



**THE DATASHEET OF  
ECS-160-20-23A-TR**



The ECX-64A is a miniature SMD Crystal with a 6 x 3.5 mm 2 pad footprint. This cost effective package with a height of 1.1 mm is ideal for densely populated PCB applications

Request a Sample

## ECX-64A SMD CRYSTAL

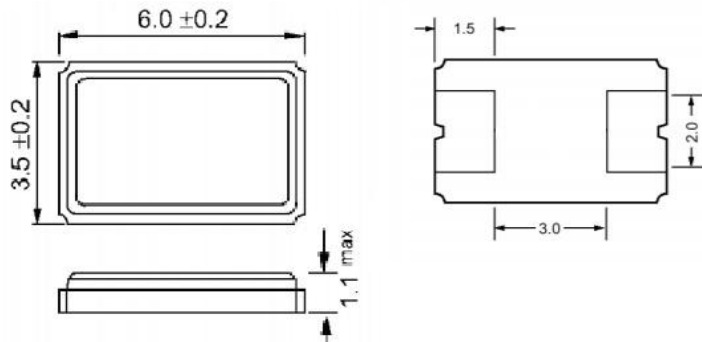


- Compact and Low Profile
- Industry Standard Footprint
- Extended Temp. Range Option
- RoHS Compliant
- 6 x 3.5 mm (2 Pad)

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECX-64A			UNITS
		MIN	TYP	MAX	
Frequency		8.000		50.000	MHz
Mode of Oscillation	Fundamental				
Frequency Tolerance*	@ +25°C			± 30	ppm
Frequency Stability*	-10 ~ +70°C			± 50	ppm
Shunt Capacitance	Co			7	pF
Load Capacitance	Specify in P/N	10	20	Series	pF
Drive Level	DL			100	μW
Operating Temperature*	T <sub>opr</sub>	-10		+70	°C
Storage Temperature	T <sub>stg</sub>	-55		+125	°C
Aging (First Year)	@ +25°C ±3°C			±5	ppm

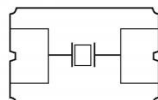
## DIMENSIONS (mm)



Frequency (MHz)	ESR Ω Max.
8.000 ~ 15.999	80
16.000 ~ 19.999	60
20.000 ~ 50.000	30

Figure 1) Top, Side, and Bottom

Crystal is symmetrical, pad 1 & 2 are interchangeable. Chamfer on the bottom pad has no electrical significance.



Pad Connections	
1	In/Out
2	Out/In

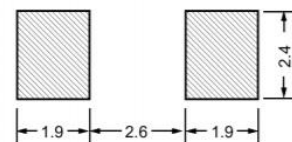


Figure 2) Suggested land

## PART NUMBERING GUIDE: Example ECS-200-20-23A-TR

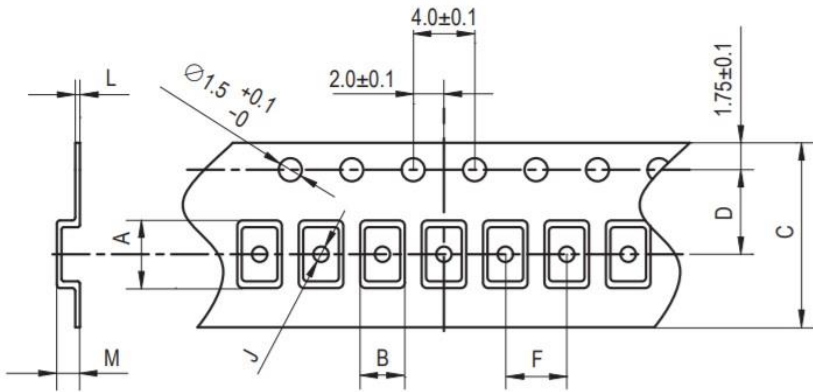
ECS - FREQUENCY ABBREVIATION	LOAD CAPACITANCE	PACKAGE	AVAILABLE OPTIONS			PACKAGING	
			Tolerance	Stability	Temp Range		
ECS	200 = 20.000 MHz See P/N Guide	20 = 20 pF S = Series	23A = ECX-64A	Blank = Std A = ± 25 ppm J = ± 20 ppm R = ± 15 ppm C = ± 10 ppm	Blank = Std D = ± 100 ppm E = ± 50 ppm G = ± 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.

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**POCKET TAPE DIMENSIONS (mm)**



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
6.4	3.9	12.0	5.5	8.0	1.5	0.3	1.5	178	1000pcs

SOLDER PROFILE
Peak solder Temp +260°C Max 10 sec Max.
2 Cycles Max.
MSL 1, Lead Finish Au

DEVELOPED FREQUENCIES	
Abbreviation	Frequency (MHZ)
080	8.000
098.3	9.8304
100	10.000
110.5	11.0592
120	12.000
122.8	12.2880
135.6	13.560
143	14.31818
147.4	14.7456
160	16.000
184	18.432
196.6	19.6608
200	20.000
221	22.1184
240	24.000
245.7	24.576
250	25.000
270	27.000
286.3	28.63636
330	33.000
400	40.000
480	48.000

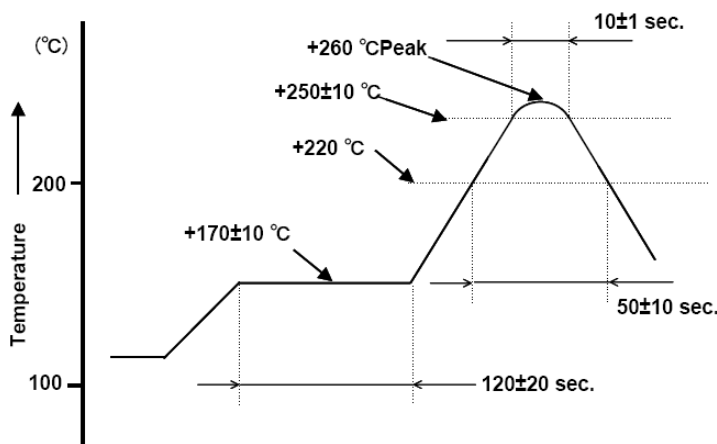




Figure 1) Suggested Reflow Profile

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-  [View ECS-160-20-23A-TR on WIN SOURCE](#)
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