

- ▶ -40 to +85°C Temp Range
- ▶ Industry Std. Footprint
- ▶ Pb Free/RoHS Compliant

# CSM-7XDN SMD CRYSTAL

The CSM-7XDN is the industrial temperature range version of our standard CSM-7X crystal.

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	CSM-7XDN			UNITS
		MIN	TYP	MAX	
Frequency Range	f <sub>o</sub>	3.57		70.000	MHz
Frequency Tolerance	at +25°C			± 30	ppm
Frequency Stability	-40 to +85°C			± 100	ppm
Shunt Capacitance	C <sub>o</sub>			7	pF
Load Capacitance (CL)	Specify in P/N	10	20	Series	pF
Drive Level				500	μW
Operating Temperature		-40		+85	°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	26.000 ~ 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)

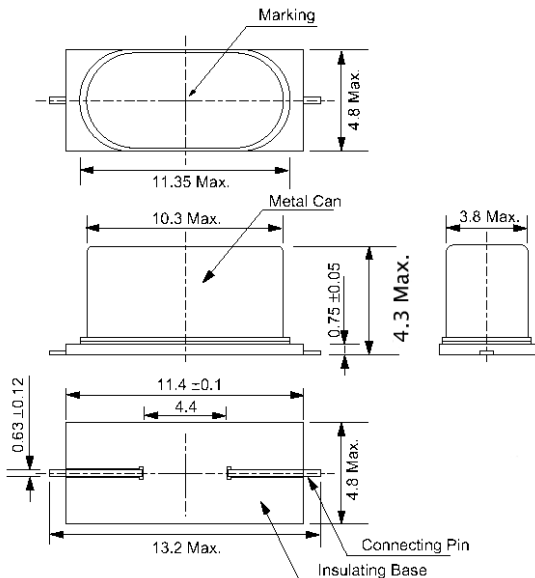


Figure 1) Top, Side, Bottom and End views

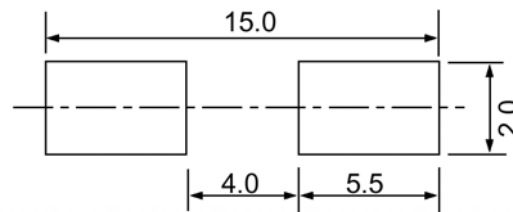


Figure 2) Suggested Land Pattern

## PART NUMBERING GUIDE: Example ECS-200-20-5PXDN-TR

ECS - Frequency Abbreviation - Load Capacitance - Package

Stability

Temperature

- Packaging

200 = 20.000 MHz  
See P/N Guide

20 = 20 pF  
S=Series

5PX = CSM-7X

D= ± 100 ppm

N= -40 ~ +85°C

TR= Tape & Reel  
1K/Reel