

## PART NUMBERING GUIDE

## Environmental/Mechanical Specifications on page F5

|                            |                                                  |                                  |                                    |
|----------------------------|--------------------------------------------------|----------------------------------|------------------------------------|
| <b>Package</b>             |                                                  | <b>FMT11 D 20 C 1 29.4912MHz</b> | <b>Mode of Operation</b>           |
| F                          | = 1.3mm max. ht. / Ceramic Glass Sealed Package  |                                  | 1=Fundamental                      |
| F11                        | = 1.1mm max. ht. / Ceramic Glass Sealed Package  |                                  | 3=Third Overtone                   |
| FMT                        | = 1.3mm max. ht. / Seam Weld "Metal Lid" Package |                                  | 5=Fifth Overtone                   |
| FMT11                      | = 1.1mm max. ht. / Seam Weld "Metal Lid" Package |                                  |                                    |
| <b>Tolerance/Stability</b> |                                                  |                                  | <b>Operating Temperature Range</b> |
| A=±50/100                  | G=±20/10                                         |                                  | C=0°C to 70°C                      |
| B=±50/50                   | H=±10/10                                         |                                  | E=-20°C to 70°C                    |
| C=±30/50                   | J=±10/20                                         |                                  | F=-40°C to 85°C                    |
| D=±20/30                   |                                                  |                                  |                                    |
| E=±15/30                   |                                                  |                                  | <b>Load Capacitance</b>            |
| F=±10/50                   |                                                  |                                  | S=Series, XX=XXpF (Pico Farads)    |

## ELECTRICAL SPECIFICATIONS

Revision: 1996-D

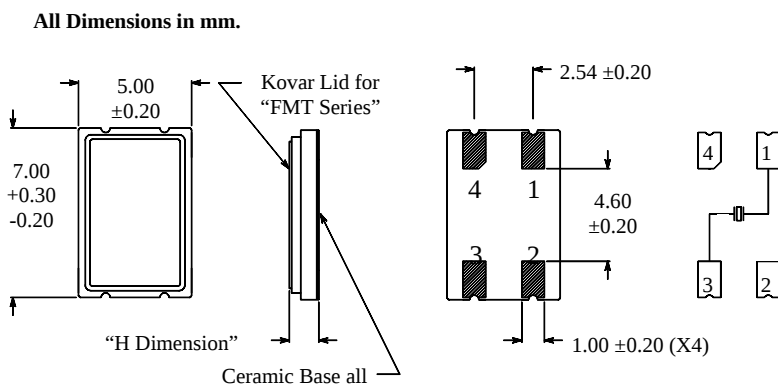
|                                                                          |                                                                                                    |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>Frequency Range</b>                                                   | 8.000MHz to 150.000MHz                                                                             |
| <b>Frequency Tolerance/Stability</b><br>A, B, C, D, E, F                 | See above for details!<br>Other Combinations Available. Contact Factory for Custom Specifications. |
| <b>Operating Temperature Range</b><br>"C" Option, "E" Option, "F" Option | 0°C to 70°C, -20°C to 70°C, -40°C to 85°C                                                          |
| <b>Aging @ 25°C</b>                                                      | ±3ppm / year Maximum                                                                               |
| <b>Storage Temperature Range</b>                                         | -55°C to 125°C                                                                                     |
| <b>Load Capacitance</b><br>"S" Option<br>"XX" Option                     | Series<br>8pF to 50pF                                                                              |
| <b>Shunt Capacitance</b>                                                 | 7pF Maximum                                                                                        |
| <b>Insulation Resistance</b>                                             | 500 Megaohms Minimum at 100Vdc                                                                     |
| <b>Drive Level</b>                                                       | 1mW Maximum, 100uW correlation                                                                     |

## EQUIVALENT SERIES RESISTANCE (ESR)

| Frequency (MHz)  | ESR (ohms) |  | Frequency (MHz)           | ESR (ohms) |
|------------------|------------|--|---------------------------|------------|
| 9.000 to 10.999  | 60         |  | 35.000 to 39.999 (3rd OT) | 60         |
| 11.000 to 13.999 | 50         |  | 40.000 to 49.999 (3rd OT) | 60         |
| 14.000 to 15.999 | 40         |  | 50.000 to 89.999 (3rd OT) | 60         |
| 16.000 to 40.000 | 30         |  | 90.000 to 150.000         | 100        |

## MECHANICAL DIMENSIONS

## Marking Guide



Line 1: Frequency  
Line 2: CEI YM  
CEI = Caliber Electronics  
YM = Date Code (year/month)

### Pad Connection

- 1 Crystal In/Out
- 2 Ground
- 3 Crystal in/Out
- 4 Ground

### NOTE: Dimensions for Specific Packages

- H = 1.3 Maximum for "F Series"
- H = 1.3 Maximum for "FMT Series" / "Metal Lid"
- H = 1.1 Maximum for "F11 Series"
- H = 1.1 Maximum for "FMT11 Series" / "Metal Lid"