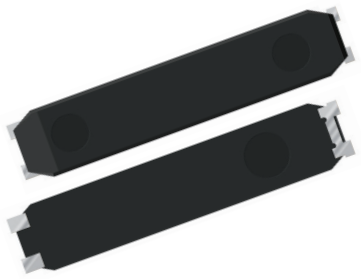
QTP7 Series

1.4x6.9 Plastic SMD Tuning Fork



RoHS Compliant

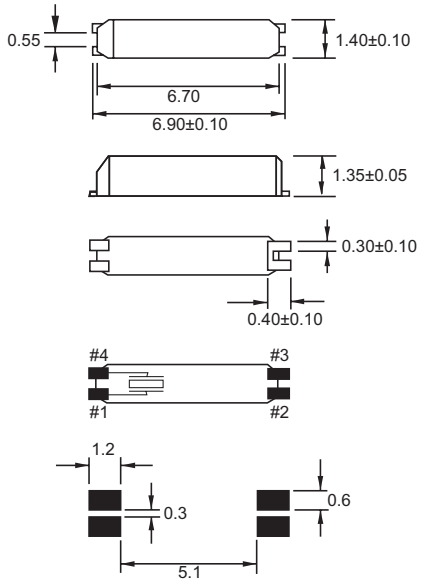
Features

- Most appropriate for high-density circuit board by the small surface mount type
- Embeded with heat resistant cylinder type crystal bring highly stable characteristics
- Suitable for small mobile telecommunication devices

General Specifications

Nominal Frequency		32.768 kHz
Frequency Tolerance at 25°C		±20ppm
Aging per Year		±3ppm max.
Turnover Temperature		25ºC ±5ºC
Temperature Coefficient		-0.034 ±0.006ppm/Δ ºC²
Temperature Range (Operating)		-40 to +85ºC
Storage Temperature		-55 to +125°C
Equivalent Series Resistance (ESR)		65KΩ max.
Load Capacitance C_L	Standard	12.5pF
	Optional	6.0pF, 7.0pF, 9.0pF
Shunt Capacitance C_0		1.8pF typ.
Motional Capacitance C_1		1.9fF typ.
Drive Level		1μW max.
Insulation Resistance (MΩ)		500 at 100Vdc ±15Vdc
Quality Factor		60.000 typ.
Capacitance Ratio		450 typ.
Resistance to Shock		±5ppm maximum offset from 75 cm drop test in all axes on to a hard surface.

Mechanical Dimensions



Pin Connection: **#1** Crystal, **#2** N/C, **#3** N/C, **#4** Crystal

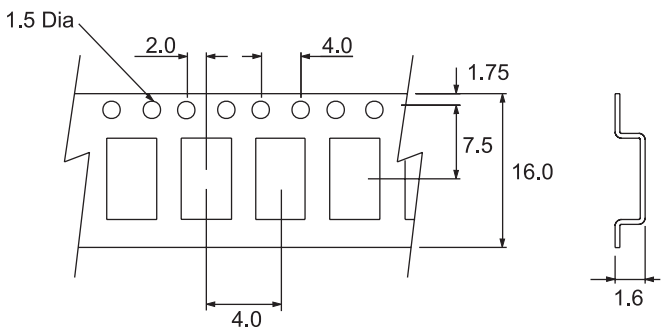
Part Numbering Guide

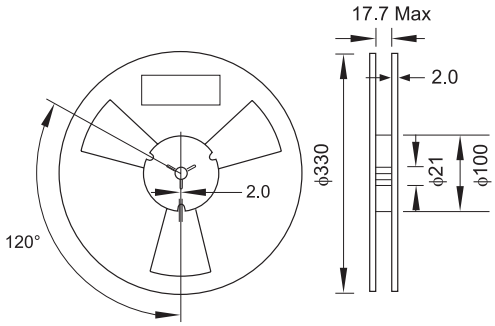
Qantek Code	Package	Nominal Frequency (in kHz)	Load Capacitance	Operating Temperature Range	Frequency Tolerance	Packaging
Q = Qantek	TP7 = 1.4x6.9 Plastic SMD	32.768	06 = 6pF 07 = 7pF 09 = 9pF **12 = 12.5pF**	**B = -40 to +85°C**	**20 = ±20ppm**	R = 3000pcs Tape&Reel

Example: QTP732.76812B20R

bold letters = recommended standard specification

Tape and Reel Dimensions





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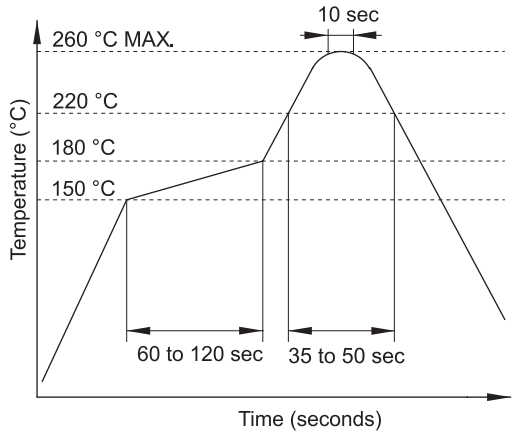
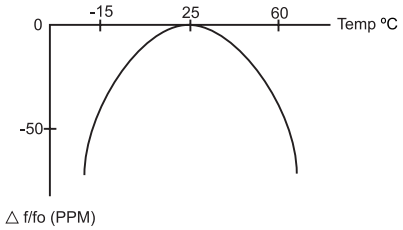
Marking Code Guide

Contains frequency

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) = (-0.034 x (20)²) = -13.6ppm

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