

# QC5GB Series

## 3.2x5.0 2-Pad SMD Quartz Crystal Unit



### Features

- Low cost alternative to common seam seal packages
- RoHS compliant by exemption

### Applications

- Computer peripherals
- Set-top box, TV sets
- Office automation
- Audio & video

### General Specifications

Frequency Range	8.000 to 60.000MHz	
Mode of Oscillation	Fundamental	8.000 to 54.000MHz
	Third Overtone	40.000 to 60.000MHz
Frequency Tolerance at 25°C	±20 to ±50ppm (±30ppm standard)	
Frequency Stability over Temperature Range	See Stability vs. Temperature Table	
Storage Temperature	-55 to +125°C	
Aging per Year	±3ppm	
Load Capacitance $C_L$	8 to 32pF and Series Resonance	
Shunt Capacitance $C_0$	5.0pF max.	
Equivalent Series Resistance (ESR)	See ESR Table	
Drive Level	100µW TYP, 300µW max.	
Insulation Resistance ( $M\Omega$ )	500 at 100Vdc ±15Vdc	

### Equivalent Series Resistance (ESR)

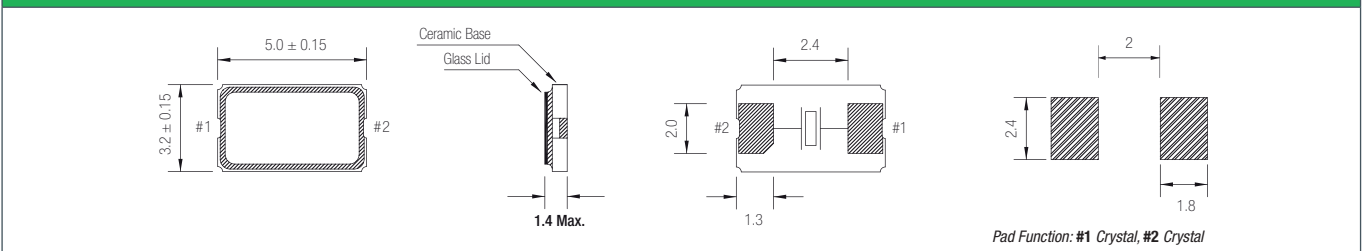
Frequency Range - MHz	$\Omega$ max.	Mode of Operation
8.000 to 10.000	180	Fundamental
10.000 to 16.000	150	
16.000 to 20.000	100	
20.000 to 30.000	80	
30.000 to 54.000	50	
40.000 to 60.000	120	Third Overtone

### Frequency Stability vs. Temperature

Operating Temperature	±20ppm	±30ppm	±50ppm	±100ppm
-20 to +70°C	○	○	○	○
-40 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	Packaging
Q = Qantek	C5GB = 3.2x5.0 2-Pad SMD	7 digits including the decimal point (f.i.e. 12.0000)	F = AT-Fund	S = Series 08 = 8pF <b>12 = 12pF</b> 18 = 18pF 20 = 20pF etc.	A = -20 to +70°C <b>B = -40 to +85°C</b>	2 = ±20ppm <b>3 = ±30ppm</b> 5 = ±50ppm 0 = ±100ppm	2 = ±20ppm <b>3 = ±30ppm</b> 5 = ±50ppm 0 = ±100ppm	M = 250pcs Tape&Reel R = 1000pcs Tape&Reel

Example: QC5GB12.0000F12B33R

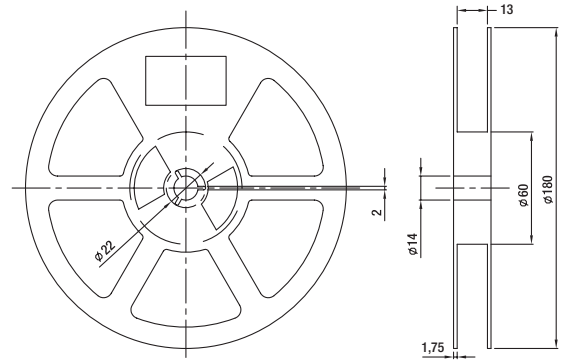
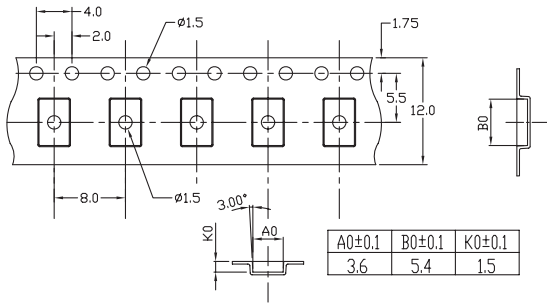
bold letters = recommended standard specification



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### Tape and Reel Dimensions



### 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

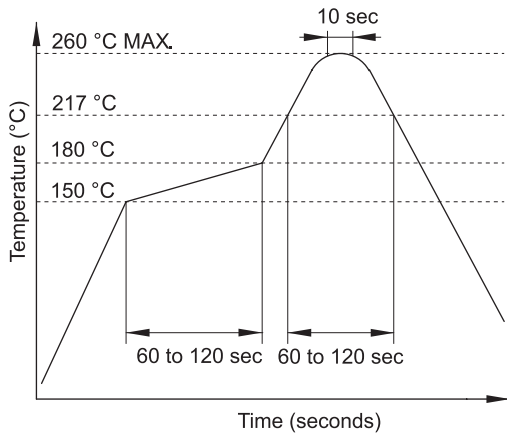
2010	0	2011	1	2012	2
2013	3	2014	4	2015	5

#### 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: QA1A (Qantek - January - 2011 - 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.

