QTC2 Series

1.2x2.0 SMD Tuning Fork

Features

- Low frequency in smallest size SMD
- Seam sealed ceramic package offers excellent environmental & heat resistance
- Extended temperature -40 to +85°C for industrial applications

Applications

- Commercial and Industrial applications
- Wireless communications
- PDA and Smartphone
- Time of day applications

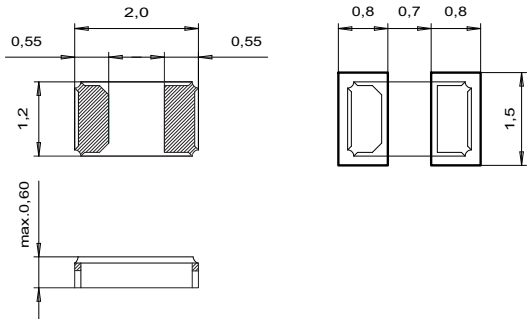
RoHS Compliant

Pb lead-free

General Specifications

Nominal Frequency	32.768kHz
Frenquency Tolerance at 25°C	±20ppm
Temperature Coefficient	-0.034 ± 0.008ppm/Δ °C²
Temperature Range (Operating)	-40 to +85°C
Storage Temperature	-55 to +125°C
Load Capacitance C_L	7pF, 9pF, 12.5pF
Shunt Capacitance C_0	1.0pF typ.
Motional Capacitance C_1	3.5fF typ.
Equivalent Series Resistance (ESR)	90KΩ max.
Drive Level	0.5μW max.
Aging per Year	±3ppm max.
Insulation Resistance (M Ω)	500 at 100Vdc ±15Vdc
Quality Factor	70000 typ.
Capacitance Ratio	450 typ.

Mechanical Dimensions



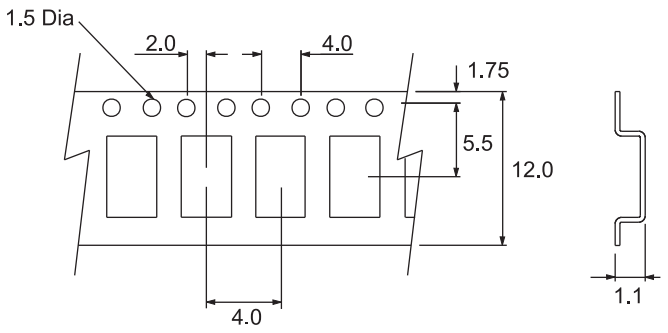
Part Numbering Guide

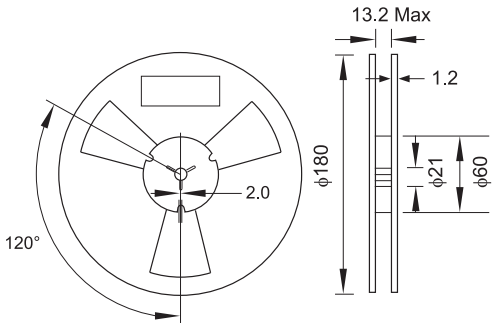
Qantek Code	Package	Nominal Frequency (in kHz)	Load Capacitance	Operating Temperature Range	Frequency Tolerance	Packaging
Q = Qantek	TC2 = 1.2x2.0 SMD Tuning Fork	32.768	07 = 7pF 09 = 9pF **12 = 12.5pF**	**B = -40 to +85°C**	1 = ±10ppm **2 = ±20ppm**	R = 3000pcs Tape&Reel

Example: QTC232.76812B2R

bold letters = recommended standard specification

Tape and Reel Dimensions





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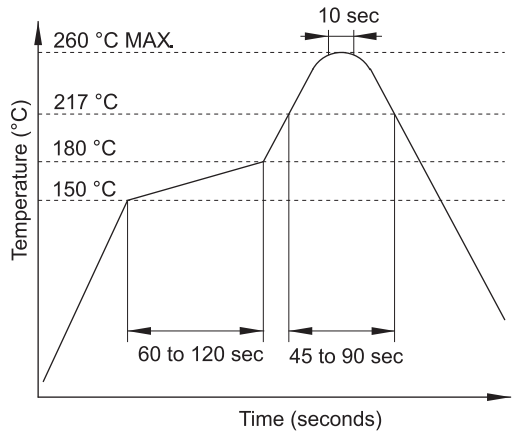
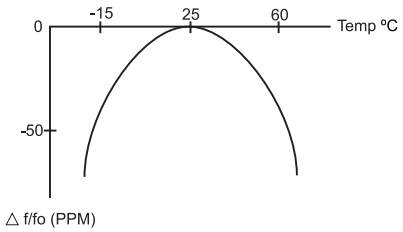
Marking Code Guide

Contains manufacturer code / lot code

Solder Reflow Profile



Frequency vs. Temperature Characteristics



To calculate the frequency stability the parabolic curvature constant (K) is needed.
For calculating the stability at 45°C?
1- Change in temperature (ΔT) is (45-25) = +20°C
2- Change in frequency is (-0.034 x (Δ°C)²) = (-0.035 x (20)² = -13.6ppm

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