QC5CA Series

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

RoHS Compliant

Pb lead-free

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)
Frenquency 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)

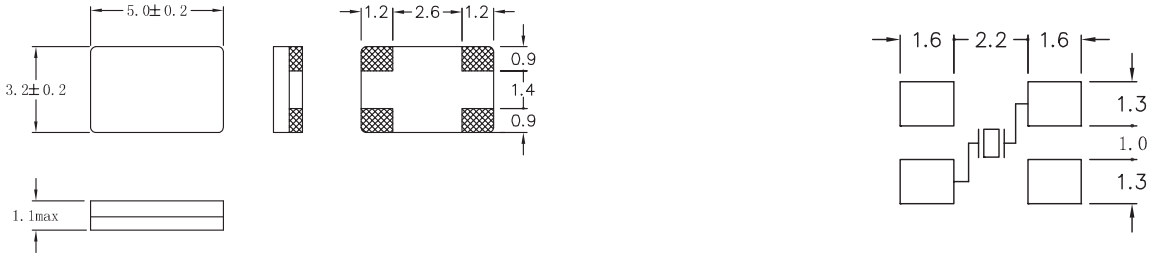
Frequency Range - MHz	Ω max.	Mode of Operation
8.000 to 10.000	100	Fundamental
10.000 to 12.000	80	Fundamental
12.000 to 16.000	60	Fundamental
16.000 to 48.000	30	Fundamental

Frequency Stability vs. Temperature

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

● standard ○ available

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	C5CA = 3.2x5.0 4-Pad SMD	7 digits including the decimal point (f.ie. 12.0000)	F = AT-Fund	S = Series **12 = 12pF** 18 = 18pF 20 = 20pF etc.	A = -20 to +70°C **B = -40 to +85°C**	2 = ±20ppm **3 = ±30ppm** 5 = ±50ppm	2 = ±20ppm **3 = ±30ppm** 5 = ±50ppm	M = 250pcs Tape&Reel R = 1000pcs Tape&Reel

Example: QC5CA12.0000F12B33R

bold letters = recommended standard specification

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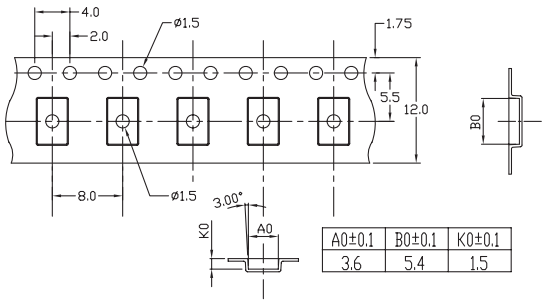
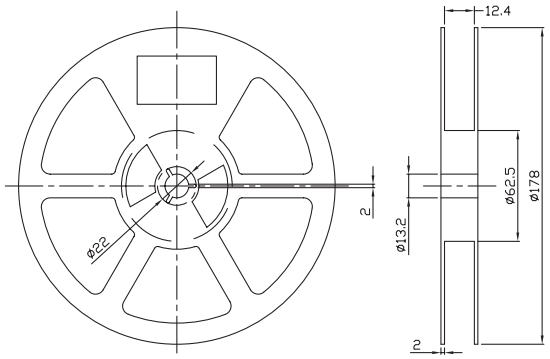
Tape and Reel Dimensions



A0±0.1	B0±0.1	K0±0.1
3.6	5.4	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

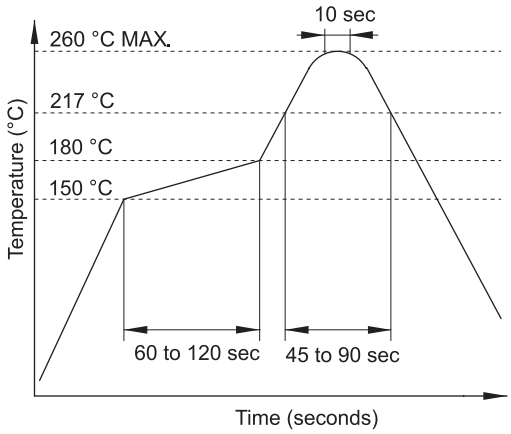
2010	0	2011	1	2012	2
2013	3	2014	4	2015	5

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.

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