



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

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- ▶ -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)

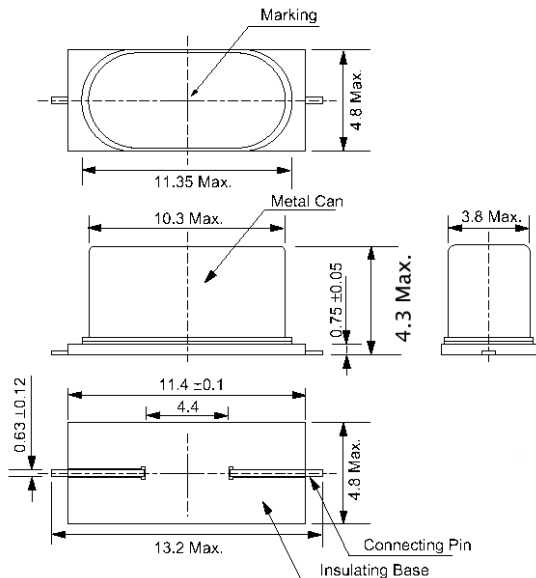


Figure 1) Top, Side, Bottom and End views

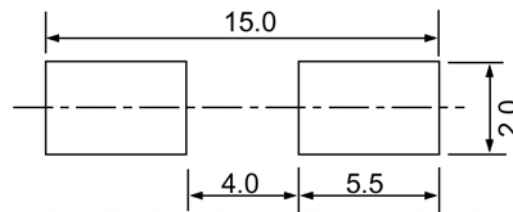


Figure 2) Suggested Land Pattern

## 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