

# QC5CA Series

## 3.2x5.0 4-Pad SMD All Ceramic Crystal Unit



### Features

- All ceramic epoxy sealed SMD package
- Low in height, suitable for thin equipment
- Tight tolerance and stability available

### Applications

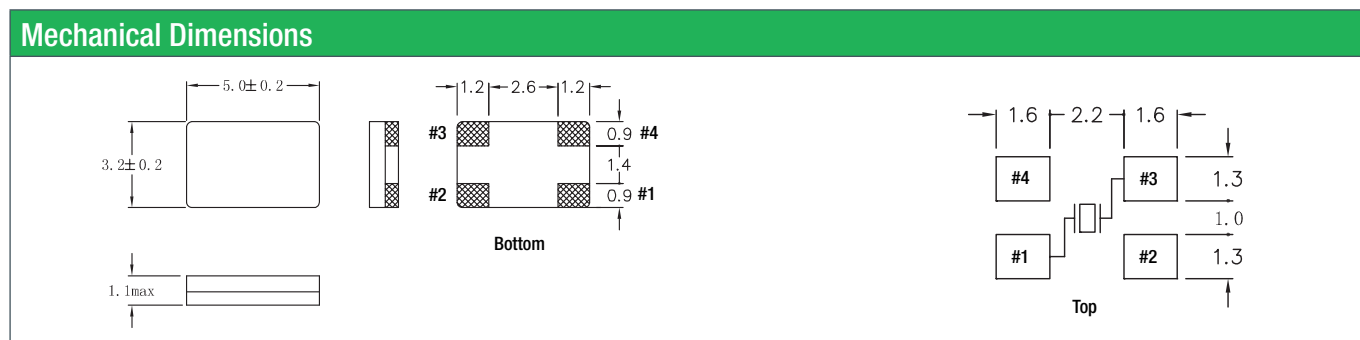
- High density applications
- Modem, communication and test equipment

General Specifications	
Frequency Range	8.000 to 48.000MHz (Fundamental)
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	±5ppm 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	100µW typ. (500µW max)
Insulation Resistance (MΩ)	500 at 100Vdc ±15Vdc

Equivalent Series Resistance (ESR)		
Frequency Range - MHz	Ω max.	Mode of Operation
8.000 to 10.000	100	Fundamental
10.000 to 12.000	80	Fundamental
12.000 to 16.000	60	Fundamental
16.000 to 48.000	30	Fundamental

Frequency Stability vs. Temperature			
Operating Temperature	±20ppm	±30ppm	±50ppm
-20 to +70°C	○	○	○
-40 to +85°C	○	●	○

● standard    ○ available



### Part Numbering Guide

Qantek Code	Package	Nominal Frequency (in MHz)	Vibration Mode	Load Capacitance	Operating Temperature Range	Frequency Tolerance	Frequency Stability	Packaging
Q = Qantek	C5CA = 3.2x5.0 4-Pad SMD	7 digits including the decimal point (f.i.e. 12.0000)	F = AT-Fund	S = Series <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	2 = ±20ppm <b>3 = ±30ppm</b> 5 = ±50ppm	M = 250pcs Tape&Reel R = 1000pcs Tape&Reel

Example: QC5CA12.0000F12B33R bold letters = recommended standard specification



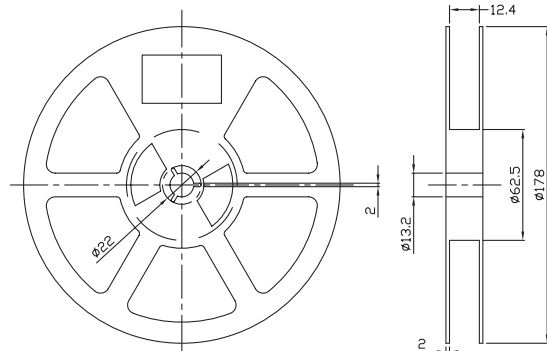
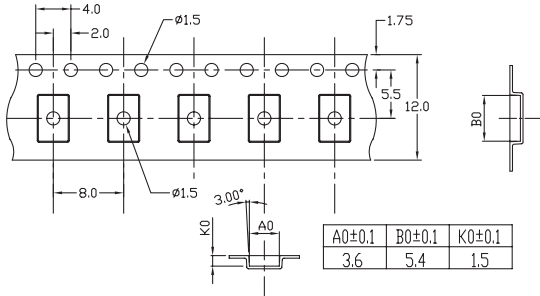
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### Tape and Reel Dimensions



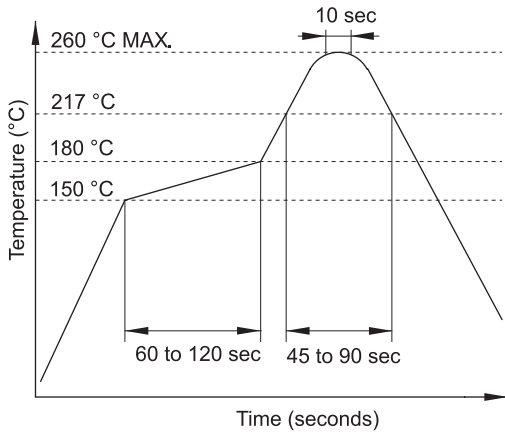
### Marking Code Guide

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

Month Codes				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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