

Cylindrical 'watch' crystal

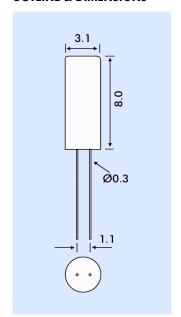
- An industry-standard source of 32.768kHz clock signals
- Fully RoHs compliant
- Excellent shock resistance and environmental capability
- A high build quality component at low cost



SPECIFICATION

| Frequency: | 32.7680kHz | | |
|--------------------------------|--|--|--|
| Calibration Tolerance at 25°C: | from ±5ppm to ±50ppm | | |
| Temperature Coefficient: | Inverse Parabolic -0.035 ppm/°C2 | | |
| Peak Temperature: | 25°C ±5°C | | |
| Operating Temperature Range: | -40 to +85° | | |
| Storage Temperature: | -55°∼+105°C | | |
| Effective Series Resistance: | 45kΩ max. | | |
| Shunt Capacitance (C0): | 0.8pF typical | | |
| Motional Capacitance: | 4.0fF max. | | |
| Load Capacitance (CL): | 6pF or12.5pF | | |
| Ageing: | <±5ppm per year at +25°C | | |
| Maximum Drive level: | 1.0 microW max. | | |
| Reflow Soldering: | 10s maximum at 250°C twice | | |
| | or 180s at 230°C, once. | | |
| Insulation Resistance: | 100MΩ min. | | |
| Shock Resistance: | ±5ppm max. (Drop test 3 times onto a hard board from 75cm) | | |

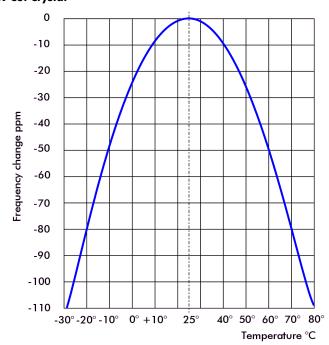
OUTLINE & DIMENSIONS



STOCK NUMBERS/SPECIFICATIONS

| Stock Number | Frequency | Calibration | CL (pF) |
|--------------|-----------|-------------|---------|
| MH32768A | 32.768kHz | ±15ppm | 12.5 |
| MH32768B | 32.768kHz | ±20ppm | 12.5 |
| MH32768M | 32.768kHz | ±5ppm | 12.5 |
| MH32768P | 32.768kHz | ±5ppm | 6.0 |

Frequency Change vs. Temperature X-Cut Crystal



Function = $\Delta f/Fo = -0.035(T - To)^2 \pm 10\%$