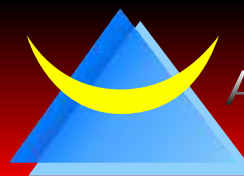


CSM2 and CSM3 SERIES

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



ASCEND

FREQUENCY DEVICES

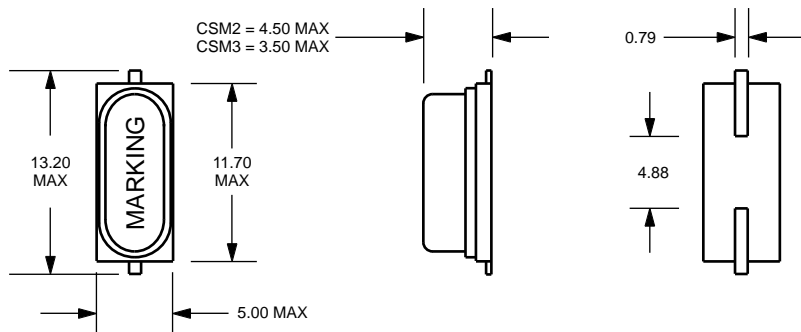
Electrical Specifications

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 per 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:	1mWatt 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 30.000MHz	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

