

- ▶ Cost effective
- ▶ Case Ground
- ▶ Extended Temp Range Option
- ▶ Pb Free/RoHS Compliant
- ▶ MSL 1

CSM-7X-3L

SMD Crystal

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

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	CSM-7X-3L			UNITS
		MIN	TYP	MAX	
Frequency Range	f_o	3.57		70.00	MHz
Frequency Tolerance	at +25°C			± 30	ppm
Frequency Stability	Standard -10 to +70°C			± 50	ppm
Shunt Capacitance	C_o			7	pF
Load Capacitance (CL)	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			

PACKAGE DIMENSIONS (mm)

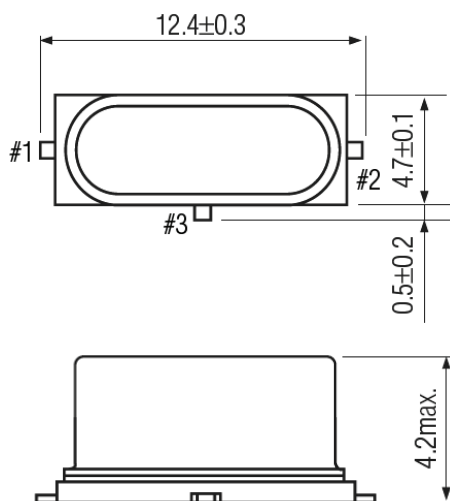


Figure 1) Top, Side, Bottom and End views

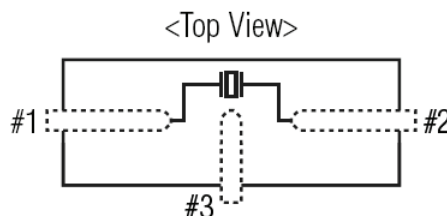
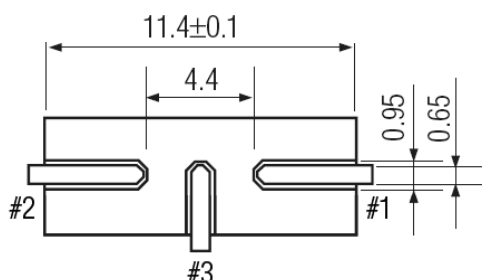


Figure 2) Crystal Connection

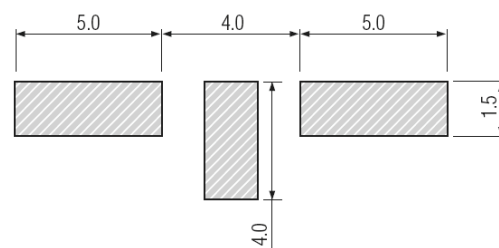


Figure 2) Suggested Land Pattern

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

ECS - 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	Temperature	Packaging
Blank = ±30 ppm A = ± 25 ppm J = ± 20 ppm R = ± 15 ppm C = ± 10 ppm	Blank = ±50 ppm D = ± 100 ppm E = ± 50 ppm G = ± 30 ppm H = ± 25 ppm T = ± 20 ppm W = ± 15 ppm K = ± 10 ppm	Blank = -10 ~ +70°C 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

*Consult Factory for available stability options over extended temp range

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ECS:

[ECS-36-20-5G3DS-TR](#) [ECS-143-20-5G3DS-TR](#) [ECS-98.3-20-5G3DS-TR](#) [ECS-240-20-5G3DS-TR](#) [ECS-147.4-20-5G3DS-TR](#) [ECS-200-20-5G3DS-TR](#) [ECS-160-20-5G3DS-TR](#) [ECS-184-20-5G3DS-TR](#) [ECS-35-20-5G3DS-TR](#) [ECS-100-20-5G3DS-TR](#) [ECS-270-20-5G3DS-F-TR](#) [ECS-110.5-20-5G3DS-TR](#) [ECS-120-32-5G3DS-TR](#) [ECS-245.7-20-5G3DS-TR](#) [ECS-122.8-20-5G3DS-TR](#) [ECS-80-20-5G3DS-TR](#) [ECS-60-20-5G3DS-TR](#) [ECS-40-20-5G3DS-TR](#) [ECS-250-20-5G3DS-F-TR](#) [ECS-120-18-5G3DS-TR](#) [ECS-40-20-5G3XDS-TR](#) [ECS-35-18-5G3XDS-TR](#) [ECS-250-20-5G3XDS-F-TR](#) [ECS-60-20-5G3XDS-TR](#) [ECS-200-20-5G3XDS-TR](#) [ECS-143-20-5G3XDS-TR](#) [ECS-100-20-5G3XDS-TR](#) [ECS-240-20-5G3XDS-TR](#) [ECS-160-20-5G3XDS-TR](#) [ECS-110.5-20-5G3XDS-TR](#) [ECS-122.8-20-5G3XDS-TR](#) [ECS-80-20-5G3XDS-TR](#) [ECS-120-18-5G3XDS-TR](#) [ECS-36-20-5G3XDS-TR](#) [ECS-300-20-5G3XDS-TR](#) [ECS-250-20-5G3X-A-E-N-TR](#) [ECS-184-20-5G3XDS-TR](#) [ECS-120-32-5G3XDS-TR](#) [ECS-98.3-20-5G3XDS-TR](#) [ECS-270-20-5G3XDS-F-TR](#) [ECS-147.4-20-5G3XDS-TR](#)