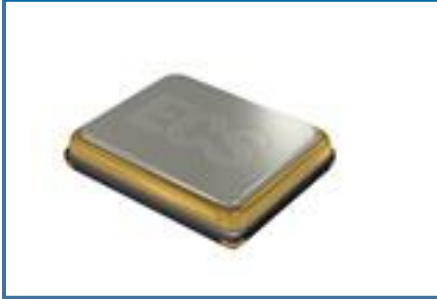


CSM-8Q SMD CRYSTAL



- Compact and Low Profile
- 7.0 x 5.0 mm Footprint
- RoHS Compliant
- AEC-Q200 Qualified

DIMENSIONS (mm)

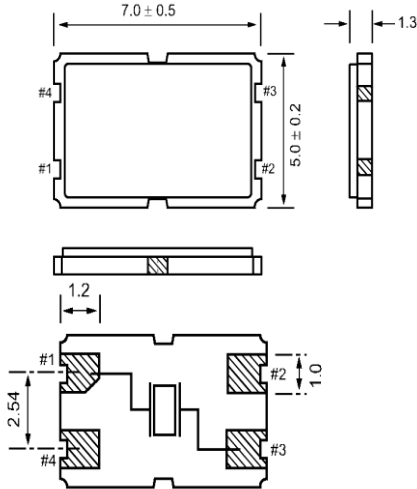


Figure 1) Top, Side, and Bottom

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

Pad Connections

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

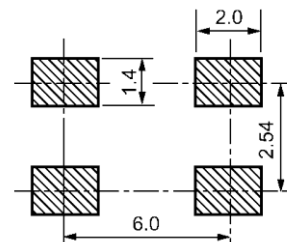


Figure 2) Suggested land

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	CSM-8Q			UNITS
		MIN	TYP	MAX	
Frequency		8.000		36.000	MHz
Mode of Oscillation	Fundamental				
Frequency Tolerance*	@ +25°C			± 30	ppm
Frequency Stability*	-55 ~ +125°C (DU Option)			± 100	ppm
Shunt Capacitance	Co			7	pF
Load Capacitance	Specify in P/N	10	20	Series	pF
Drive Level	DL			100	μW
Operating Temperature*	T _{opr} (DU Option)	-55		+125	°C
Storage Temperature	T _{stg}	-55		+125	°C
Aging (First Year)	@ +25°C ±3°C			±5	ppm

Frequency (MHz)	ESR Ω Max.
8.000 ~ 15.999	60
16.000 ~ 36.000	40

PART NUMBERING GUIDE: Example ECS-200-20-20BQ-DU-TR

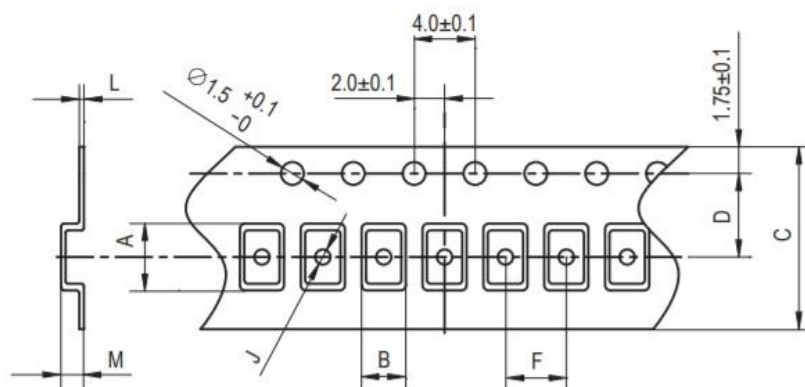
ECS - FREQUENCY ABBREVIATION		LOAD CAPACITANCE	PACKAGE	AVAILABLE OPTIONS			PACKAGING
				Tolerance	Stability	Temp Range	
ECS	200 = 20.000 MHz See P/N Guide	20 = 20 pF S = Series	20BQ = CSM-8Q	Blank = Std A = ± 25 ppm J = ± 20 ppm R = ± 15 ppm C = ± 10 ppm	Blank= Std D= ±100 ppm E = ± 50 ppm G = ± 30 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.							
† Contact ECS for availability over extended temp range.							
Rev.2017							

* Specify available options in P/N.

† Contact ECS for availability over extended temp range.

Rev.2017

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)
080	8.000
098.3	9.83040
100	10.000
110.5	11.0592
120	12.000
150	15.000
160	16.000
200	20.000
240	24.000
250	25.000

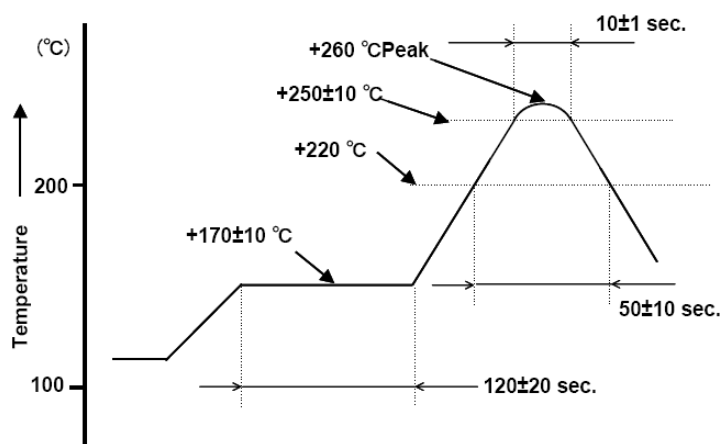


Figure 1) Suggested Reflow Profile