

# XX Type

## 3.2 x 2.5 mm SMD Crystal

### FEATURE

- Typical 3.2 x 2.5 x 0.7 mm ultra thin ceramic package.
- 8mm width Tape & Reel package for automatic assembly.
- Tight tolerance 10 ppm available.

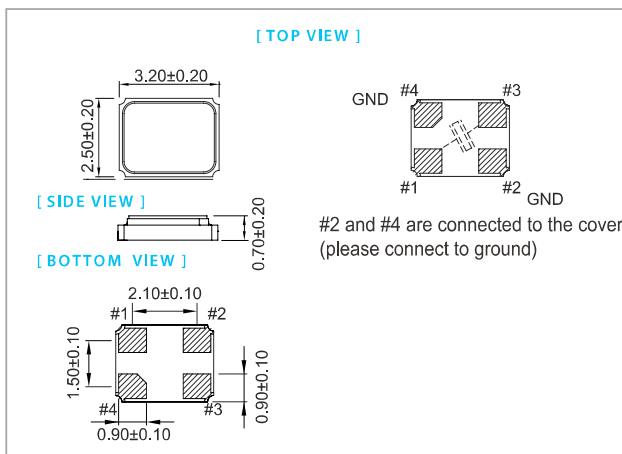
### TYPICAL APPLICATION

- Bluetooth, Mobile Phone, GPS
- Wireless LAN, 4G/LTE
- Hard Disk



RoHS Compliant

### DIMENSION (mm)



### SOLDER PAD LAYOUT (mm)



### ELECTRICAL SPECIFICATION

| Parameter              | Min.                   | Typical | Max. | Unit       |
|------------------------|------------------------|---------|------|------------|
| Storage Temp. Range    | -55                    | -       | 125  | °C         |
| Standard Frequency     | 16, 24, 26, 27, 32, 40 |         |      | MHz        |
| Level of Drive         | -                      | 10      | 200  | µW         |
| Shunt Capacitance (Co) | -                      | -       | 3.0  | pF         |
| Insulation Resistance  | 500 MΩ @ DC100V        | -       | -    |            |
| Aging                  | ±1.0 to ±3.0           |         |      | ppm / year |

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.

### EQUIVALENT SERIES RESISTANCE (E.S.R)

| Frequency Range        | MODE | E.S.R |
|------------------------|------|-------|
| 12 MHz ≤ Fo ≤ 13 MHz   | A1   | <150Ω |
| 13 MHz < Fo ≤ 19.5 MHz | A1   | <80Ω  |
| 19.5 MHz < Fo ≤ 27 MHz | A1   | <60Ω  |
| 27 MHz < Fo ≤ 60 MHz   | A1   | <50Ω  |

### FREQ. STABILITY vs. TEMP. RANGE

| Temp.(°C) | ppm |     |     |
|-----------|-----|-----|-----|
|           | ±5  | ±10 | ±15 |
| -10 ~ +60 | △   | ○   | ○   |
| -20 ~ +70 | X   | ○   | ○   |
| -40 ~ +85 | X   | X   | △   |

\* ○: Available △:Conditional X: Not available

### FREQ. STABILITY vs. WIDE TEMP. RANGE

| Temp.(°C)  | ppm |     |     |     |
|------------|-----|-----|-----|-----|
|            | ±15 | ±20 | ±30 | ±50 |
| -40 ~ +105 | △   | ○   | ○   | ○   |
| -40 ~ +125 | X   | X   | △   | ○   |

\* ○: Available △:Conditional X: Not available

**Note: not all combination of options are available. Other specifications may be available upon request.**

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