

- ▶ Low profile
- ▶ 3.2 x 2.5 mm Footprint
- ▶ Extended Temp Range Option
- ▶ RoHS Compliant



# ECX-32 SMD QUARTZ CRYSTAL

The sub miniature ECX-32 is a compact SMD Crystal. The 3.2 x 2.5 x 0.8 mm ceramic package is ideal for today's SMD manufacturing environment.

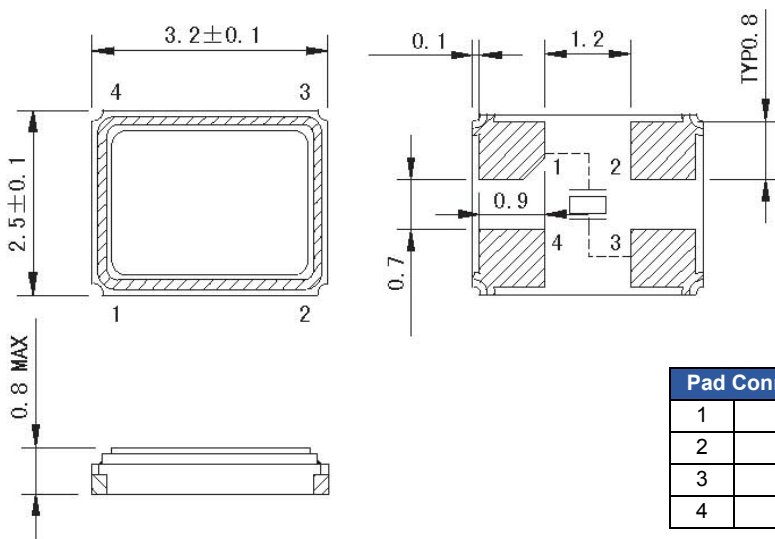
## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECX-32			UNITS
		MIN	TYP	MAX	
Frequency Range		12.000		50.000	MHz
Frequency Tolerance	at +25°C			± 50 *	ppm
Frequency Stability	-20 to +70°C			± 50 *	ppm
Shunt Capacitance				5	pF
Load Capacitance	Specify in P/N	10	20	Series	pF
Drive Level				100	µW
Operating Temperature		-20		+70	°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
12.00 ~ 15.999	Fundamental	100	20.000 ~ 23.999	Fundamental	60
16.000 ~ 19.999	Fundamental	80	24.000 ~ 50.000	Fundamental	40

## DIMENSIONS (mm)



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

Digikey 09.2016:  
~1.10€/pcs

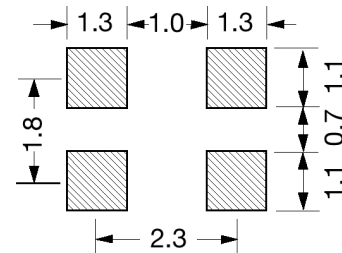


Figure 2) Suggested Land Pattern

Figure 1) Top, Side, and Bottom views

## PART NUMBERING GUIDE: Example ECS-200-20-33-TR

ECS - Frequency Abbreviation - Load Capacitance - Package

200 = 20.000 MHz  
See P/N Guide

20 = 20 pF  
S=Series

33 =  
ECX-32

### Custom Options

Tolerance

Blank = Std  
A = ± 25 ppm  
J = ± 20 ppm  
R = ± 15 ppm  
C = ± 10 ppm

\* Stability

Blank = Std  
D = ± 100 ppm  
E = ± 50 ppm  
G = ± 30 ppm  
H = ± 25 ppm  
T = ± 20 ppm  
W = ± 15 ppm  
K = ± 10 ppm

Temp Range

Blank = Std  
M = -20 ~ +70°C  
N = -40 ~ +85°C  
P = -40 ~ +105°C  
S = -40 ~ +125°C  
U = -55 ~ +125°C

Packaging

TR= Tape  
& Reel  
1K/Reel

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

