- 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 PCMIA ethernet and fax modem card applications.

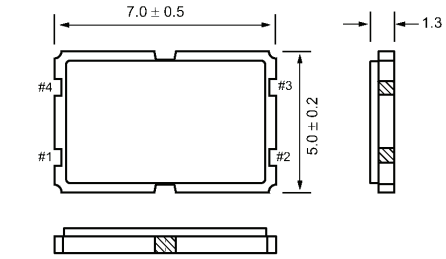
OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

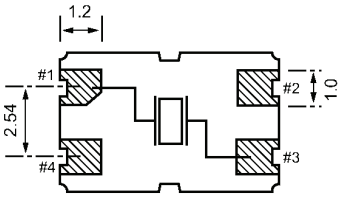
PARAMETERS	CONDITIONS	CSM-8M			UNITS
		MIN	TYP	MAX	
Frequency Range		6.000		100.000	MHz
Frequency Tolerance	at +25°C			± 30 *	ppm
Frequency Stability	-10 to +70°C			± 50 *	ppm
Shunt Capacitance				5	pF
Load Capacitance	Specify in P/N	8	20	Series	pF
Drive Level				100	µW
Operating Temperature	Standard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





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 1) Top, Side, Bottom and End views

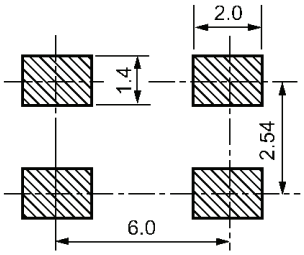


Figure 2) Suggested Land Pattern

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

Blank = Std
A = ± 25 ppm
J = ± 20 ppm
R = ± 15 ppm
C = ± 10 ppm

*** Stability**

Blank = Std
D = ± 100 ppm
E = ± 50 ppm
G = ± 30 ppm
H = ± 25 ppm
T = ± 20 ppm
W = ± 15 ppm
K = ± 10 ppm

Temp Range

Blank = Std
M = -20 ~ +70°C
N = -40 ~ +85°C
P = -40 ~ +105°C
S = -40 ~ +125°C
U = -55 ~ +125°C

- Packaging

TR= Tape & Reel 1K/Reel

Consult Factory for available stability options over extended temp range.

Rev. 2/16

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