- Case Ground
- Industry Std. HC-49US Package
- Extended Temp Range Option
- RoHS Compliant

CSM-7X-3L
SMD CRYSTAL

The CSM-7X-3L is a low profile SMD Crystal with case ground is ideal for applications that require a case ground.

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	CSM-7X-3L			UNITS
		MIN	TYP	MAX	
Frequency Range		3.57		70.000	MHz
Frequency Tolerance	at +25°C			± 30 *	ppm
Frequency Stability	-10 to +70°C			± 50 *	ppm
Shunt Capacitance				7	pF
Load Capacitance	Specify in P/N	10	20	Series	pF
Drive Level				500	µW
Operating Temperature		-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
3.57 ~ 4.999	Fundamental	150	13.000 ~ 19.999	Fundamental	40
5.000 ~ 5.999	Fundamental	80	20.000 ~ 30.000	Fundamental	30
6.000 ~ 6.999	Fundamental	70	30.100 ~ 39.999	3rd Overtone	100
7.000 ~ 8.999	Fundamental	60	40.000 ~ 70.000	3rd Overtone	80
9.000 ~ 12.999	Fundamental	50			

DIMENSIONS (mm)

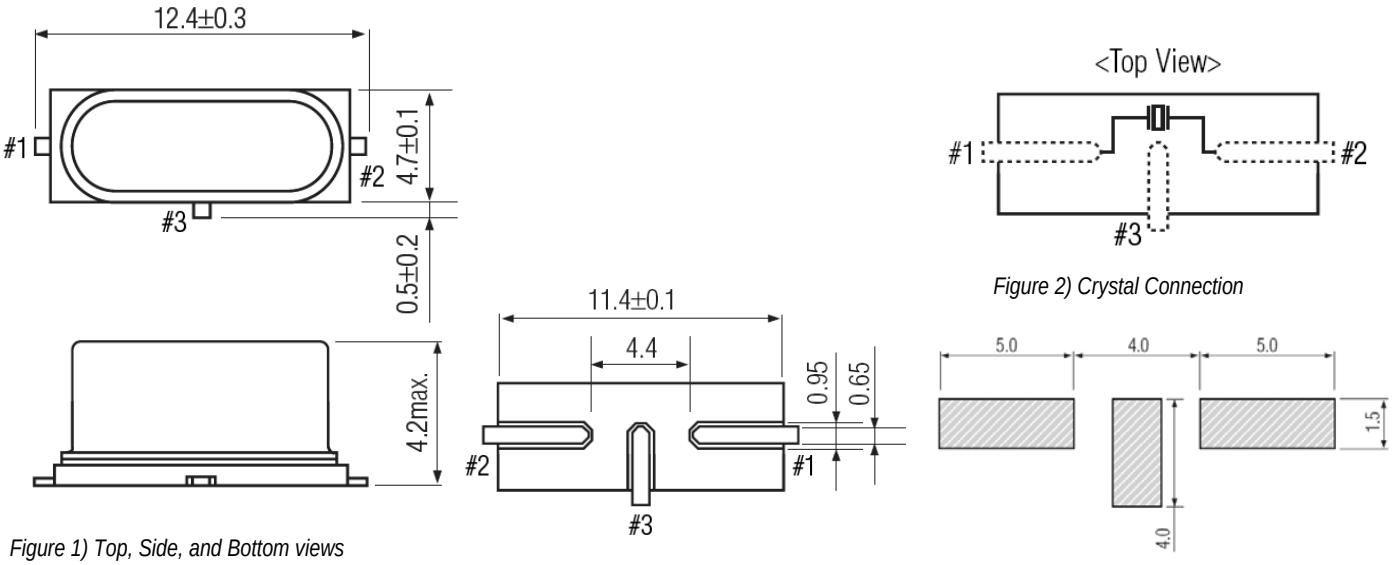


Figure 1) Top, Side, and Bottom views

Figure 2) Crystal Connection

Figure 3) Suggested Land Pattern

PART NUMBERING GUIDE: Example ECS-200-20-5G3XDS-TR

ECS - Frequency Abbreviation - Load Capacitance - Package

Frequency Abbreviation	Load Capacitance	Package
200 = 20.000 MHz See P/N Guide	20 =20 pF S=Series	5G3X = CSM-7X-3L

Custom Options

Tolerance	Stability	Temp Range	- Packaging
Blank = Std A = ± 25 ppm C = ± 10 ppm	Blank = Std D = ± 100 ppm E = ± 50 ppm G = ± 30 ppm H = ± 25 ppm K = ± 10 ppm	Blank = Std M = -20 ~ +70°C N = -40 ~ +85°C P = -40 ~ +105°C S = -40 ~ +125°C U = -55 ~ +125°C	TR= Tape & Reel 1K/Reel

Rev 11/07

1105 South Ridgeview Road • Olathe, KS 66062 • Phone: 913.782.7787 • Fax: 913.782.6991 • www.ecsxtal.com