

- ▶ 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)

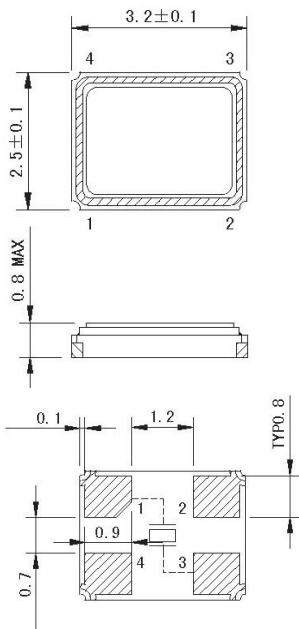


Figure 1) Top, Side, Bottom and End views

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

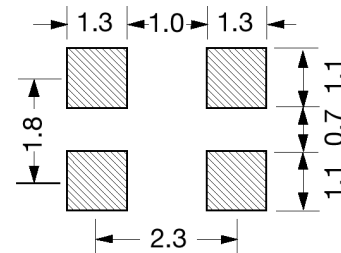


Figure 2) Suggested Land Pattern

### 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.

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## ECS:

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