

- ▶ Compact and low profile
- ▶ RoH Compliant (2011/65/EU)
- ▶ MSL 1
- ▶ Lead Finish: Au

# CSM-8M

## SMD QUARTZ CRYSTAL

The CSM-8M is a miniature SMD Crystal with a 7.0 x 5.0 mm footprint. This seam welded metal lid/ceramic package crystal is ideal for PCMCIA ethernet and fax modem card applications.

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	CSM-8M			UNITS
		MIN	TYP	MAX	
Frequency Range		6.000		100.000	MHz
Frequency Tolerance	at +25°C			± 30 *	ppm
Frequency Stability	-10 to +70°C			± 50 *	ppm
Shunt Capacitance				5	pF
Load Capacitance	Specify in P/N	8	20	Series	pF
Drive Level				100	µW
Operating Temperature	Standard *	-10		+70	°C
Storage Temperature		-55		+125	°C
Aging (Per Year)	@ +25°C ±3°C			±5	ppm

### EQUIVALENT SERIES RESISTANCE/MODE OF OSCILLATION

FREQUENCY RANGE (MHz)	MODE OF OSC	MAX ESR Ω	FREQUENCY RANGE (MHz)	MODE OF OSC	MAX ESR Ω
6.000 ~ 7.999	Fundamental	70	16.000 ~ 42.000	Fundamental	40
8.000 ~ 15.999	Fundamental	60	28.000 ~ 100.000	3rd OT	60

### DIMENSIONS (mm)

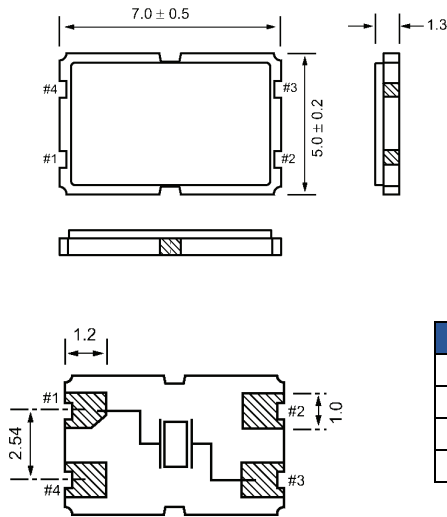


Figure 1) Top, Side, Bottom and End views

Pad Connections	
1	In/Out
2	**Gnd
3	In/Out
4	**Gnd

\*\* Pad 2 & 4 is tied to metal cover and can be tied to ground or no connected

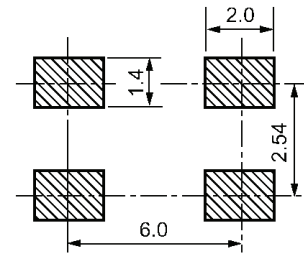


Figure 2) Suggested Land Pattern

PART NUMBERING GUIDE: Example ECS-200-20-20B-TR

ECS - Frequency Abbreviation - Load Capacitance - Package

200 = 20.000 MHz  
See P/N Guide

20 = 20 pF  
S=Series

20BM =  
CSM-8M

Custom Options			
Tolerance	* Stability	Temp Range	Packaging
Blank = Std A = ± 25 ppm J = ± 20 ppm R = ± 15 ppm C = ± 10 ppm	Blank = Std D = ± 100 ppm E = ± 50 ppm G = ± 30 ppm H = ± 25 ppm	Blank = Std M = -20 ~ +70°C N = -40 ~ +85°C P = -40 ~ +105°C S = -40 ~ +125°C	TR= Tape & Reel 1K/Reel