





# SURFACE MOUNT QUARTZ CRYSTAL

## **FEATURES**

- Standard 7.0mm x 5.0mm Ceramic Surface Mount Package
- Fundamental and 3<sup>rd</sup> Overtone Crystal Design
- Frequency Range 6 133MHz
- Frequency Tolerance, ±30ppm Standard
- Frequency Stability, ±50ppm Standard
- Operating Temperature to -40°C to +85°C
- Stable Frequency Over Temperature and Drive Level
- Tape & Reel Packaging Standard, EIA-481
- RoHS/Green Compliant [6/6]



## **APPLICATIONS**

Model 407 is a seam sealed ceramic packaged quartz resonator offering excellent performance for a wide variety of applications including; wireless communications, broadband access, WLAN/WiMax/WIFI, test and measurement, portable equipment and computer peripherals.





## **ELECTRICAL CHARACTERISTICS**

|                       | PARAMETER   | VALUE                        |                 |
|-----------------------|---|------------------------------|-----------------|
| ELECTRICAL PARAMETERS | Frequency Range   | 6MHz to 40MHz                | 35MHz to 133MHz |
|                       | Operating Mode  | Fundamental                  | 3rd Overtone    |
|                       | Crystal Cut   | AT-Cut                       |                 |
|                       | Frequency Tolerance @ +25°C   | ±30ppm, Standard             |                 |
|                       | Frequency Stability Tolerance<br>[Operating Temperature Range, Referenced to +25°C Reading] | ±30ppm, Standard             |                 |
|                       | Operating Temperature Ranges  | -20°C to +70°C               |                 |
|                       |   | -30°C to +85°C               | -40°C to +85°C  |
|                       | Equivalent Series Resistance - Fundamental Mode<br>[Maximum]                                | 6MHz - <10MHz                | 80 Ohms         |
|                       |   | 10MHz - <14MHz               | 70 Ohms         |
|                       |   | 15MHz - <20MHz               | 50 Ohms         |
|                       |   | 20MHz - 40MHz                | 40 Ohms         |
|                       | Equivalent Series Resistance - 3rd Overtone Mode<br>[Maximum]                               | 35MHz - <44MHz               | 80 Ohms         |
|                       |   | 44MHz - <50MHz               | 70 Ohms         |
|                       |   | 50MHz - <80MHz               | 60 Ohms         |
|                       |   | 80MHz - 133MHz               | 60 Ohms         |
|                       | Load Capacitance  | See Ordering Information     |                 |
|                       | Shunt Capacitance [C <sub>0</sub> ]   | 5.0pF Typical, 7.0pF Maximum |                 |
|                       | Drive Level   | 10µW Тур., 200µW Мах.        |                 |
|                       | Aging @ +25°C   | ±3ppm/yr Typical             |                 |
|                       | Insulation Resistance   | 500M Ohms @ DC 100V          |                 |
|                       | Storage Temperature Range   | -40°C to +100°C              |                 |

# **MECHANICAL SPECIFICATIONS**

### PACKAGE DRAWING



#### MARKING INFORMATION

- 1. XX.XXX Frequency marked with 3 significant digits after the decimal.
- 2. C CTS identifier.
- 3. \*\* Manufacturing Site code.
- 4. YWW Date Code, Y Last Digit of Year, WW Week.

#### NOTES

- 1. Complete CTS part number, frequency value and date code information must appear on reel and carton labels.
- 2. Terminations #2, #4 and metal lid are connected internally and may be connected to ground for EMI suppression.
- 3. Termination pads (e4); barrier plating is nickel Ni] with gold [Au] flash plate.
- Reflow conditions per JEDEC J-STD-020; +260°C maximum, 10 seconds.
- 5. MSL = 1.

### SUGGESTED SOLDER PAD GEOMETRY

