QC1CA Series

2.0x1.6 4-Pad SMD Ceramic Epoxy Sealed Crystal Unit

RoHS Compliant

Pb lead-free

Features

- 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	16.000 to 54.000MHz (Fundamental)
Frequency Tolerance at 25°C	±10 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	8 to 12pF or specify
Shunt Capacitance C_0	2.0pF max.
Equivalent Series Resistance (ESR)	See ESR Table
Drive Level	50µW typ.
Insulation Resistance (MΩ)	500 at 100Vdc ±15Vdc

Equivalent Series Resistance (ESR)

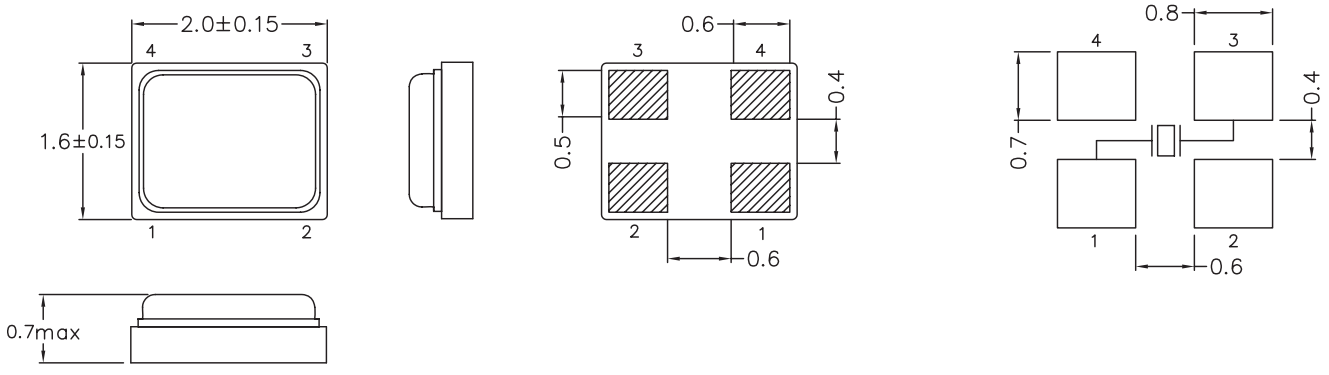
Frequency Range - MHz	Ω max.	Mode of Operation
16.000 to 20.000	250	Fundamental
20.001 to 23.000	150	Fundamental
23.001 to 32.000	100	Fundamental
32.001 to 54.000	80	Fundamental

Frequency Stability vs. Temperature

Operating Temperature	±10ppm	±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	C1CA = 2.0x1.6 4-Pad SMD	7 digits including the decimal point (f.ie. 12.0000)	F = AT-Fund	S = Series **08 = 8pF** 10 = 10pF 12 = 12pF etc.	A = -20 to +70°C **B = -40 to +85°C**	1 = ±10ppm 2 = ±20ppm **3 = ±30ppm** 5 = ±50ppm	1 = ±10ppm 2 = ±20ppm **3 = ±30ppm** 5 = ±50ppm	R3 = 3000pcs Tape&Reel

Example: QC1CA16.0000F08B33R

bold letters = recommended standard specification

QANTEK Technology Corporation

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Phone: +1 877-227-0440 (tollfree)

Fax: +1 877-227-0440 (tollfree)

www.qantek.com

info@qantek.com

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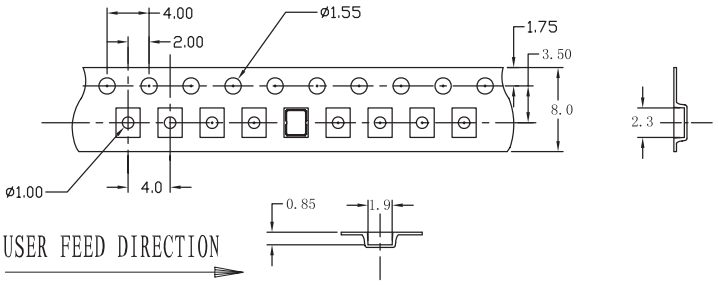
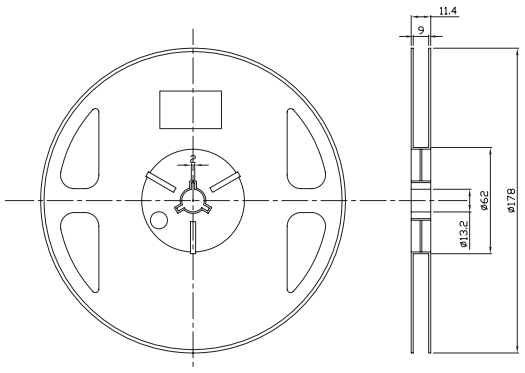
Tape and Reel Dimensions





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

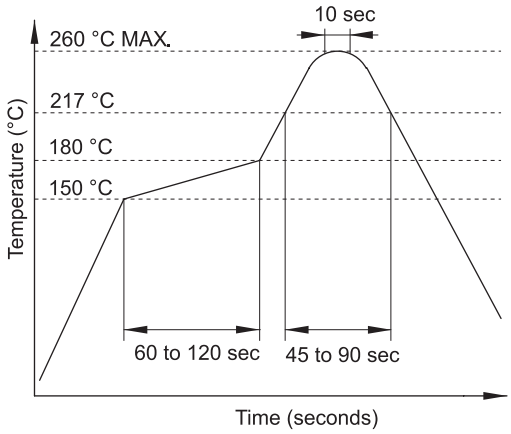
2022	2	2023	3	2024	4
2025	5	2026	6	2027	7
2028	8	2029	9	2030	0

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: 16.0 *(Frequency)* Second Line: QG4A *(Qantek - July - 2024 - 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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