.
Input (OE) voltage		V <sub>IH</sub> : 2.0V MIN. V <sub>IL</sub> : 0.8 MAX.			V <sub>IH</sub> : 2.4V MIN. V <sub>IL</sub> : 0.6V MAX.
Disable current		12mA MAX.	28mA MAX.	5mA MAX.	15mA MAX.
Aging (First year)		±5ppm/year MAX.			
Shock resistance		±20ppm MAX. Drop test of 3 times on a hard board from 75cm height or shock test of 3000G x 0.3ms x 1/2 sin wave x 3 directions			