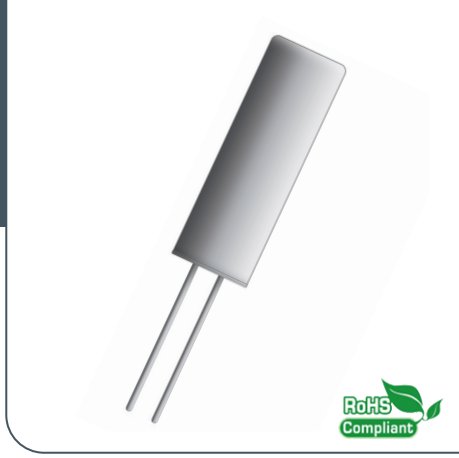
QTM38T Series

3.0x8.0 Metal Cylindrical Tuning Fork



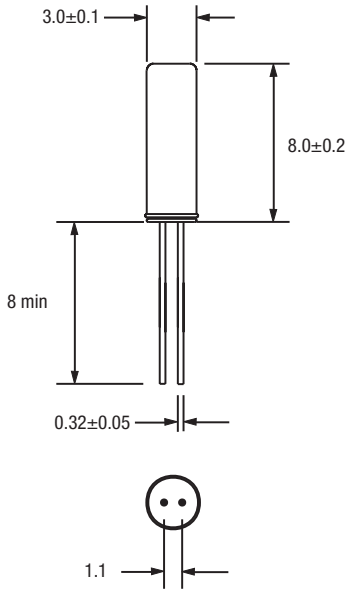
Features

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

General Specifications

Nominal Frequency	32.768 kHz
Frequency Tolerance at 25°C	±20ppm
Temperature Coefficient	-0.034ppm/Δ °C²
Temperature Range (Operating)	-40 to +85°C
Storage Temperature	-55 to +125°C
Load Capacitance C_L	6.0pF, 12.5pF
Shunt Capacitance C_0	1pF typ.
Motional Capacitance C_1	2.5fF typ.
Equivalent Series Resistance (ESR)	50KΩ max.
Drive Level	1µW max.
Aging per Year	±3ppm max.
Insulation Resistance (M Ω)	500mΩ min.
Quality Factor	80000 typ.
Capacitance Ratio	400 typ.
Resistance to Shock	±5ppm maximum offset from 75cm drop test in all axes on to a hard surface
Turnover Temperatur	25°C ±5°C

Mechanical Dimensions



Part Numbering Guide

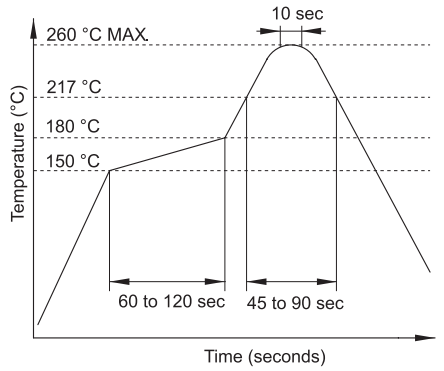
Qantek Code	Package	Nominal Frequency (in kHz)	Load Capacitance	Operating Temperature Range	Frequency Tolerance	Packaging
Q = Qantek	TM38T = 3.0x8.0 Metal THT	32.768	06 = 6pF **12 = 12.5pF**	**B = -40 to +85°C**	**2 = ±20ppm**	B = Bulk (1000 pcs/bag)

Example: QTM38T32.76812B2B — bold letters = recommended standard specification

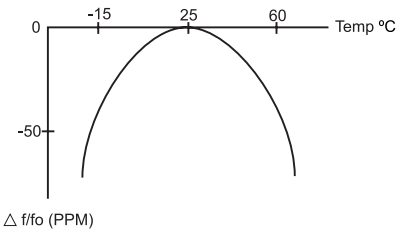
Marking Code Guide

Contains manufacturer code / lot code

Solder Reflow Profile



Frequency vs. Temperature Characteristics



To calculate the frequency stability the parabolic curvature constant (K) is needed.
Example: Calculating the stability at 45°C
1- Change in temperature (ΔT) is (45-25) = +20°C
2- Change in frequency is (-0.035 x (Δ°C)²) = (-0.035 x (20)²) = -13.6ppm

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