

QC3CA Series

2.5x3.2 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 | 12.000 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 (MΩ) | 500 at 100Vdc ±15Vdc |

Equivalent Series Resistance (ESR)

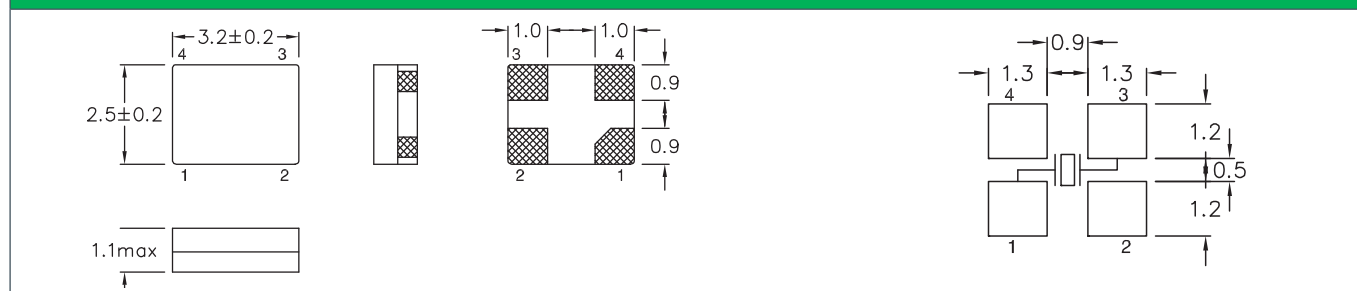
| Frequency Range - MHz | Ω max. | Mode of Operation |
|-----------------------|--------|-------------------|
| 12.000 to 16.000 | 120 | Fundamental |
| 16.000 to 25.000 | 60 | Fundamental |
| 25.000 to 30.000 | 50 | Fundamental |
| 30.000 to 48.000 | 35 | Fundamental |

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 | C3CA = 2.5x3.2 4-Pad SMD | 7 digits including the decimal point (f.i.e. 12.0000) | F = AT-Fund | S = Series 12 = 12pF 18 = 18pF 20 = 20pF etc. | A = -20 to +70°C B = -40 to +85°C | 2 = ±20ppm 3 = ±30ppm 5 = ±50ppm | 2 = ±20ppm 3 = ±30ppm 5 = ±50ppm | M = 250pcs Tape&Reel R = 1000pcs Tape&Reel |

Example: QC3CA12.0000F12B33R

bold letters = recommended standard specification



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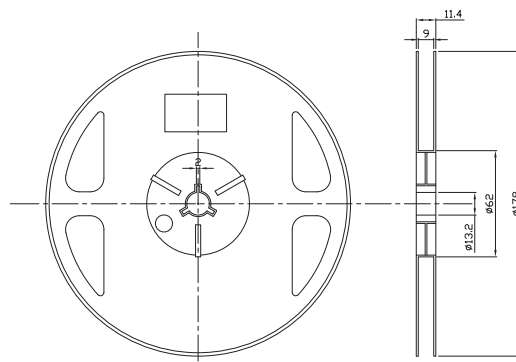
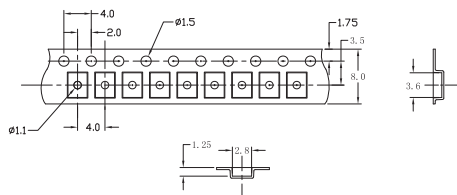
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Tape and Reel Dimensions



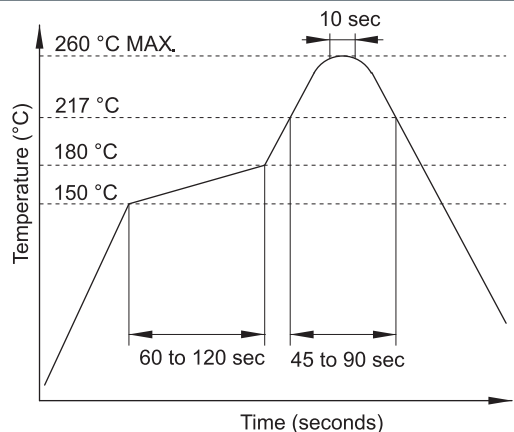
Marking Code Guide

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

| Month Codes | | | | 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)

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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