



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!



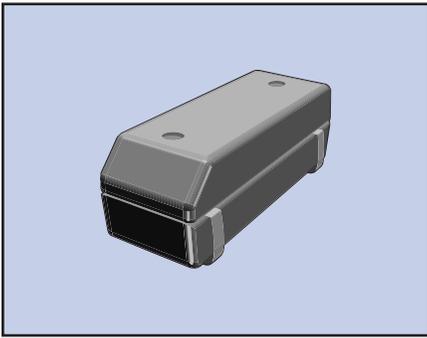
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This wide frequency range SMD quartz crystal is an excellent choice for surface mount applications. The ruggedized molded package is made from the same thermoplastic that is industry standard for integrated circuits.

FEATURES

- Low profile
- Industry standard footprint
- High temperature seal capabilities
- Excellent shock resistance
- Excellent environmental characteristics
- Tape and Reel (1000 pcs)

PART NUMBERING GUIDE "EXAMPLE"

	FREQUENCY (16.0000 MHz)	LOAD CAPACITANCE*	PACKAGE TYPE
ECS	- 160 -	20	- 7S

* Load capacitance (xx=xx pF, S= series resonance)
 Note: See Product Selection Guide for additional options.

OPERATING CONDITIONS/ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	MINIMUM	TYPICAL	MAXIMUM	UNITS
FREQUENCY RANGE	f_0	3.57		70.00	MHz
SHUNT CAPACITANCE	C_0			7.0	pF
LOAD CAPACITANCE	C_L (Customer Specified)	12	20.0 standard	Series	pF
DRIVE LEVEL	3.50 ~ 70.00MHz			100	μ W
CALIBRATION TOLERANCE	@ 25°C	-30		+30	PPM
FREQUENCY STABILITY	$\Delta f/f_0$	-50		+50	PPM
OPERATING TEMPERATURE RANGE	T_{OPR}	-10		+70	°C
STORAGE TEMPERATURE RANGE	T_{STG}	-40		+85	°C

EQUIVALENT SERIES RESISTANCE / MODE OF OSCILLATION

FREQUENCY RANGE (MHz)	MODE	MAX ESR Ω	FREQUENCY RANGE (MHz)	MODE	MAX ESR Ω
3.570 ~ 3.999	Fundamental	250	9.000 ~ 12.999	Fundamental	60
4.000 ~ 4.999	Fundamental	150	13.000 ~ 19.999	Fundamental	40
5.000 ~ 5.999	Fundamental	120	20.000 ~ 30.000	Fundamental	30
6.000 ~ 6.999	Fundamental	100	30.000 ~ 70.000	3rd O/T	100
7.000 ~ 8.999	Fundamental	80			

PACKAGE DIMENSIONS (mm)

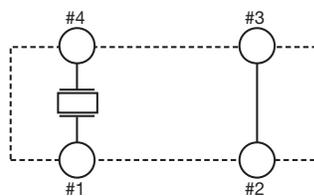
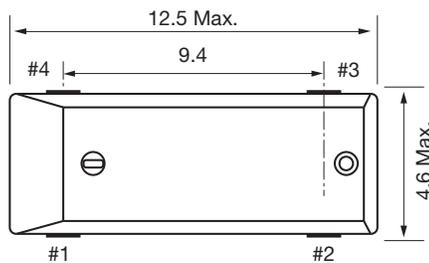


Figure 2) Internal Connections - Top view

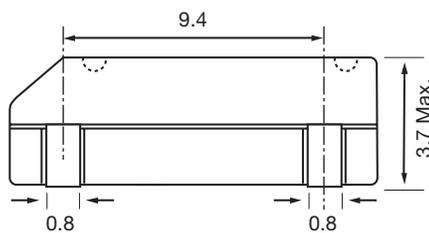


Figure 1) ECX-3S - Top, Side and End views

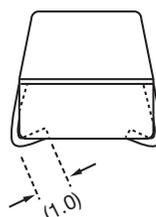


Figure 3) Frequency vs Temperature Curve

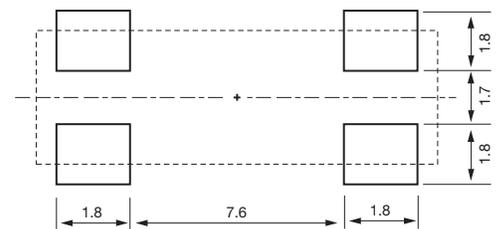


Figure 4) ECX-3S Land Pattern - Bottom view