



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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- ▶ Compact and low profile
- ▶ RoH Compliant (2011/65/EU)
- ▶ MSL 1
- ▶ Lead Finish: Au
- ▶ AEC-Q200 Qualified

ECX-33Q

SMD QUARTZ CRYSTAL

The ECX-33Q is a miniature SMD Crystal with a 3.2 x 2.5 mm footprint. AEC-Q200 Qualified.

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECX-33Q			UNITS
		MIN	TYP	MAX	
Frequency Range		12.000		40.000	MHz
Frequency Tolerance	at +25°C			± 30 *	ppm
Frequency Stability	-55 to +125°C (DU Option)			± 100 *	ppm
Shunt Capacitance				7	pF
Load Capacitance	Specify in P/N	10	20	Series	pF
Drive Level				100	µW
Operating Temperature	DU Option	-55		+125	°C
Storage Temperature		-55		+125	°C
Aging (Per Year)	@ +25°C ±3°C			±5	ppm

EQUIVALENT SERIES RESISTANCE/MODE OF OSCILLATION

FREQUENCY RANGE (MHz)	MODE OF OSC	MAX ESR Ω	FREQUENCY RANGE (MHz)	MODE OF OSC	MAX ESR Ω
12.000 ~ 15.999	Fundamental	100	20.000 ~ 23.999	Fundamental	60
16.000 ~ 19.999	Fundamental	80	24.000 ~ 40.000	Fundamental	40

DIMENSIONS (mm)

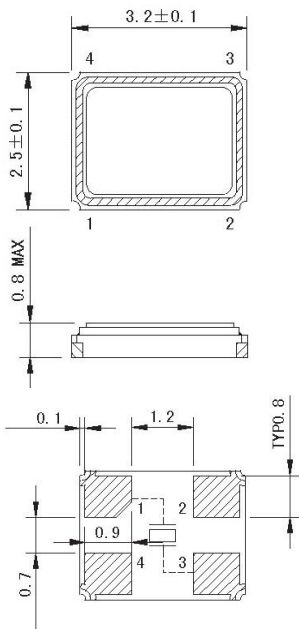


Figure 1) Top, Side, Bottom and End views

Pad Connections	
1	In/Out
2	**Gnd
3	In/Out
4	**Gnd

** Pad 2 & 4 is tied to metal cover and can be tied to ground or no connected

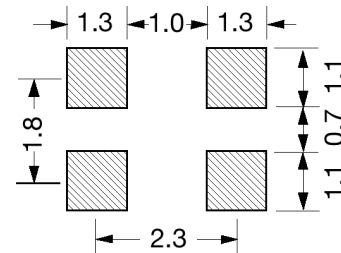


Figure 2) Suggested Land Pattern

PART NUMBERING GUIDE: Example ECS-200-20-33Q-DU-TR

ECS - Frequency Abbreviation - Load Capacitance - Package

200 = 20.000 MHz
See P/N Guide

20 = 20 pF
S=Series

33Q =
ECX-33Q

Custom Options

Tolerance	* Stability	Temp Range	Packaging
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 M = -20 ~ +70 °C N = -40 ~ +85 °C P = -40 ~ +105 °C S = -40 ~ +125 °C U = -55 ~ +125 °C	TR= Tape & Reel 1K/Reel

*Consult Factory for available stability options over extended temp range.