

# QC5CA Series

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



### 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)    |
| Frequency 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 ( $M\Omega$ )        | 500 at 100Vdc ±15Vdc                |

| Equivalent Series Resistance (ESR) |               |                   |
|------------------------------------|---------------|-------------------|
| Frequency Range - MHz              | $\Omega$ 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.i.e. 12.0000) | F = AT-Fund    | S = Series<br>12 = 12pF<br>18 = 18pF<br>20 = 20pF etc. | A = -20 to +70°C<br>B = -40 to +85°C              | 2 = ±20ppm<br>3 = ±30ppm<br>5 = ±50ppm | 2 = ±20ppm<br>3 = ±30ppm<br>5 = ±50ppm | M = 250pcs Tape&Reel<br>R = 1000pcs Tape&Reel |
| Example: QC5CA12.0000F12B33R |                          |                                                       |                |                                                        | bold letters = recommended standard specification |                                        |                                        |                                               |

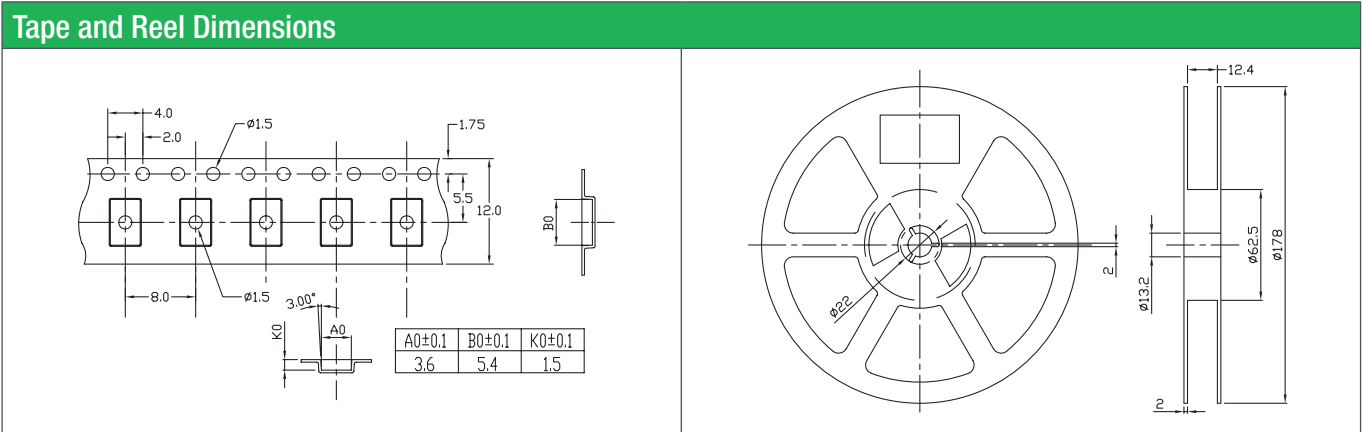


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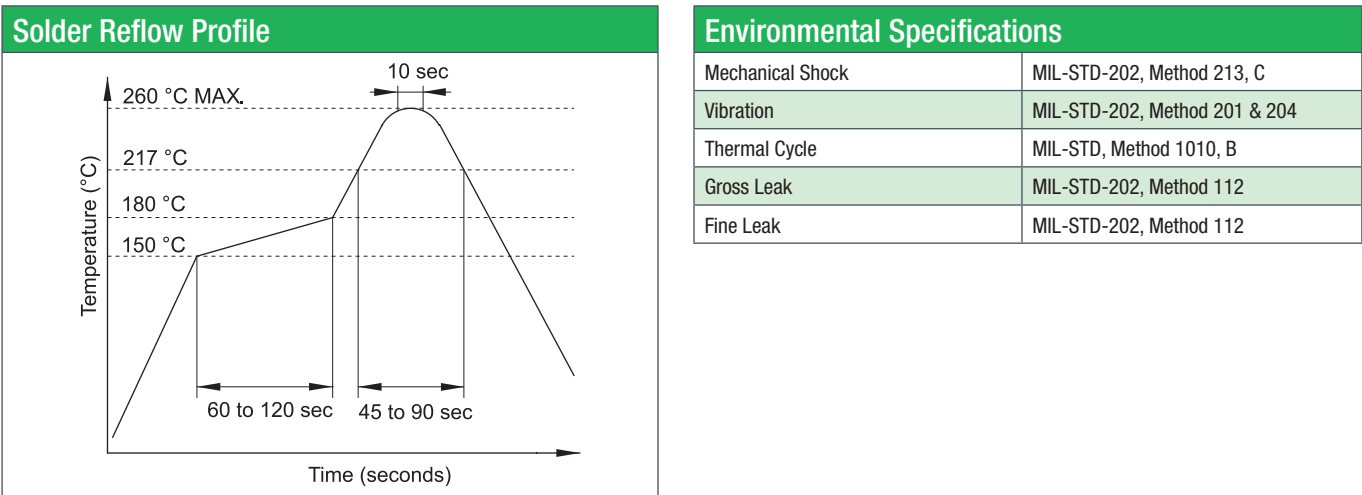


### Marking Code Guide

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

| Month Codes |   |           |   | Year Codes |   |      |   |      |   | Load Capacitance Code in pF |         |    |         |
|-------------|---|-----------|---|------------|---|------|---|------|---|-----------------------------|---------|----|---------|
| January     | A | July      | G | 2010       | 0 | 2011 | 1 | 2012 | 2 | pF                          | PN Code | pF | PN Code |
| February    | B | August    | H | 2013       | 3 | 2014 | 4 | 2015 | 5 | 12                          | A       | 20 | F       |
| March       | C | September | I |            |   |      |   |      |   | 18                          | B       | 22 | G       |
| April       | D | October   | J |            |   |      |   |      |   | 8                           | C       | 30 | H       |
| May         | E | November  | K |            |   |      |   |      |   | 10                          | D       | 32 | I       |
| June        | F | December  | L |            |   |      |   |      |   | 16                          | E       | S  | S       |

*Example:* First Line: 12.000 (*Frequency*) Second Line: QA1A (*Qantek - January - 2011 - 12 pF*)



All specifications are subject to change without notice.