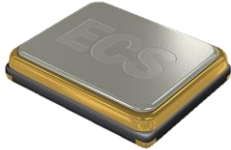


The CSM-8M is a miniature SMD Crystal with a 7.0 x 5.0 mm footprint. This seam welded metal lid/ceramic package crystal is ideal for PCMIA ethernet applications.

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

CSM-8M SMD CRYSTAL



- Compact and Low Profile
- RoHS Compliant
- MSL: 1
- Lead Finish: Au

DIMENSIONS (mm)

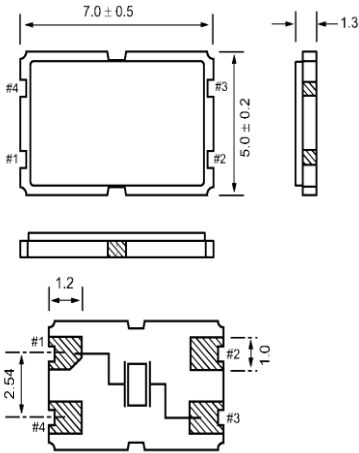


Figure 1) Top, Side, and Bottom

Crystal is symmetrical, pad 1 & 3 are interchangeable.
Chamfer on the bottom pad has no electrical significance.

PARAMETERS	CONDITIONS	CSM-8M			UNITS
		MIN	TYP	MAX	
Frequency		6.000		42.000	MHz
Mode of Oscillation	Fundamental				
Frequency Tolerance*	@ +25°C			± 30	ppm
Frequency Stability*	-10 ~ +70°C			± 50	ppm
Shunt Capacitance	Co			5	pF
Load Capacitance	Specify in P/N	8	20	Series	pF
Drive Level	DL			100	μW
Operating Temperature*	Topr	-10		+70	°C
Storage Temperature	Tstg	-55		+125	°C
Aging (First Year)	@ +25°C ±3°C			±5	ppm

Frequency (MHz)	ESR Ω Max.
6.000 ~ 7.999	70
8.000 ~ 15.999	60
16.000 ~ 42.000	40

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

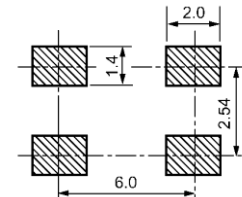


Figure 2) Suggested land pattern

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

ECS - FREQUENCY ABBREVIATION		LOAD CAPACITANCE	PACKAGE	Tolerance Range	AVAILABLE OPTIONS		PACKAGING
					Stability	Temp	
ECS	200 = 20.000 MHz See P/N Guide	20 = 20 pF S = Series	20BM = CSM-8M	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 T = ± 20 ppm † W = ±15 ppm † K = ±10 ppm †	Blank= Std L = -10 ~ +70°C M = -20 ~ +70°C Y = -30 ~ +85°C N = -40 ~ +85°C P = -40 ~ +105°C S = -40 ~ +125°C U = -55 ~ +125°C	TR = Tape & Reel 1K/Reel

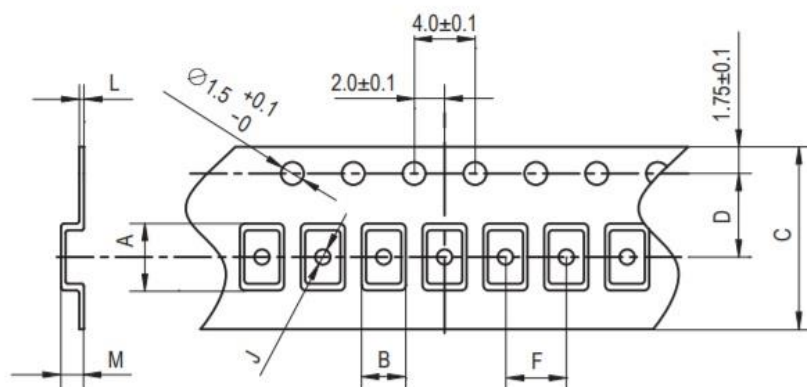
* Specify available options in P/N.

* Specify available options in P/N.

† Contact ECS for availability over extended temp range.

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POCKET TAPE DIMENSIONS (mm)



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
7.3	5.3	16.0	7.5	8.0	1.5	0.3	1.9	178	1000pcs

SOLDER PROFILE

Peak solder Temp +260°C Max 10 sec Max.

2 Cycles Max.

MSL 1, Lead Finish Au

DEVELOPED FREQUENCIES

Abbreviation	Frequency (MHZ)
060	6.000
073	7.3728
080	8.000
098.3	9.8304
100	10.000
120	12.000
147.4	14.7456
160	16.000
184	18.432
200	20.000
240	24.000
250	25.000
330	33.000

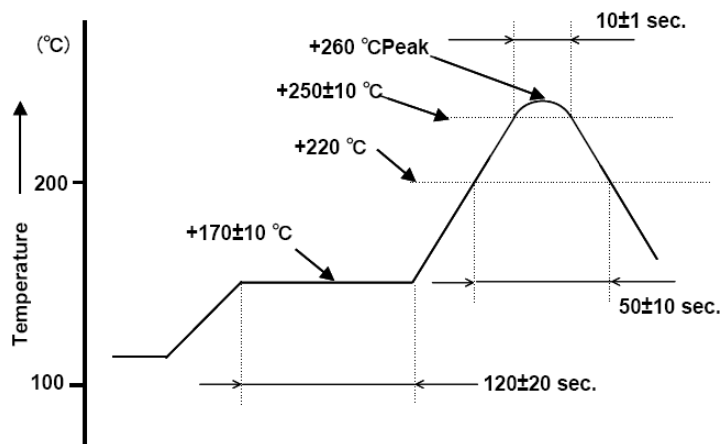


Figure 1) Suggested Reflow Profile