QC6A Series

3.5x6.0 4-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		8.000 to 160.000MHz
Mode of Oscillation	Fundamental	8.000 to 40.000MHz
	Third Overtone	40.100 to 160.000MHz
Frenquency 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
8.000 to 12.000	80	Fundamental
12.100 to 16.000	60	
16.100 to 40.000	40	
40.100 to 160.000	70	Third Overtone

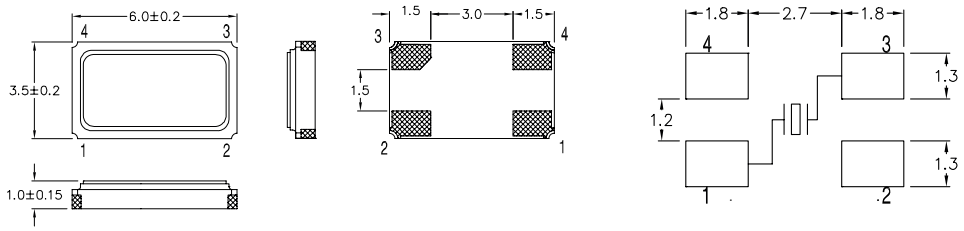
Frequency Stability vs. Temperature

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 +85°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	C6A = 3.5x6.0 4-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: QC6A12.0000F12B33R

bold letters = recommended standard specification

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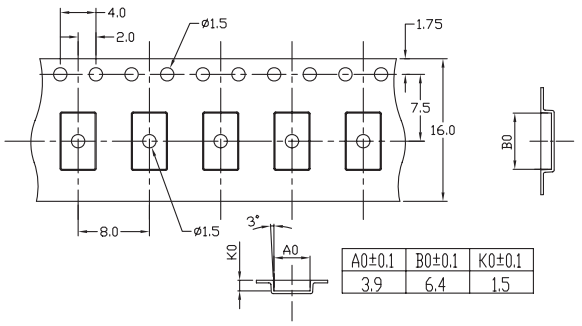
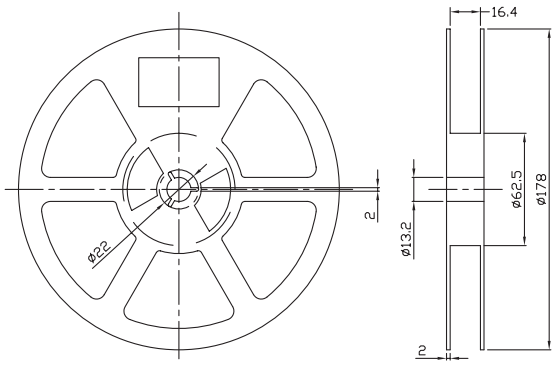
Tape and Reel Dimensions



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

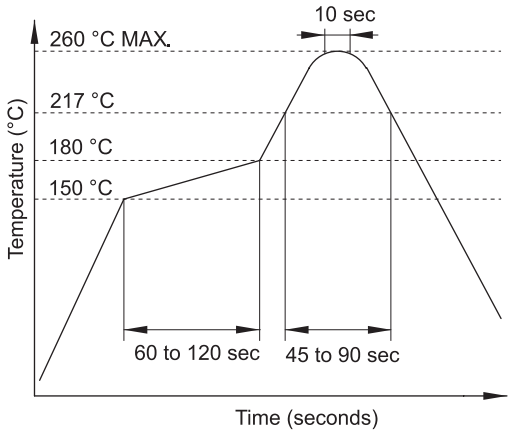
2013	3	2014	4	2015	5
2016	6	2017	7	2018	8
2019	9	2020	0	2021	1

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: QA5A *(Qantek - January - 2015 - 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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