QC4 Series

HC-49/U-S SMD 4-Pad

RoHS Compliant

Pb lead-free

Features

- All-purpose surface-mount crystal
- Four pad land pattern compatible with common plastic molded designs

Applications

- Computers, modems and communications
- Clock applications
- Microprocessors

General Specifications

Frequency Range		3.200 to 70.000MHz
Mode of Oscillation	Fundamental	3.200 to 32.768MHz
	Third Overtone	24.576 to 70.000MHz
Frenquency Tolerance at 25°C		±10 to ±30ppm (±30ppm standard)
Frequency Stability over Temperature Range		See Stability vs. Temperatur Table
Storage Temperature		-55 to +125°C
Aging per Year		±3ppm max.
Load Capacticance C_L		10 to 32pF and Series Resonance
Shunt Capacticance C_0		7.0pF
Equivalent Series Resistance (ESR)		See ESR Table
Drive Level		1.0mW max.
Insulation Resistance (MΩ)		500 at 100Vdc ±15Vdc

Equivalent Series Resistance (ESR)

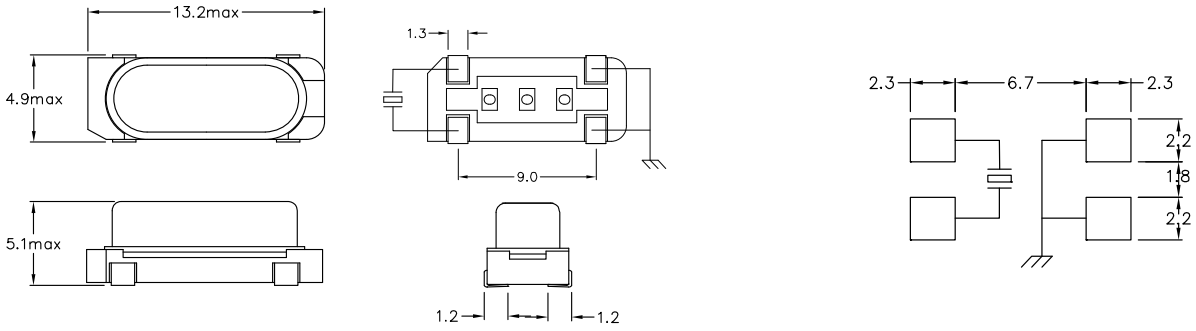
Frequency Range - MHz	Ω max.	Mode of Operation
3.200 to 3.500	300	Fundamental
3.510 to 3.999	200	
4.000 to 5.999	120	
6.000 to 7.999	80	
8.000 to 9.999	60	
10.000 to 15.999	50	
16.000 to 32.768	40	
24.576 to 70.000	80	Fundamental - Third Overtone

Frequency Stability vs. Temperature

Operating Temperature	±10ppm	±20ppm	±30ppm	±50ppm	±100ppm
-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	Automotive Indicator	Packaging
Q = Qantek	C4 = HC-49/U-S SMD 4-Pad	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**	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: QC412.0000F18B35R

bold letters = recommended standard specification

QANTEK

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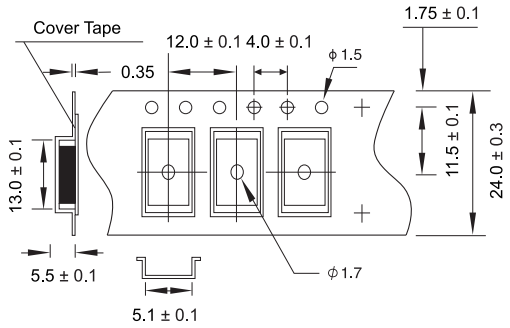
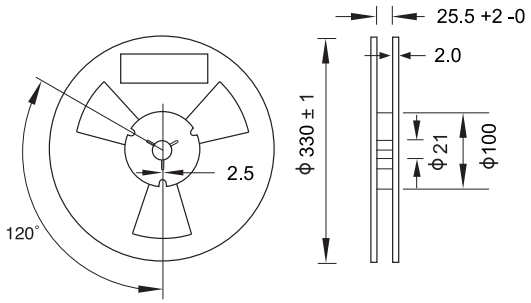
HC-49/U-S SMD 4-Pad

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

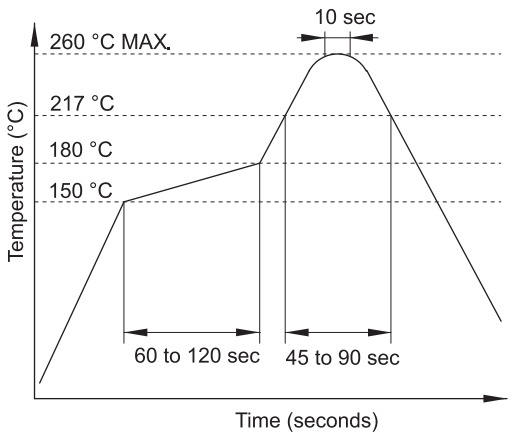
2010	0	2011	1	2012	2
2013	3	2014	4	2015	5

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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