

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

ECX-64A SMD CRYSTAL

[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 _{opr}	-10		+70	°C
Storage Temperature	T _{stg}	-55		+125	°C
Aging (First Year)	@ +25°C ±3°C			±5	ppm

DIMENSIONS (mm)

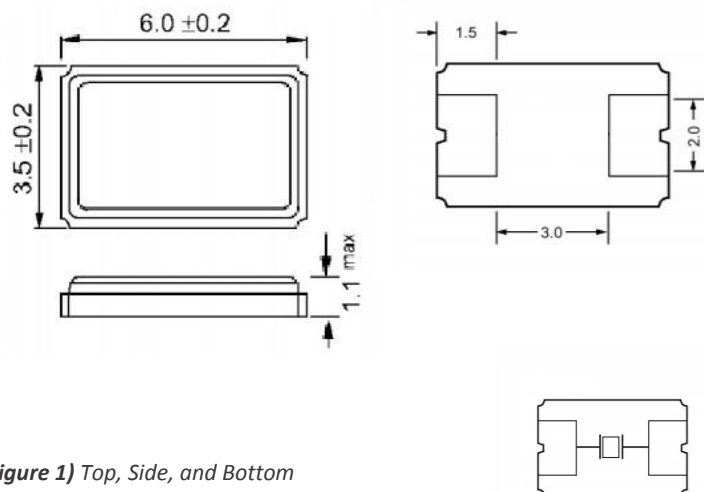


Figure 1) Top, Side, and Bottom

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

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

Pad Connections

1	In/Out
2	Out/In

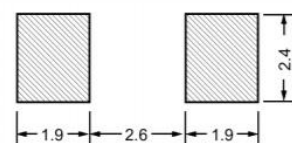


Figure 2) Suggested land

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

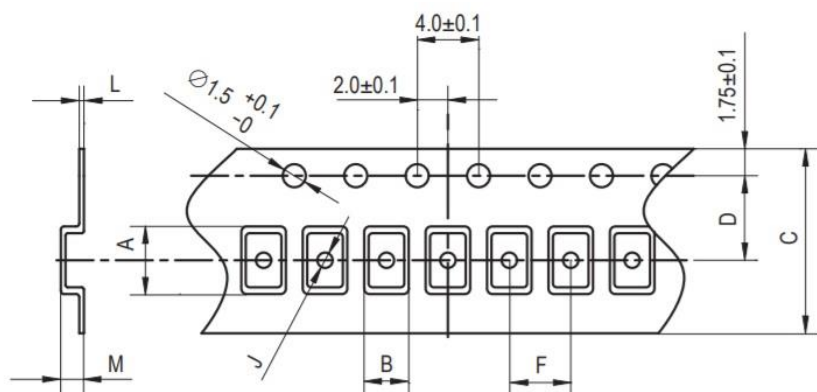
ECS - FREQUENCY ABBREVIATION		LOAD CAPACITANCE	PACKAGE	AVAILABLE OPTIONS			PACKAGING
				Tolerance	Stability	Temp Range	
ECS	200 = 20.000 MHz See P/N Guide	20 = 20 pF S = Series	23A = ECX-64A	Blank = Std A = ± 25 ppm J = ± 20 ppm R = ± 15 ppm C = ± 10 ppm	Blank= Std D= ±100 ppm E = ± 50 ppm G = ± 30 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.							
				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
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

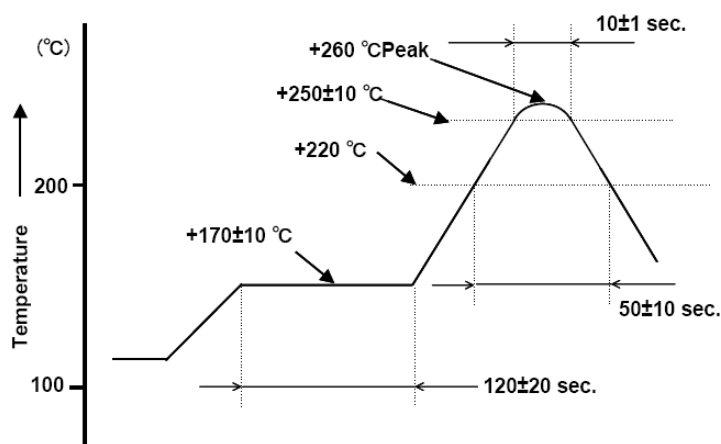
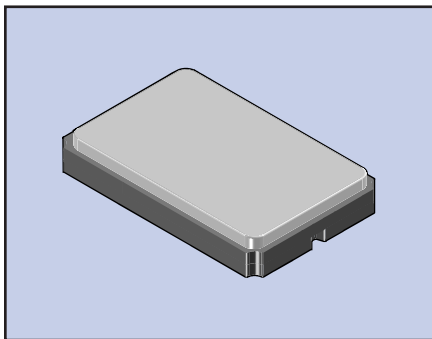


