

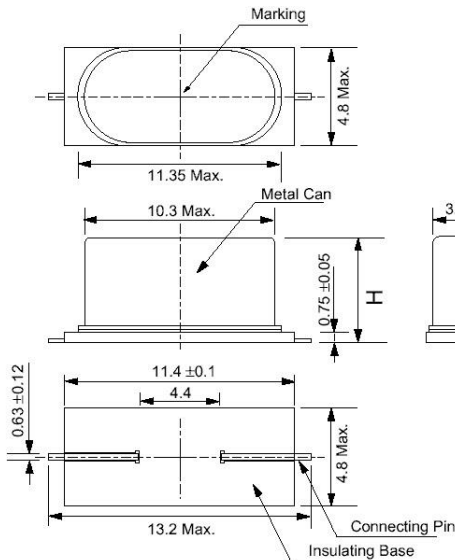
The CSM-7X is an excellent choice for a low cost SMD Crystal. The CSM-7X (5PX) has a case height of 4.3 mm Max. in a resistance weld metal package. Lower profile package height of 3.2 mm is available with the (5PLX) package.

CSM-7X SMD CRYSTAL



- Cost Effective
- Low Profile
- Industry Standard Footprint
- Pb Free/RoHS Compliant

DIMENSIONS (mm)



Height "H" Max.

-5PX	4.3 mm
5PLX	3.2 mm

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	CSM-7X			UNITS
		MIN	TYP	MAX	
Frequency		3.57		70.000	MHz
Frequency Tolerance*	@ +25°C			± 30	ppm
Frequency Stability*	Standard -10 ~ +70°C			± 50	ppm
Shunt Capacitance	Co			7	pF
Load Capacitance	Specify in P/N	10	20	Series	pF
Drive Level	DL			500	μW
Operating Temperature*	T _{opr}	-10		+70	°C
Storage Temperature	T _{stg}	-55		+125	°C
Aging (First Year)	@ +25°C ±3°C			±5	ppm

EQUIVALENT SERIES RESISTANCE/MODE OF OSCILLATION

Frequency (MHz)	ESR Ω Max.	Mode of Osc.
3.57 ~ 4.999	150	Fundamental
5.000 ~ 5.999	80	Fundamental
6.000 ~ 6.999	70	Fundamental
7.000 ~ 8.999	60	Fundamental
9.000 ~ 12.999	50	Fundamental
13.000 ~ 19.999	40	Fundamental
20.000 ~ 40.000	30	Fundamental
40.000 ~ 70.000	80	3 rd Overtone

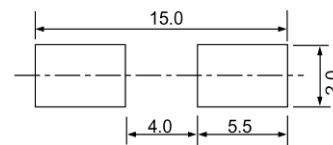


Figure 2) Suggested land

Figure 1) Top, Side, Bottom, and End

Crystal is symmetrical, pin 1 & 2 are interchangeable.

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

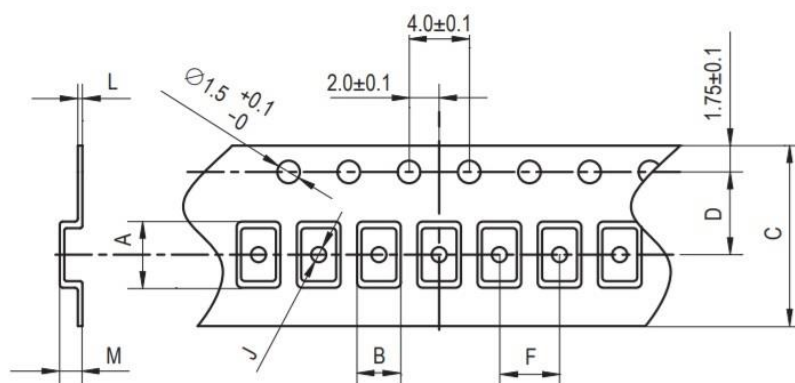
ECS - FREQUENCY ABBREVIATION		LOAD CAPACITANCE	PACKAGE	AVAILABLE OPTIONS			PACKAGING
				Tolerance	Stability	Temp Range	
ECS	200 = 20.000 MHz See P/N Guide	20 = 20 pF 10 = 10 pF S = Series	5PX = 4.3 mm 5PLX = 3.2 mm	Blank = Std A = ± 25 ppm J = ± 20 ppm R = ± 15 ppm C = ± 10 ppm	Blank= Std D= ±100 ppm E = ± 50 ppm G = ± 30 ppm H = ± 25 ppm T = ± 20 ppm † W = ±15 ppm † K = ± 10 ppm †	Blank= Std L = -10 ~ +70°C M = -20 ~ +70°C Y = -30 ~ +85°C N = -40 ~ +85°C P = -40 ~ +105°C S = -40 ~ +125°C U = -55 ~ +125°C	TR = Tape & Reel 1K/Reel
* Specify available options in P/N.							
† Contact ECS for availability over extended temp range.							
Rev.2017							

* Specify available options in P/N.

† Contact ECS for availability over extended temp range.

Rev.2017

POCKET TAPE DIMENSIONS (mm)



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
15.4	5.3	24.0	11.5	12.0	1.7	0.4	4.4	300	1000pcs

SOLDER PROFILE

Peak solder Temp +260°C Max 10 sec Max.

2 Cycles Max.

MSL 1, Lead Finish Sn/Cu Matte

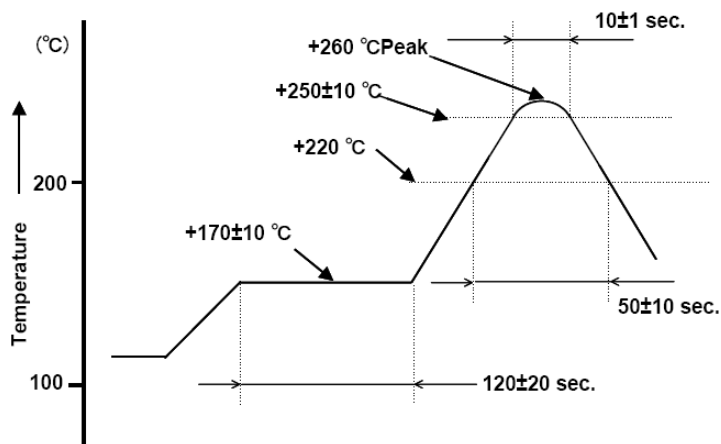


Figure 1) Suggested Reflow Profile

Mouser Electronics

Authorized Distributor

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

ECS:

[ECS-200-20-5PX-TR](#) [ECS-100-20-5PXDU-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-143-20-5PXDN-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-160-20-5PX-DN-TR](#) [ECS-300-12-5PX-F-CEP-TR](#) [ECS-041-20-5PX-DN](#) [ECS-049-20-5PX-DN](#) [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-100-20-5PX-DN-TR](#) [ECS-49-20-5PX-DN-TR](#) [ECS-092.1-20-5PX-TR](#) [ECS-40.3-20-5PX-DN-TR](#) [ECS-250-20-5PX-DN-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](#)