

QC4A Series

2.5x4.0 4-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
- PMCIA, wireless applications

General Specifications

Frequency Range	10.000 to 120.000MHz	
Mode of Oscillation	Fundamental	10.000 to 60.000MHz
	Third Overtone	54.000 to 120.000MHz
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	±3ppm max.	
Load Capacitance C_L	8 to 32pF and Series Resonance	
Shunt Capacitance C_0	5.0pF max.	
Equivalent Series Resistance (ESR)	See ESR Table	
Drive Level	100µW typ.	
Insulation Resistance ($M\Omega$)	500 at 100Vdc ±15Vdc	

Equivalent Series Resistance (ESR)

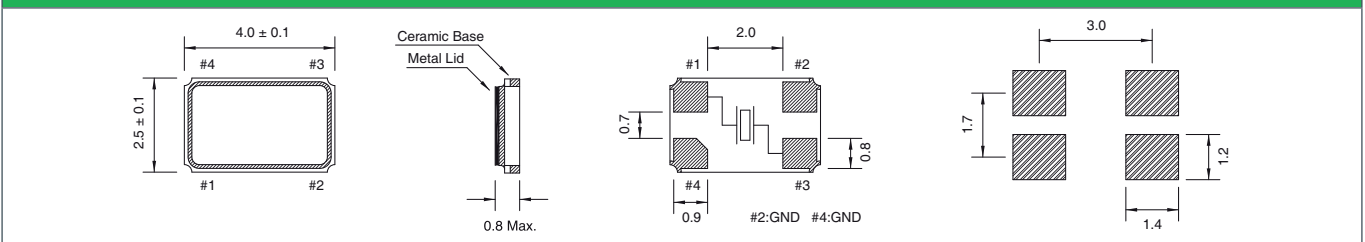
Frequency Range - MHz	Ω max.	Mode of Operation
10.000 to 12.000	120	Fundamental
12.001 to 14.000	100	
14.001 to 16.000	80	
16.001 to 20.000	60	
20.001 to 24.000	50	
24.001 to 60.000	40	Third Overtone
54.001 to 120.000	80	

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	C4A = 2.5x4.0 4-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	not available	M = 250pcs Tape&Reel R = 1000pcs Tape&Reel

Example: QC4A12.0000F12B33R

bold letters = recommended standard specification



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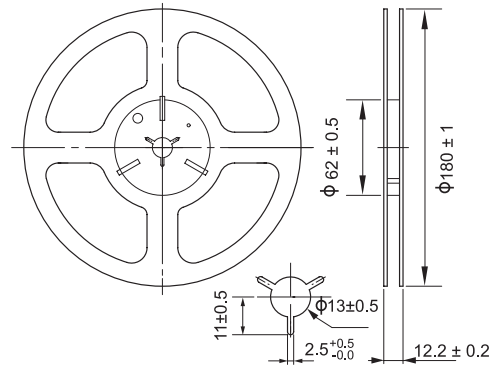
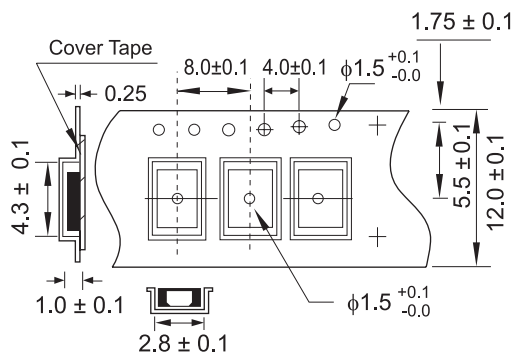
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Tape and Reel Dimensions



Marking Code Guide

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

Month Codes

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

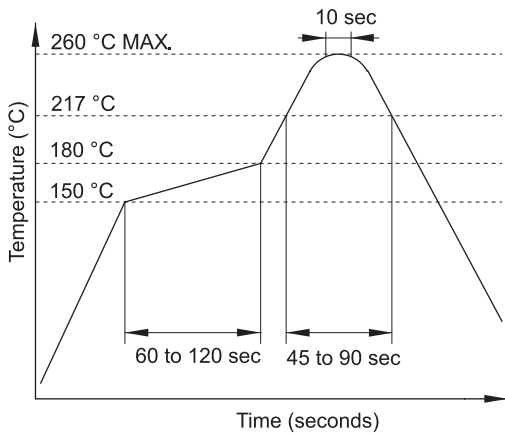
2019	9	2020	0	2021	1
2022	2	2023	3	2024	4
2025	5	2026	6	2027	7

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: 12.000 (Frequency) Second Line: QA9A (Qantek - January - 2019 - 12 pF)

Solder Reflow Profile



All specifications are subject to change without notice.

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



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