

- ▶ Cost effective
- ▶ Low profile
- ▶ Industrial Temp Range
- ▶ RoHS Compliant



CSM-12

SMD QUARTZ CRYSTAL

The CSM-12 is a low profile SMD Crystal with a 11.8 x 5.5 mm footprint. This cost effective package offers a height of 2.5 mm.

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	CSM-12			UNITS
		MIN	TYP	MAX	
Frequency Range		3.579		30.000	MHz
Frequency Tolerance	at +25°C			± 30	ppm
Frequency Stability	-10 to +70°C			± 50	ppm
	-40 to +85°C			± 100	ppm
Load Capacitance	Specify in P/N	10	20	Series	pF
Drive Level				100	μW
Operating Temperature		-40		+85	°C
Storage Temperature		-55		+125	°C
Shunt Capacitance				7	pF
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
3.579 ~ 3.999	Fundamental	200	10.000 ~ 13.999	Fundamental	80
4.000 ~ 5.999	Fundamental	150	14.000 ~ 24.999	Fundamental	50
6.000 ~ 9.999	Fundamental	100	25.000 ~ 30.000	Fundamental	40

DIMENSIONS (mm)

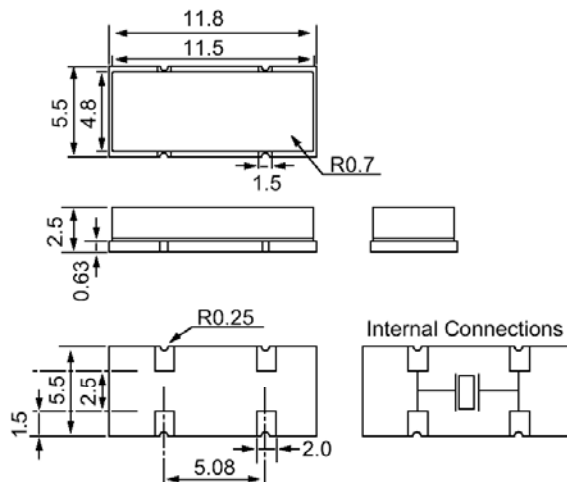


Figure 1) Top, Side, Bottom and End views

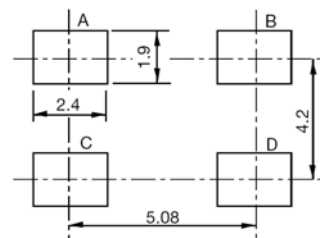


Figure 2) Suggested Land Pattern

PART NUMBERING GUIDE: Example ECS-200-20-18-TR

ECS - Frequency Abbreviation - Load Capacitance - Package - Packaging

200 = 20.000 MHz
See P/N Guide

20 = 20 pF
S=Series

18 =
CSM-12

TR= Tape
& Reel
1K/Reel

Mouser Electronics

Authorized Distributor

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

ECS:

[ECS-160-S-18](#) [ECS-200-S-18](#) [ECS-143-S-18](#) [ECS-196.6-S-18](#) [ECS-184-S-18](#) [ECS-100-S-18](#) [ECS-120-S-18](#)
[ECS-110.5-S-18](#) [ECS-110.5-S-18-TR](#) [ECS-143-S-18-TR](#) [ECS-200-S-18-TR](#) [ECS-120-S-18-TR](#) [ECS-143-20-18-TR](#)
[ECS-35-17-18-TR](#) [ECS-40-20-18-TR](#) [ECS-98.3-20-18-TR](#) [ECS-100-18-18-TR](#) [ECS-110.5-18-18-TR](#) [ECS-112.896-](#)
[18-18-TR](#) [ECS-122.8-18-18-TR](#) [ECS-147.4-18-18-TR](#) [ECS-153.6-18-18-TR](#) [ECS-160-18-18-TR](#) [ECS-166.66-18-18-](#)
[TR](#) [ECS-184-18-18-TR](#) [ECS-200-18-18-TR](#) [ECS-204.8-18-18-TR](#) [ECS-221-18-18-TR](#) [ECS-240-18-18-TR](#) [ECS-](#)
[245.7-18-18-TR](#) [ECS-250-18-18-TR](#) [ECS-35-18-18-TR](#) [ECS-36-18-18-TR](#) [ECS-40-18-18-TR](#) [ECS-41-18-18-TR](#)
[ECS-49-18-18-TR](#) [ECS-50-18-18-TR](#) [ECS-60-18-18-TR](#) [ECS-61-18-18-TR](#) [ECS-73-18-18-TR](#) [ECS-80-18-18-TR](#)
[ECS-36-20-18-TR](#) [ECS-040-S-18-TR](#) [ECS-036-S-18-TR](#) [ECS-073-S-18-TR](#) [ECS-098.3-S-18-TR](#) [ECS-080-S-18-TR](#)
[ECS-049-S-18-TR](#) [ECS-240-S-18-TR](#) [ECS-49-20-18-TR](#) [ECS-98.3-S-18-TR](#) [ECS-40-S-18-TR](#) [ECS-80-S-18-TR](#)
[ECS-73-S-18-TR](#) [ECS-80-20-18-TR](#) [ECS-100-S-18-TR](#) [ECS-240-20-18-TR](#) [ECS-196.6-S-18-TR](#) [ECS-160-S-18-TR](#)
[ECS-49-S-18-TR](#) [ECS-110.5-20-18-TR](#) [ECS-36-S-18-TR](#) [ECS-240-16-18-TR](#) [ECS-200-20-18-TR](#) [ECS-61-32-18-TR](#)
[ECS-36-18-18DN-TR](#) [ECS-49-20-18](#)