QC6B Series

3.5x6.0 2-Pad SMD Quartz Crystal Unit

RoHS Compliant

Pb lead-free

Features

- Low in height, suitable for thin equipment
- Ceramic package and metal lid assures high reliability
- Tight tolerance and stability available

Applications

- High density applications
- Modem, communication and test equipment
- PMCIA, wireless applications
- Automotive applications

General Specifications

Frequency Range		7.500 to 150.000MHz
Mode of Oscillation	Fundamental	8.000 to 40.000MHz
	Third Overtone	40.100 to 160.000MHz
Frequency Tolerance at 25°C		±10 to ±30ppm (±30ppm standard)
Frequency Stability over Temperature Range		See Stability vs. Temperature Table
Storage Temperature		-55 to +125°C
Aging per Year		±3ppm max.
Load Capacitance C_L		10 to 32pF and Series Resonance
Shunt Capacitance C_0		7.0pF max.
Equivalent Series Resistance (ESR)		See ESR Table
Drive Level		500µW max.
Insulation Resistance (MΩ)		500 at 100Vdc ±15Vdc

Equivalent Series Resistance (ESR)

Frequency Range - MHz	Ω max.	Mode of Operation
7.500 to 8.000	100	Fundamental
8.001 to 10.000	70	
10.001 to 14.000	60	
14.001 to 20.000	50	
20.001 to 40.000	40	
40.001 to 60.000	30	
30.001 to 48.000	100	Third Overtone
48.001 to 150.000	80	

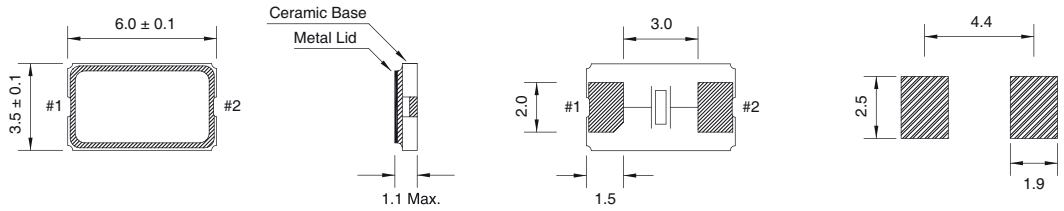
Frequency Stability vs. Temperature

Operating Temperature	±10ppm	±20ppm	±30ppm	±50ppm	±100ppm
-20 to +70°C	○	○	○	○	○
-40 to +85°C	○*	○	●	○	○
-40 to +105°C	-	-	-	○	○
-40 to +125°C	-	-	-	-	○

*Operating Temperature -30 to +80°C

● standard ○ available

Mechanical Dimensions



Part Numbering Guide

Qantek Code	Package	Nominal Frequency (in MHz)	Vibration Mode	Load Capacitance	Operating Temperature Range	Frequency Tolerance	Frequency Stability	Automotive Indicator	Packaging
Q = Qantek	C6B = 3.5x6.0 2-Pad SMD	7 digits including the decimal point (f.ie. 12.0000)	F = AT-Fund	S = Series 08 = 8pF **12 = 12pF** 18 = 18pF 20 = 20pF etc.	A = -20 to +70°C **B = -40 to +85°C** C = -40 to +105°C D = -40 to +125°C	1 = ±10ppm 2 = ±20ppm **3 = ±30ppm** 5 = ±50ppm 0 = ±100ppm	1 = ±10ppm 2 = ±20ppm **3 = ±30ppm** 5 = ±50ppm 0 = ±100ppm	A = AEC-Q200	M = 250pcs Tape&Reel R = 1000pcs Tape&Reel

Example: QC6B12.0000F12B33R

bold letters = recommended standard specification

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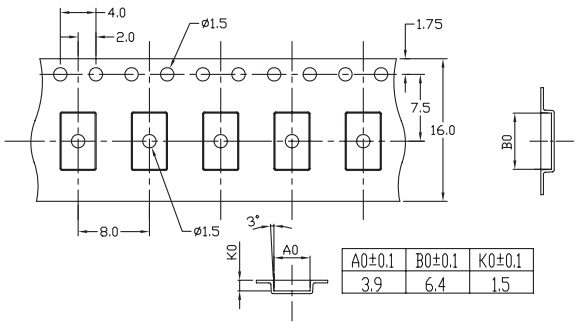
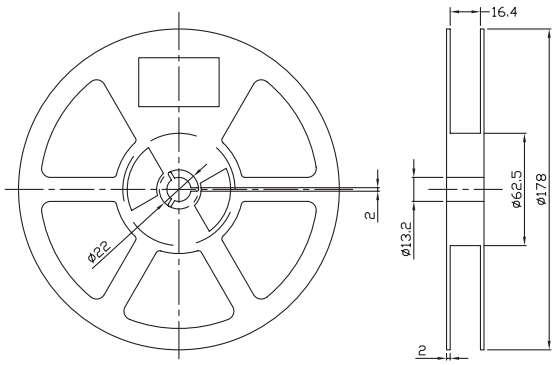
Tape and Reel Dimensions



A0±0.1	B0±0.1	K0±0.1
3.9	6.4	1.5



Marking Code Guide

Contains frequency, Qantek manufacturing code, production code (month and year) and load capacitance.

Month Codes

January	A	July	G
February	B	August	H
March	C	September	I
April	D	October	J
May	E	November	K
June	F	December	L

Year Codes

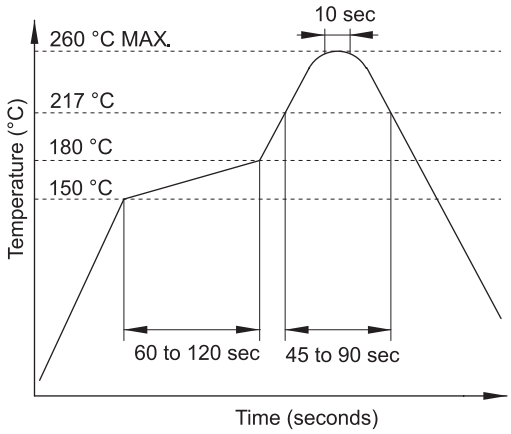
2018	8	2019	9	2020	0
2021	1	2022	2	2023	3
2024	4	2025	5	2026	6

Load Capacitance Code in pF

pF	PN Code	pF	PN Code
12	A	20	F
18	B	22	G
8	C	30	H
10	D	32	I
16	E	S	S

Example: First Line: 12.000 *(Frequency)* Second Line: QB9A *(Qantek - February - 2019 - 12 pF)*

Solder Reflow Profile



Environmental Specifications

Mechanical Shock	MIL-STD-202, Method 213, C
Vibration	MIL-STD-202, Method 201 & 204
Thermal Cycle	MIL-STD, Method 1010, B
Gross Leak	MIL-STD-202, Method 112
Fine Leak	MIL-STD-202, Method 112

All specifications are subject to change without notice.

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