Figure 1) Suggested Reflow Profile

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



The ECX-64AEN & ECX-64CEN are subminiature SMD crystals with 3.5 X 6 mm footprint. This cost effective all ceramic package is available in 2 and 4 pad versions. The package height measures 1.1 mm max. which is ideal for densely populated PCB applications.

FEATURES

- Compact and low profile
- Glass sealed ceramic package
- Tape & Reel (1,000 pcs)

PART NUMBERING GUIDE "EXAMPLE"

MANUFACTURER	FREQUENCY (16.0000 MHz)	LOAD CAPACITANCE*	PACKAGE TYPE**
ECS	160	20	23AEN

* Load capacitance (xx=xx pF, S=series resonance). **Package Type Examples (23AEN=ECX-64AEN, 23CEN=ECX-64CEN)

Note: See Product Selection Guide for additional options including tighter tolerances or extended temperature range.

OPERATING CONDITIONS/ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	MINIMUM	TYPICAL	MAXIMUM	UNITS
FREQUENCY RANGE		12.600		100.000	MHz
CALIBRATION TOLERANCE	@ +25°C			±30*	PPM
FREQUENCY STABILITY ref @25°C	-40 ~ +85°C			±50*	PPM
SHUNT CAPACITANCE				7	pF
LOAD CAPACITANCE	C _L (Customer Specified)	10	16.0 standard	Series	pF
DRIVE LEVEL	DL			100	μW
OPERATING TEMPERATURE	T _{OPR} **	-40		+85	°C
STORAGE TEMPERATURE	T _{STG}	-40		+85	°C
AGING CHARACTERISTICS (Per Year)	@ +25°C ± 3°C per year			±5	PPM

* Tighter specifications are available. **Extended temperature range available.

EQUIVALENT SERIES RESISTANCE / MODE OF OSCILLATION

FREQUENCY RANGE (MHz)	MODE OF OSC	MAX ESR Ω	FREQUENCY RANGE (MHz)	MODE OF OSC	MAX ESR Ω
12.600 ~ 15.999	Fundamental	80	20.000 ~ 49.999	Fundamental	40
16.000 ~ 19.999	Fundamental	60	50.000 ~ 100.000	3rd O/T	100

PACKAGE DIMENSIONS (mm)

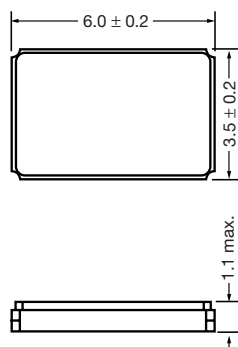


Figure 1) ECX-64AEN & 64CEN - Top and side views

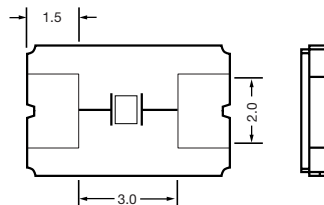


Figure 2) ECX-64AEN - Pad Configuration
Bottom and End views

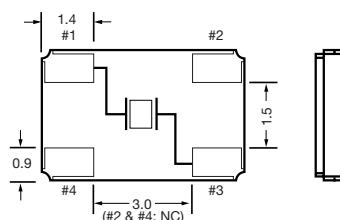


Figure 3) ECX-64CEN - Pad Configuration
Bottom and End views

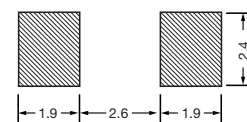


Figure 4) ECX-64AEN - Recommended
Solder Pad Layout

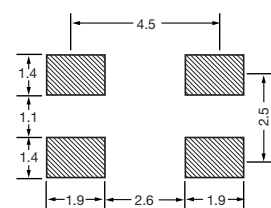


Figure 5) ECX-64CEN - Recommended
Solder Pad Layout