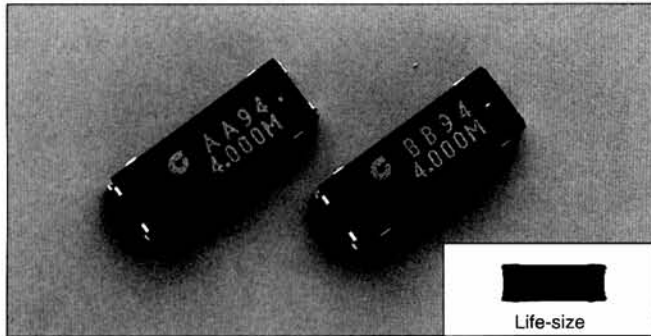
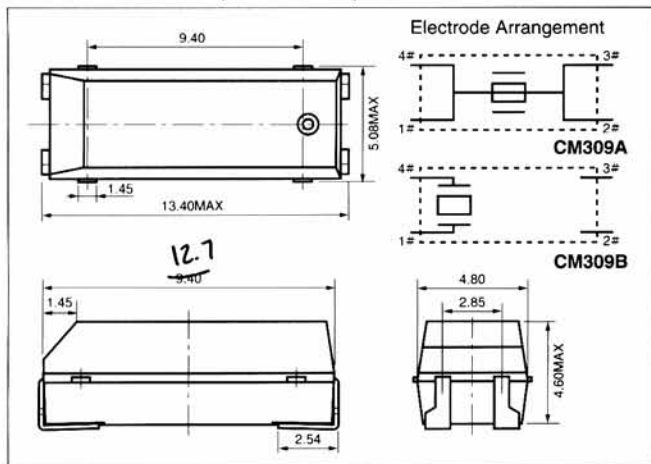


MHz RANGE CRYSTAL UNITS (PLASTIC SURFACE MOUNT TYPE)

CM309A/CM309B (1,000pcs/reel)



■ DIMENSIONS: (UNIT=mm)



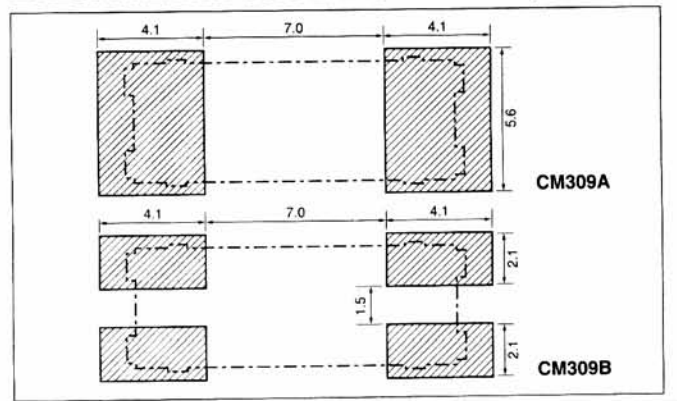
■ FEATURES:

- Being of the miniature SMD type and featuring high efficiency in mounting, the CM309S is ideal for application to high-density circuit boards.
- As it incorporates a heat-resisting packaged cylinder-type crystal, this crystal makes best use of the superb characteristic AT-cut crystals have, and permits reflow soldering.
- Enables automatic mounting, due to the adoption of the emboss taping packaging.

■ APPLICATIONS:

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

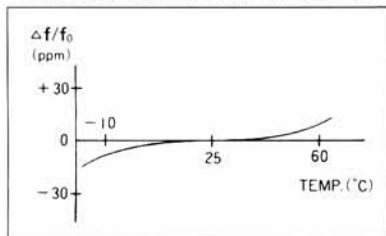
■ RECOMMENDED SOLDERING PATTERN: (UNIT=mm)



■ STANDARD SPECIFICATIONS

Item	Model	CM309A/CM309B	Conditions
Nominal frequency	f ₀	3.5MHz~32MHz (fund), 30MHz~70MHz (3rd OT)	Please contact us for changes in frequency.
Frequency tolerance	Δf/f ₀	±30ppm or ±50ppm	At 25°C
Frequency vs. Temperature characteristics	Δf/f ₀	±50ppm (±30ppm)	-10°C~+60°C
Operating temperature range	T _{ORP}	-40°C~+85°C	
Storage temperature range	T _{STG}	-55°C~+125°C	
Equivalent series resistance	R ₁	See drawing	At 25°C
Load capacitance	C _L	16pFTYP	Please specify
Shunt capacitance	C ₀	7.0pF MAX.	
Drive level	DL	50μW~100μW	
Insulation resistance	IR	500MΩ MIN.	DC100V±15V
Aging (First year)	Δf/f ₀	±5ppm MAX.	25°C±3°C
Sealing		1 x 10 ⁻² μPa·m ³ /s MAX.	
Shock resistance		±5ppm 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	Conditions will vary depending on the frequency.

FREQUENCY vs TEMPERATURE CURVE



EQUIVALENT SERIES RESISTANCE (ESR, R₁)

Frequency	Equivalent series resistance	Mode
3.5MHz ≤ f ₀ < 4MHz	200	fundamental
4MHz ≤ f ₀ < 6MHz	150	
6MHz ≤ f ₀ < 10MHz	100	
10MHz ≤ f ₀ ≤ 32MHz	50	3rd OT
30MHz < f ₀ < 36MHz	100	
36MHz ≤ f ₀ < 70MHz	80	

(Ω MAX.)