

The CSM-8 Series is a very cost effective, low profile SMD quartz crystal. The glass sealed ceramic package is available in three optional land pad configurations. It is ideal for PCMCIA, ethernet and fax modem card applications.

FEATURES

- Glass sealed ceramic package
- Tight stability / high reliability
- Wide frequency range
- High frequency fundamental available
- Two optional footprints
- Tape & Reel (1,000 pcs)

PART NUMBERING GUIDE "EXAMPLE"

| | FREQUENCY (16.000MHz) | LOAD CAPACITANCE* | PACKAGE TYPE** |
|-----|-----------------------|-------------------|----------------|
| ECS | - 160 - | 20 | 20A |

* Load capacitance (xx=xx pF, S= series resonance), ** Package Type examples (20A = CSM-8A, 20B = CSM-8B)

Note: See Product Selection Guide for additional options.

OPERATING CONDITIONS/ELECTRICAL CHARACTERISTICS

| PARAMETERS | CONDITIONS | MINIMUM | TYPICAL | MAXIMUM | UNITS |
|---------------------------------|----------------------|---------|---------------|---------|-------|
| FREQUENCY RANGE | f_0 | 9.8 | | 100.0 | MHz |
| CALIBRATION TOLERANCE | @ +25°C | -30 | | +30 | PPM |
| FREQUENCY STABILITY, ref @ 25°C | -10 ~ +70°C | -50 | | +50 | PPM |
| SHUNT CAPACITANCE | C_0 | | | 5.0 | pF |
| LOAD CAPACITANCE (C_L) | (Customer Specified) | 10.0 | 20.0 standard | Series | pF |
| DRIVE LEVEL (D_L) | 9.8 ~ 100.0MHz | | | 0.5 | mW |
| OPERATING TEMPERATURE | T_{OPR} | -10 | | +70 | °C |
| STORAGE TEMPERATURE | T_{STG} | -40 | | +85 | °C |
| AGING (FIRST YEAR) | @ +25°C | -5.0 | | +5.0 | PPM |

EQUIVALENT SERIES RESISTANCE / MODE OF OSCILLATION

| FREQUENCY RANGE (MHz) | MODE | MAX ESR Ω | FREQUENCY RANGE (MHz) | MODE | MAX ESR Ω |
|-----------------------|-------------|------------------|-----------------------|---------|------------------|
| 9.800 ~ 15.999 | Fundamental | 60 | 28.000 ~ 34.999 | 3rd O/T | 80 |
| 16.000 ~ 42.000 | Fundamental | 40 | 35.000 ~ 100.000 | 3rd O/T | 60 |

PACKAGE DIMENSIONS (mm)

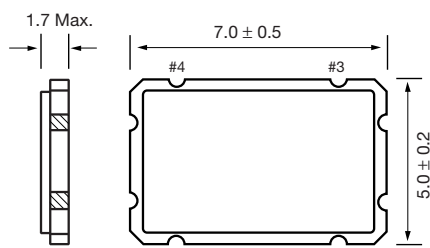


Figure 1) CSM-8 – Side and Top view

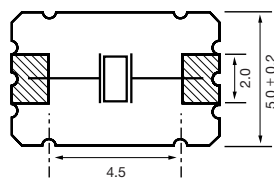


Figure 2) CSM-8A – Pad Configuration Bottom view

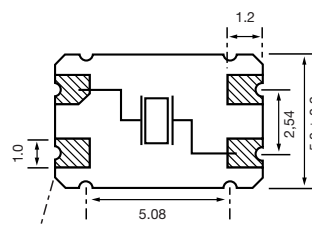


Figure 3) CSM-8B – Pad Configuration Bottom view

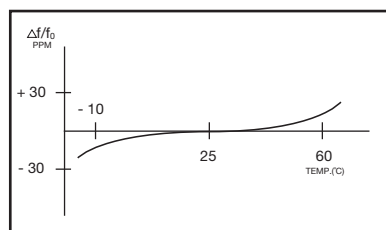


Figure 4) Frequency vs Temperature Curve

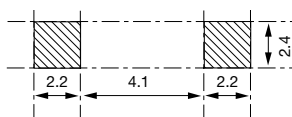


Figure 5) CSM-8A – Recommended Solder Pad Layout Top view

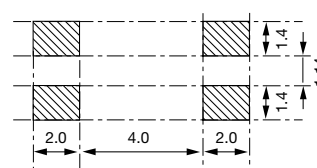


Figure 6) CSM-8B – Recommended Solder Pad Layout Top view