

CM130 Preliminary

(3,000pcs/reel)



■ FEATURES:

- Being of the ultra-miniature SMD type, and thus featuring excellent efficiency in mounting, the CM130 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.
- Its low power consumption makes it ideal for application to portable equipment as well as high density, cellular phone designs.

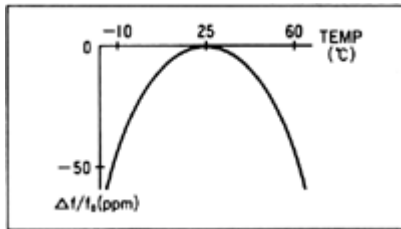
■ APPLICATIONS:

- Permits use as a clock source for communication equipment, AV equipment, OA equipment, camera, cellular phones, pagers and measuring instruments.

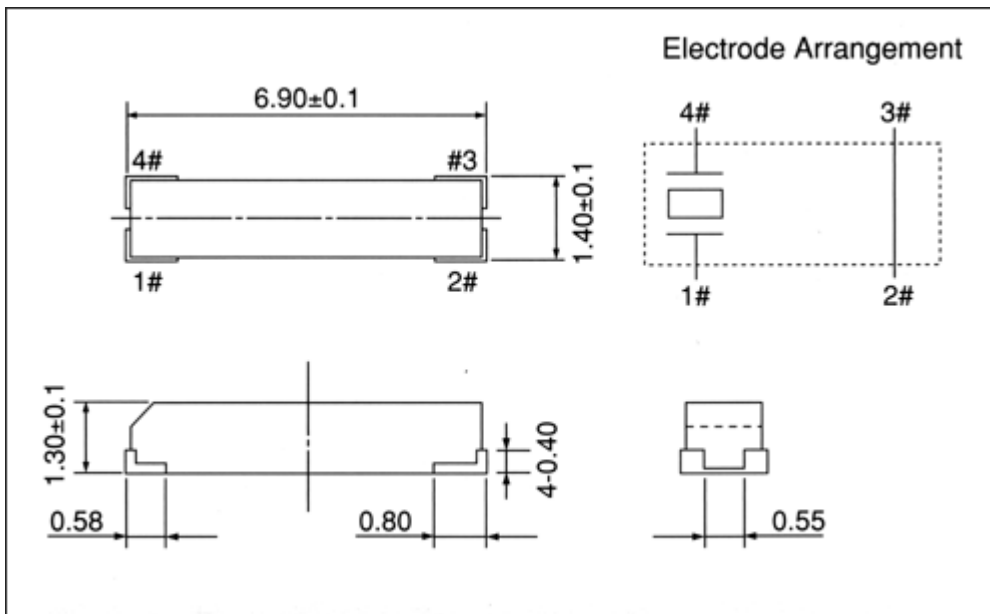
■ STANDARD SPECIFICATIONS

| Item | | CM130 | Conditions |
|---|----------------|---|--|
| Nominal frequency | f_0 | 32.768kHz | |
| Frequency tolerance | $\Delta f/f_0$ | $\pm 20\text{ppm}$ | Reference temperature |
| Frequency vs. Temperature Characteristics | $\Delta f/f_0$ | See drawing | -10°C to $+60^\circ\text{C}$ |
| Turnover temperature | T_m | $25^\circ\text{C} \pm 5^\circ\text{C}$ | |
| Freq. temp. coefficient | beta | $-0.034 \pm 0.006\text{ppm}/^\circ\text{C}^2$ | |
| Operating temperature range | T_{opr} | -40°C to $+85^\circ\text{C}$ | |
| Storage temperature range | T_{stg} | -55°C to $+125^\circ\text{C}$ | |
| Equivalent series resistance | R_1 | 65k ohm MAX. | Reference temperature |
| Load capacitance | C_L | 12.5pF TYP. | Please specify |
| Motional capacitance | C_1 | 0.0023pF TYP. | |
| Shunt capacitance | C_0 | 1.2pF TYP. | |
| Capacitance ratio | gamma | 520 TYP. | |
| Drive level | DL | 1 μW MAX. | |
| Insulation resistance | IR | 500M ohm MIN. | DC100V $\pm 15\text{V}$ |
| Aging (First year) | $\Delta f/f_0$ | $\pm 3\text{ppm MAX.}$ | $25^\circ\text{C} \pm 3^\circ\text{C}$ |
| Sealing | | $1 \times 10^{-2} \mu\text{Pa}\cdot\text{m}^3/\text{s}$ MAX. | |
| Shock resistance | | $\pm 5\text{ppm MAX.}$ Drop test of 3 times on a hard board from 75cm height or shock test of 3000G x 0.3ms x 1/2sin wave x 3 directions | |

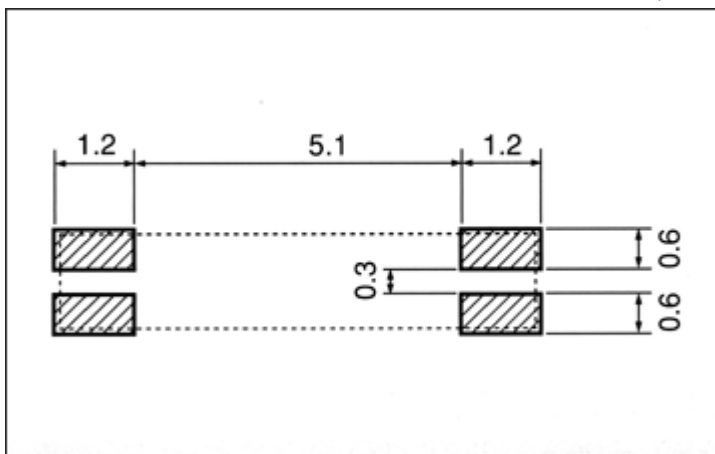
■ FREQUENCY vs TEMPERATURE CURVE



■ DIMENSIONS: (UNIT=mm)



■ RECOMENDED SOLDERING PATTERN: (UNIT=mm)



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