

QC5B Series

3.2x5.0 2-Pad SMD Quartz Crystal Unit

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
- PCMCIA, wireless applications
- Automotive applications



General Specifications

Frequency Range	8.000 to 160.000MHz	
Mode of Oscillation	Fundamental	8.000 to 52.000MHz
	Third Overtone	40.000 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	
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	100µW typ.	
Insulation Resistance ($M\Omega$)	500 at 100Vdc ±15Vdc	

Equivalent Series Resistance (ESR)

Frequency Range - MHz	Ω max.	Mode of Operation
8.000 to 10.000	100	Fundamental
10.001 to 12.000	80	
12.001 to 16.000	70	
16.001 to 20.000	50	
20.001 to 60.000	40	
40.001 to 60.000	30	Third Overtone
40.000 to 80.000	100	
80.001 to 160.000	80	

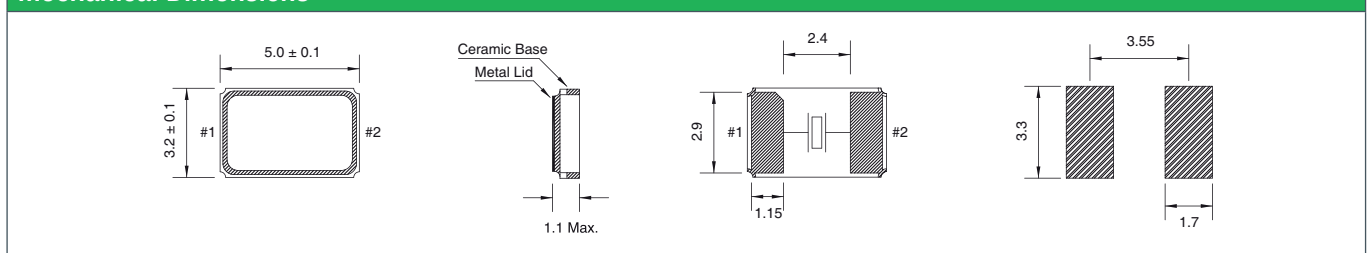
Frequency Stability vs. Temperature

Operating Temperature	±10ppm	±20ppm	±30ppm	±50ppm	±100ppm
-20°C - +70°C	○	○	○	○	○
-40°C - +85°C	○*	○	●	○	○
-40°C - +105°C	-	-	-	○	○
-40°C - +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	C5B = 3.2x5.0 2-Pad SMD	7 digits including the decimal point (f.i.e. 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: QC5B12.0000F12B33R

bold letters = recommended standard specification



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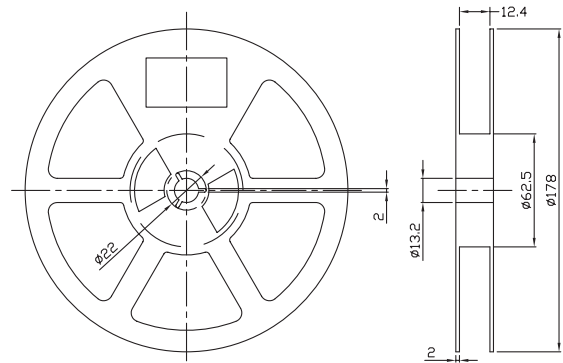
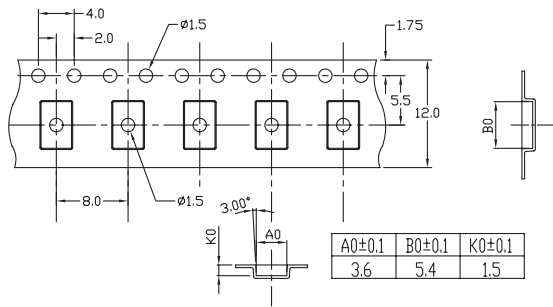
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Tape and Reel Dimensions



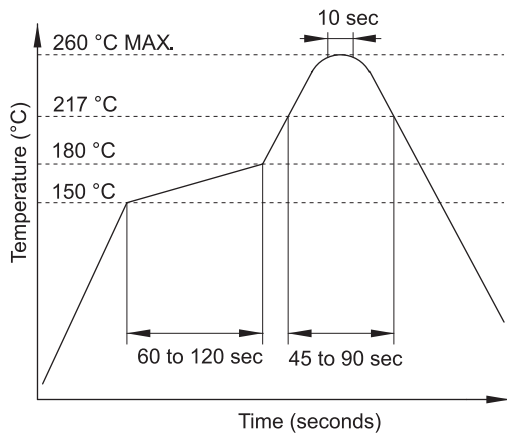
Marking Code Guide

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

Month Codes				Year Codes						Load Capacitance Code in pF			
January	A	July	G	2017	7	2018	8	2019	9	pF	PN Code	pF	PN Code
February	B	August	H	2020	0	2021	1	2022	2	12	A	20	F
March	C	September	I	2023	3	2024	4	2025	5	18	B	22	G
April	D	October	J							8	C	30	H
May	E	November	K							10	D	32	I
June	F	December	L							16	E	S	S

Example: First Line: 12.000 (Frequency) Second Line: QA8A (Qantek - January - 2018 - 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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