

**PART NUMBERING GUIDE** **Environmental/Mechanical Specifications on page F5**

**FMT11 D 20 C 1 29.4912MHz**

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

**ELECTRICAL SPECIFICATIONS** **Revision: 1996-D**

<b>Frequency Range</b>	8.000MHz to 150.000MHz
<b>Frequency Tolerance/Stability</b> A, B, C, D, E, F	See above for details! Other Combinations Available. Contact Factory for Custom Specifications.
<b>Operating Temperature Range</b> "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> "S" Option "XX" Option	Series 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 39.990 (3rd OT)	60
11.000 to 13.999	50		40.000 to 49.990 (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**

All Dimensions in mm.

Top view: 5.00 ±0.20, 7.00 +0.30 -0.20, "H Dimension", Ceramic Base all

Side view: 2.54 ±0.20, 4.60 ±0.20, 1.00 ±0.20 (X4)

Pad view: 4, 1, 3, 2

**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"