



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



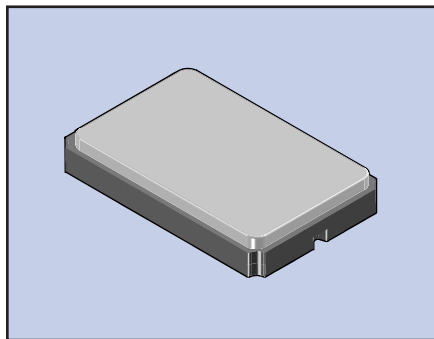
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The ECX-64AEN & ECX-64CEN are subminiature SMD crystals with 3.5 X 6 mm footprint. This cost effective all ceramic package is available in 2 and 4 pad versions. The package height measures 1.1 mm max. which is ideal for densely populated PCB applications.

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)

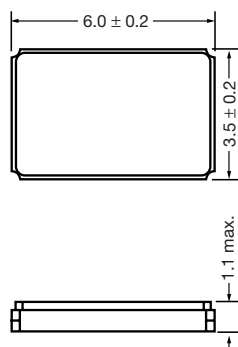


Figure 1) ECX-64AEN & 64CEN - Top and side views

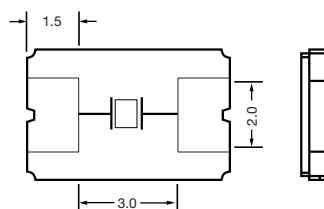


Figure 2) ECX-64AEN - Pad Configuration Bottom and End views

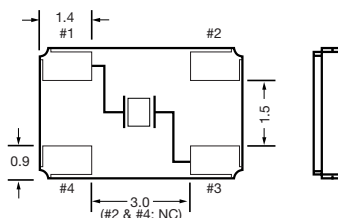


Figure 3) ECX-64CEN - Pad Configuration Bottom and End views

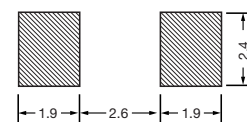


Figure 4) ECX-64AEN - Recommended Solder Pad Layout

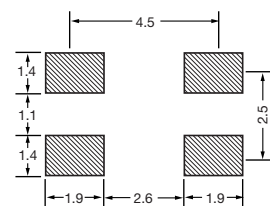


Figure 5) ECX-64CEN - Recommended Solder Pad Layout