



- ▶ Cost effective
- ▶ Low profile
- ▶ Pb Free/RoHS Compliant
- ▶ Tape & Reel (1,000 pcs)

CSM-7X SMD Quartz Crystal

The CSM-7X is an excellent choice for the SMD versions of the HC-49USX leaded crystal. The CSM-7X has a case height of 4.3 mm Max in a resistance weld metal package. A package profile of 3.2 mm Max is also available.

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	CSM-7X			UNITS
		MIN	TYP	MAX	
Frequency Range	f _o	3.57		70.000	MHz
Frequency Tolerance	at +25°C			± 30	ppm
Frequency Stability ref @ 25°C	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	Standard	-10		+70	°C
Storage Temperature		-55		+125	°C
Aging (First 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			

DIMENSIONS (mm)

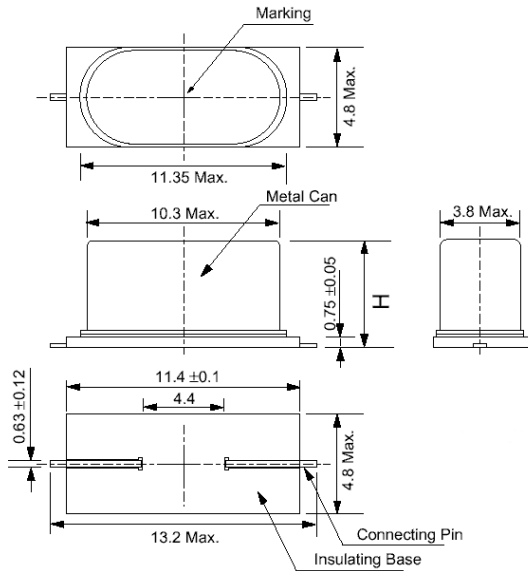


Figure 1) Top, Side and Bottom views

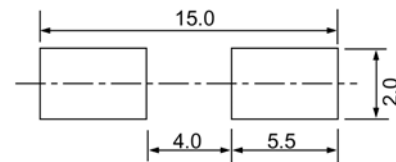


Figure 2) Suggested Land Pattern

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

ECS - Frequency Abbreviation - Load Capacitance - Package

200 = 20.000 MHz
See P/N Guide

20 = 20 pF
S=Series

5PX = 4.3 mm
5PLX = 3.2 mm

A= ±25 ppm
C= ±10 ppm

D= ±100 ppm
E= ±50 ppm
G= ±30 ppm
H= ±25 ppm
K= ±10 ppm

L= -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-200-20-5PX-TR](#) [ECS-200-20-5PX](#) [ECS-040-18-5PX-TR](#) [ECS-110.5-20-5PX-TR](#) [ECS-110.5-32-5PX-TR](#) [ECS-120-S-5PX-TR](#) [ECS-122.8-20-5PX-TR](#) [ECS-122.8-S-5PX-TR](#) [ECS-160.003-18-5PX-TR](#) [ECS-160-20-5PX-TR](#) [ECS-160-S-5PX-TR](#) [ECS-184-S-5PX-TR](#) [ECS-204.8-20-5PX-TR](#) [ECS-245.7-20-5PX-TR](#) [ECS-35-17-5PX-TR](#) [ECS-36-S-5PX-TR](#) [ECS-41-20-5PX-TR](#) [ECS-42-12-5PX-TR](#) [ECS-480-20-5PX-TR](#) [ECS-50-S-5PX-TR](#) [ECS-60-20-5PX-TR](#) [ECS-60-32-5PX-TR](#) [ECS-60-S-5PX-TR](#) [ECS-61-32-5PX-TR](#) [ECS-65.5-S-5PX-TR](#) [ECS-80-32-5PX-TR](#) [ECS-80-S-5PX-TR](#) [ECS-92.1-S-5PX-TR](#) [ECS-100-S-5PX-TR](#) [ECS-110.5-S-5PX-TR](#) [ECS-120.003-18-5PX-TR](#) [ECS-143-S-5PX-TR](#) [ECS-250-18-5PX-TR](#) [ECS-40.3-20-5PX-TR](#) [ECS-40-20-5PX-TR](#) [ECS-49-20-5PX-TR](#) [ECS-49-S-5PX-TR](#) [ECS-50-20-5PX-TR](#) [ECS-73-20-5PX-TR](#) [ECS-80-18-5PX-TR](#) [ECS-98.3-S-5PX-TR](#) [ECS-270-18-5PX-F](#) [ECS-36-20-5PX-TR](#) [ECS-100-18-5P-TR](#) [ECS-300-12-5PX-F-CEP-TR](#) [ECS-041-20-5PX-DN](#) [ECS-049-20-5PX-DN](#) [ECS-250-18-5PXD-TR](#) [ECS-36-20-5PX](#) [ECS-200-S-5PX-TR](#) [ECS-184-20-5PX-TR](#) [ECS-040-S-5PX-TR](#) [ECS-044-20-5PX-TR](#) [ECS-180-S-5PX-TR](#) [ECS-035-S-5PX-TR](#) [ECS-196.6-20-5PX-TR](#) [ECS-100-18-5PX-TR](#) [ECS-240-20-5PX-TR](#) [ECS-184-18-5PX-TR](#) [ECS-240-12-5PX-TR](#) [ECS-092.1-S-5PX-TR](#) [ECS-150-S-5PX-TR](#) [ECS-040.3-S-5PX-TR](#) [ECS-200-18-5PX-TR](#) [ECS-240-16-5PX-TR](#) [ECS-147.4-S-5PX-TR](#) [ECS-270-18-5PX-F-TR](#) [ECS-059.9-20-5PX-TR](#) [ECS-080-20-5PX-TR](#) [ECS-200-16-5PX-TR](#) [ECS-051-20-5PX-TR](#) [ECS-120-32-5PX-TR](#) [ECS-196.6-S-5PX-TR](#) [ECS-135.6-12-5PX-TR](#) [ECS-042-16-5PX-TR](#) [ECS-060-20-5PX-TR](#) [ECS-098.3-20-5PX-TR](#) [ECS-240-S-5PX-TR](#) [ECS-147.4-20-5PX-TR](#) [ECS-143-20-5PX-TR](#) [ECS-073-S-5PX-TR](#) [ECS-052-32-5PX-TR](#) [ECS-120-20-5PX-TR](#) [ECS-120-18-5PX-TR](#) [ECS-102.45-16-5PX-TR](#) [ECS-092.1-20-5PX-TR](#) [ECS-110.5-18-5PXEN-TR](#) [ECS-110-18-5PXEN-TR](#) [ECS-122.8-18-5PXEN-TR](#) [ECS-135-18-5PXEN-TR](#) [ECS-143-18-5PXEN-TR](#) [ECS-147.4-18-5PXEN-TR](#) [ECS-160.003-18-5PXEN-TR](#) [ECS-160-18-5PXEN-TR](#) [ECS-162.57-18-5PXEN-TR](#) [ECS-163-18-5PXEN-TR](#) [ECS-196.6-18-5PXEN-TR](#) [ECS-200-18-5PXEN-TR](#) [ECS-221-18-5PXEN-TR](#) [ECS-240-18-5PXEN-TR](#)