

## FEATURES

- Low profile
- Industry standard footprint
- High temperature seal capabilities
- Excellent shock resistance
- Excellent environmental characteristics
- Tape and Reel (1000 pcs)

## SMD QUARTZ CRYSTAL

This wide frequency range SMD quartz crystal is an excellent choice for surface mount applications. The ruggedized molded package is made from the same thermoplastic that is industry standard for integrated circuits.

## PART NUMBERING GUIDE "EXAMPLE"

| PART NUMBER | LOAD CAPACITANCE* | TAPE & REEL | FREQUENCY |
|-------------|-------------------|-------------|-----------|
| SMD         | 20                | R           | 6.144 MHz |

\* Load capacitance (xx=xx pF, S= series resonance)

## OPERATING CONDITIONS/ELECTRICAL CHARACTERISTICS

| PARAMETERS                  | CONDITIONS                 | MINIMUM | TYPICAL       | MAXIMUM | UNITS   |
|-----------------------------|----------------------------|---------|---------------|---------|---------|
| FREQUENCY RANGE             | $f_0$                      | 3.57    |               | 90.00   | MHz     |
| SHUNT CAPACITANCE           | $C_0$                      |         |               | 5.0     | pF      |
| LOAD CAPACITANCE            | $C_L$ (Customer Specified) | 12      | 18.0 standard | Series  | pF      |
| DRIVE LEVEL                 | 3.57 ~ 90.00MHz            |         | 100           |         | $\mu$ W |
| CALIBRATION TOLERANCE       | @ 25°C                     | -50     |               | +50     | PPM     |
| FREQUENCY TOLERANCE         | $\Delta f/f_0$             | -50     |               | +50     | PPM     |
| OPERATING TEMPERATURE RANGE | $T_{OPR}$                  | -10     |               | +70     | °C      |
| STORAGE TEMPERATURE RANGE   | $T_{STG}$                  | -40     |               | +90     | °C      |

## EQUIVALENT SERIES RESISTANCE / MODE OF OSCILLATION

| FREQUENCY RANGE (MHz) | MODE OF OSC | MAX ESR $\Omega$ | FREQUENCY RANGE (MHz) | MODE OF OSC | MAX ESR $\Omega$ |
|-----------------------|-------------|------------------|-----------------------|-------------|------------------|
| 3.570 ~ 3.999         | Fundamental | 250              | 9.000 ~ 12.999        | Fundamental | 60               |
| 4.000 ~ 4.999         | Fundamental | 150              | 13.000 ~ 19.999       | Fundamental | 40               |
| 5.000 ~ 5.999         | Fundamental | 120              | 20.000 ~ 30.000       | Fundamental | 30               |
| 6.000 ~ 6.999         | Fundamental | 100              | 30.000 ~ 90.000       | 3rd O/T     | 100              |
| 7.000 ~ 8.999         | Fundamental | 80               |                       |             |                  |

## PACKAGE DIMENSIONS (mm)

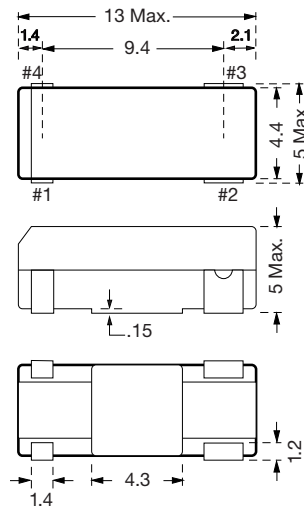


Figure 1) SMD - Top, Side, Bottom and End views

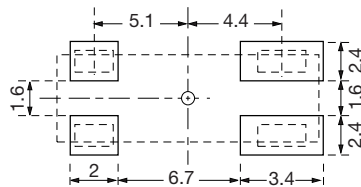


Figure 2) SMD Land Pattern - Bottom view

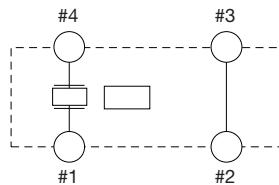


Figure 3) Internal Connections - Top view

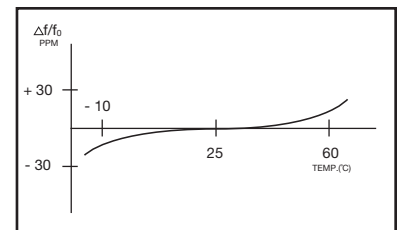


Figure 4) Frequency vs Temperature Curve