

# Quartz Crystal

**Frequency Range:** 10MHz to 50MHz (fund)  
20MHz to 100MHz (3rd O/T)  
50MHz to 200MHz (5th O/T)  
**Frequency Tolerance:**  $\pm 10\text{ppm}$  to  $\pm 100\text{ppm}$   
**Frequency Stability:**  $\pm 10\text{ppm}$  to  $\pm 100\text{ppm}$   
**Temperature Range:**  $0^{\circ}\text{C}$  to  $70^{\circ}\text{C}$   
(Option)  $-20^{\circ}\text{C}$  to  $70^{\circ}\text{C}$   
(Option)  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$   
**Storage:**  $-55^{\circ}\text{C}$  to  $120^{\circ}\text{C}$   
**Shunt Capacitance:** 7.0pF Max  
**Drive Level:** 100 uW Typical  
**ESR:** see table 1

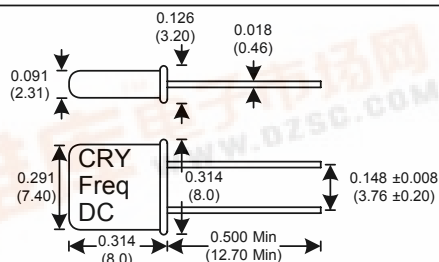


Lead Free  
RoHS  
Compliant

Designed to provide traditional crystal design flexibility of the HC49 in a smaller UM-1 package. Custom lead forming available for SMD applications.

**\*\*Custom Designs Available**

**Aging:** <3ppm 1st/yr Max



| Resistance at series resonance |         |
|--------------------------------|---------|
| Freq. (MHz)                    | Max ESR |
| 10.0 - 18.0                    | 60      |
| 18.1 - 50.0                    | 40      |
| 20.0 - 100.0                   | 60      |
| 50.0 - 200.0                   | 100     |

Table 1

Dimensions inches (mm)  
All dimensions are Max unless otherwise specified.

## Build Your Own P/N

CRM X X X X - Freq

### Frequency Tolerance at 25°C

- 1  $\pm 10$  ppm
- 2  $\pm 15$  ppm
- 3  $\pm 20$  ppm
- 4  $\pm 25$  ppm
- 5  $\pm 30$  ppm
- 6  $\pm 50$  ppm
- 7  $\pm 100$  ppm

### Frequency Stability over Temp Range

|                                                  |                                                        |
|--------------------------------------------------|--------------------------------------------------------|
| A $\pm 10$ ppm (0 to $70^{\circ}\text{C}$ )      | J $\pm 30\text{ppm}$ ( $-20$ to $70^{\circ}\text{C}$ ) |
| B $\pm 15$ ppm (0 to $70^{\circ}\text{C}$ )      | K $\pm 50$ ppm ( $-20$ to $70^{\circ}\text{C}$ )       |
| C $\pm 20$ ppm (0 to $70^{\circ}\text{C}$ )      | L $\pm 100$ ppm ( $-20$ to $70^{\circ}\text{C}$ )      |
| D $\pm 25$ ppm (0 to $70^{\circ}\text{C}$ )      | M $\pm 20$ ppm ( $-40$ to $85^{\circ}\text{C}$ )       |
| E $\pm 30$ ppm (0 to $70^{\circ}\text{C}$ )      | N $\pm 25$ ppm ( $-40$ to $85^{\circ}\text{C}$ )       |
| F $\pm 50$ ppm (0 to $70^{\circ}\text{C}$ )      | O $\pm 30$ ppm ( $-40$ to $85^{\circ}\text{C}$ )       |
| G $\pm 100$ ppm (0 to $70^{\circ}\text{C}$ )     | P $\pm 50$ ppm ( $-40$ to $85^{\circ}\text{C}$ )       |
| H $\pm 15$ ppm ( $-20$ to $70^{\circ}\text{C}$ ) | Q $\pm 100$ ppm ( $-40$ to $85^{\circ}\text{C}$ )      |
| I $\pm 20$ ppm ( $-20$ to $70^{\circ}\text{C}$ ) |                                                        |

### Load Capacitance

- 1 Series
- 2 14 pF
- 3 16 pF
- 4 18 pF
- 5 20 pF
- 6 22 pF
- 7 25 pF
- 8 32 pF

### Mode

- 1 Fundamental 10-50 MHz
- 3 3rd Overtone 20-100 MHz
- 5 5th Overtone 50-200 MHz

Example:

CRM4F51-20.000 =  $\pm 25\text{ppm}$  at  $25^{\circ}\text{C}$ ,  $\pm 50\text{ppm}$  0 to  $70^{\circ}\text{C}$ , 20pF Load Cap, Fundamental, 20.000MHz

Specifications subject to change without notice.

TD-021014 Rev. B