

- ▶ Low profile
- ▶ 2.5 x 2.0 mm Footprint
- ▶ RoHS Compliant (2011/65/EU)
- ▶ MSL: 1
- ▶ Lead Finish: Au
- ▶ AEC-Q200 Qualified

# ECX-2236Q

## SMD CRYSTAL

The ECX-2236Q is a miniature SMD Crystal with a 2.5 x 2.0 mm footprint . AEC-Q200 Qualified.

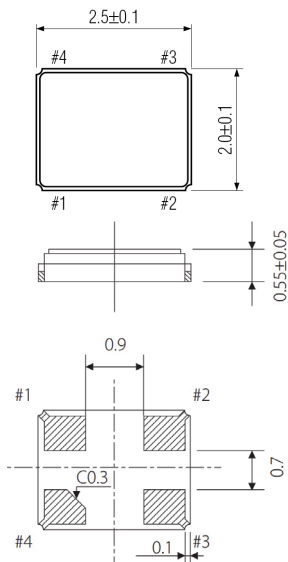
### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECX-2236Q			UNITS
		MIN	TYP	MAX	
Frequency Range		12.000		40.000	MHz
Frequency Tolerance	at +25°C			± 30	ppm
Frequency Stability	-40 to +125°C (ES Option)			± 50	ppm
Shunt Capacitance				5	pF
Load Capacitance	Specify in P/N		8		pF
Drive Level			10	100	µW
Operating Temperature	(ES Option)	-40		+125	°C
Storage Temperature		-40		+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
12.00 ~ 15.999	Fundamental	150	20.000 ~ 29.999	Fundamental	60
16.00 ~ 19.999	Fundamental	80	30.000 ~ 34.999	Fundamental	50
			35.000 ~ 40.000	Fundamental	40

### DIMENSIONS (mm)



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

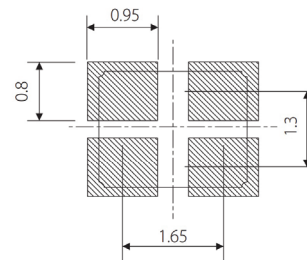


Figure 1) Top, Side, Bottom, End views and Crystal Connection (Top View)

Figure 2) Suggested Land Pattern

### PART NUMBERING GUIDE: Example ECS-240-8-36Q-ES-TR

ECS - Frequency Abbreviation - Load Capacitance - Package

240 = 24.000 MHz  
See P/N Guide

8 = 8 pF  
S=Series

36Q =  
ECX-2236Q

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 L = -10 ~ +70°C M = -20 ~ +70°C N = -40 ~ +85°C P = -40 ~ +105°C S = -40 ~ +125°C U = -55 ~ +125°C	TR= Tape & Reel 3K/Reel

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