

Data sheet

F3215

32.768KHz 2 pad SMD Crystal (3.2x1.5x0.9mm)

FEATURES

- Miniature Ceramic SMD package, 2 pad (Reflow is possible)
- Temperature range -40/+85°C (Industrial Applications)
- Ultra-thin thickness 0.9mm
- Excellent aging characteristics
- Applications: Wireless, Commercial and Industrial equipment...



| Parameter | min. | typ. | max. | Unit | Condition |
|------------------------------------|---|--------|------|------|---------------------|
| Frequency | | 32.768 | | KHz | |
| Vibration mode | XY-cut | | | | |
| Frequency stability | | | | | |
| Initial tolerance @25°C | ±20, ±50 | | | ppm | |
| Operating temperature range | -40 | | +85 | °C | |
| Turnover temperature | 25°C ±5 °C | | | | |
| Parabolic curvature constant | -0.045x10 ⁻⁶ /°C ² max. | | | | |
| Equivalent Series Resistance (ESR) | 80KΩ max. | | | | |
| Load Capacitance (CL) | Standard: 12.5pF (9pF optional) | | | | |
| Shunt Capacitance (Co) | | | 2.0 | pF | |
| Drive Level | | | 0.1 | μW | |
| Aging | | | ±3 | ppm | At 25°C, first year |
| Insulation Resistance | 500 | | | MΩ | @ 100Vdc |
| Enclosure (see drawing) (LxWxH) | 3.2 x 1.5 x 0.9 | | | mm | |
| Packing | 3000 pcs per reel | | | | |

Ordering Code:

| Tolerance | Load Capacitance |
|-------------|------------------|
| 20 = ±20ppm | 12.5 = 12.5pF |
| 50 = ±50ppm | 9 = 9pF |

Standard specifications:

- ± 50ppm
- 12.5pF

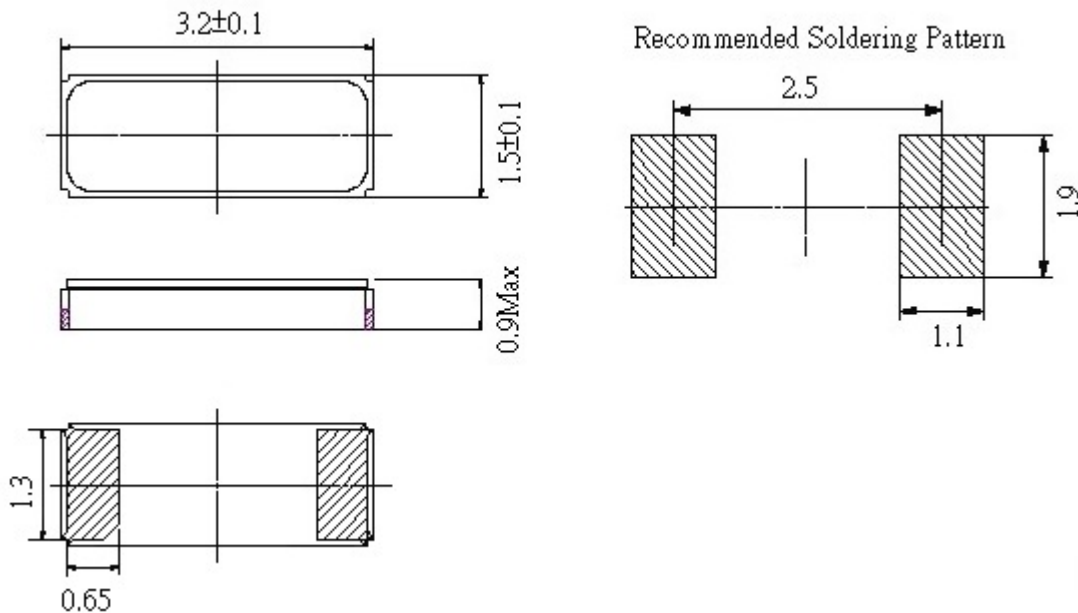
Example: F3215-50-9

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Outline Dimensions (mm):



Environmental conditions

| Test | IEC 60068 Part ... | IEC 60679-1 clause ... | Test conditions (IEC) |
|----------------------------------|-----------------------|---------------------------|---|
| Sealing tests (if applicable) | 2-17 | 5.6.2 | Gross leak: Test Qc, Fine leak: Test Qk |
| Solderability | 2-20 | 5.6.3 | Test Ta Method 1 |
| Resistance to soldering heat | 2-58 | | Test Td ₁ Method 2 Test Td ₂ Method 2 |
| Shock* | 2-27 | 5.6.8 | Test Ea, 3 x per axes 100g, 6 ms half-sine pulse |
| Vibration, sinusoidal* | 2-6 | 5.6.7.1 | Test Fc, 30 min per axes, 10 Hz - 55 Hz 0,75mm; 55 Hz - 2 kHz, 10g |
| Vibration random * | 2-64 | 5.6.7.3 | Test Fdb |
| Endurance tests | | | |
| - ageing | | 5.7.1 | 30 days @ 85°C, OCXO @25°C |
| - extended aging | | 5.7.2 | 1000h, 2000h, 8000h @85°C |

Rev. 2 dated 01-02-2013