QC20 Series

1.6x2.0 4-Pad SMD Quartz Crystal Unit

RoHS Compliant

Pb lead-free

Features

- 1.6 x 2.0 x 0.5mm ultra miniature package
- Seam sealed ceramic package with metal lid assures high precision and reliability

Applications

- High density applications
- Modem, communication and test equipment
- PMCIA, wireless applications

General Specifications

Frequency Range	16.000 to 60.000MHz (Fundamental)
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 max.
Load Capacitance C_L	7 to 32pF and Series Resonance
Shunt Capacitance C_0	3.0pF
Equivalent Series Resistance (ESR)	See ESR Table
Drive Level	50µW max.
Insulation Resistance (MΩ)	500 at 100Vdc ±15Vdc

Equivalent Series Resistance (ESR)

Frequency Range - MHz	Ω max.	Mode of Operation
16.000 to 19.999	150	Fundamental
20.000 to 29.999	100	
30.000 to 39.999	80	
40.000 to 60.000	60	

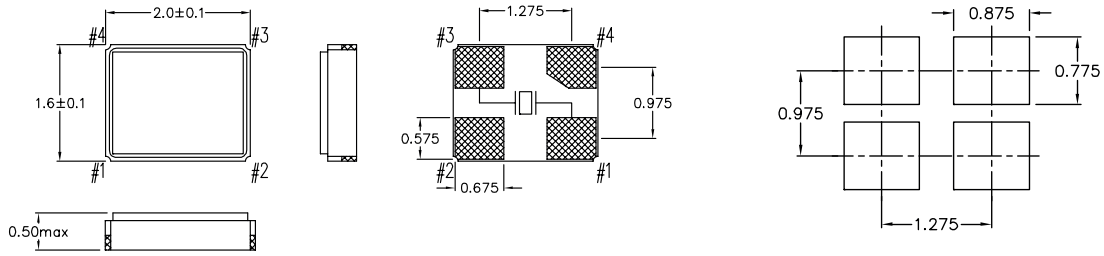
Frequency Stability vs. Temperature

Operating Temperature	±10ppm	±20ppm	±30ppm	±50ppm	±100ppm
-20 to +70°C	○	○	○	○	○
-40 to +85°C	○*	○	●	○	○
-40 to +105°C	-	-	-	○	○
-40 to +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	C20 = 1.6x2.0 4-Pad SMD	7 digits including the decimal point (f.ie. 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	not available	M = 250pcs Tape&Reel R = 1000pcs Tape&Reel R3 = 3000pcs Tape&Reel

Example: QC2024.0000F12B33R

bold letters = recommended standard specification

QANTEK Technology Corporation

QANTEK Technology Corporation

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

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

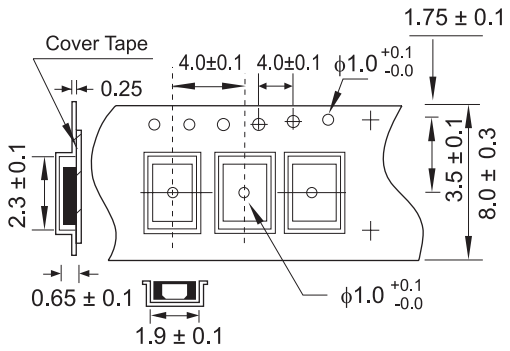
www.qantek.com

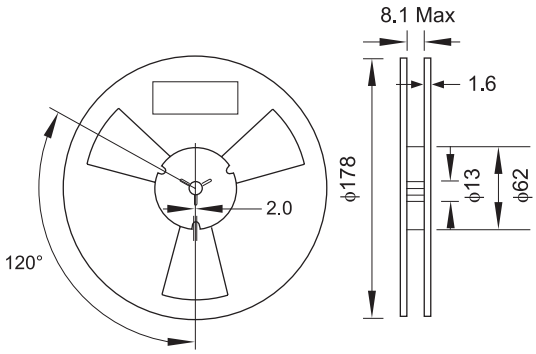
info@qantek.com

QC20 Series

1.6x2.0 4-Pad SMD Quartz Crystal Unit

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

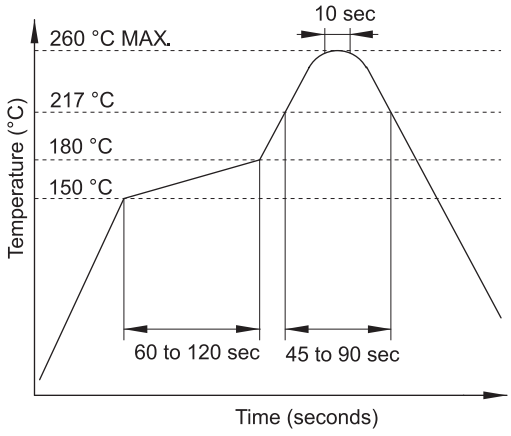
2016	6	2017	7	2018	8
2019	9	2020	0	2021	1
2022	2	2023	3	2024	4
2025	5	2026	6	2027	7

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: 12.0 *(Frequency)* Second Line: QK2A *(Qantek - November - 2022 - 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.

QANTEK Technology Corporation

QANTEK Technology Corporation
Phone: +1 877-227-0440 (tollfree)
Fax: +1 877-227-0440 (tollfree)
www.qantek.com
info@qantek.com