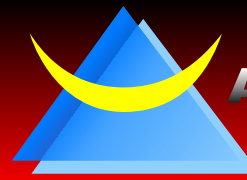


CSM2 and CSM3 SERIES

- HC-49/US Surface Mount Crystal
- AT Cut
- Wide Frequency Range
- RoHS Compliant



ASCEND

FREQUENCY DEVICES

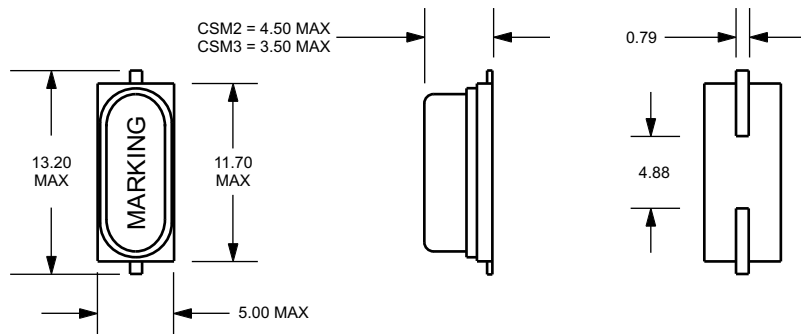
Electrical Specifications

| | |
|--------------------------------|--------------------------------|
| Frequency Range: | 3.200MHz to 75MHz |
| Frequency Tolerance/Stability: | Select from options below |
| Operating Temperature Range: | Select from options below |
| Storage Temperature Range: | -55°C to +125°C |
| Aging: | ±5ppm / first year Maximum |
| Shunt Capacitance: | 7pF Maximum |
| Load Capacitance: | Select from options below |
| Equivalent Series Resistance: | See ESR Table Below |
| Mode of Operation: | Fundamental or 3rd Overtone |
| Drive Level: | 1mWatts Maximum |
| Shock: | MIL-STD-883, Meth 2002, Cond B |
| Solderability: | MIL-STD-883, Meth 2003 |
| Solvent Resistance: | MIL-STD-202, Meth 215 |
| Vibration: | MIL-STD-883, Meth 2007, Cond A |
| Gross Leak Test: | MIL-STD-883, Meth 1014, Cond C |
| Fine Leak Test: | MIL-STD-883, Meth 1014, Cond A |

Equivalent Series Resistance Table

| Frequency Range | ESR (Ohms) | Mode / Cut | Frequency Range | ESR (Ohms) | Mode / Cut |
|------------------------|-------------|------------------|------------------------|-------------|---------------------|
| 3.200MHz to 3.999MHz | 150 Maximum | Fundamental / AT | 12.000MHz to 14.999MHz | 50 Maximum | Fundamental / AT |
| 4.000MHz to 4.999MHz | 120 Maximum | Fundamental / AT | 15.000MHz to 19.999MHz | 40 Maximum | Fundamental / AT |
| 5.000MHz to 5.999MHz | 100 Maximum | Fundamental / AT | 20.000MHz to 33.000MHz | 30 Maximum | Fundamental / BT |
| 6.000MHz to 7.999MHz | 90 Maximum | Fundamental / AT | 24.576MHz to 29.999MHz | 100 Maximum | Third Overtone / AT |
| 8.000MHz to 9.999MHz | 70 Maximum | Fundamental / AT | 30.000MHz to 75.000MHz | 80 Maximum | Third Overtone / AT |
| 10.000MHz to 11.999MHz | 50 Maximum | Fundamental / AT | | | |

Mechanical Dimensions



MARKING

Line 1: (X)XX.XXXR
 (X) = Internal Factory Code
 "R" = RoHS Compliant

ALL DIMENSIONS
 IN MILLIMETERS

Part Numbering Guide

CSM2 A A 1 20 1 - 33.000M - TR

Series

CSM2 = HC-49/US SMD 4.5mm
 CSM3 = HC-49/US SMD 3.5mm

Frequency Tolerance

A = ±5ppm E = ±25ppm
 B = ±10ppm F = ±30ppm
 C = ±15ppm G = ±50ppm
 D = ±20ppm H = ±100ppm

Frequency Stability

A = ±5ppm E = ±25ppm
 B = ±10ppm F = ±30ppm
 C = ±15ppm G = ±50ppm
 D = ±20ppm H = ±100ppm

Temperature Range

1 = -10°C to +60°C
 2 = -20°C to +70°C
 3 = -40°C to +85°C

Not all temperature/stability options are available. Please consult with factory for current capabilities

Packaging

Blank = Bulk
 XX(X) = Value-Add Option

Frequency

Mode of Operation

1 = AT Fundamental
 2 = BT Fundamental
 3 = 3rd Overtone

Load Capacitance

SR = Series 16 = 16pF
 08 = 8pF 18 = 18pF
 09 = 9pF 20 = 20pF
 10 = 10pF 32 = 32pF
 12 = 12pF XX = Other

