

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

# ECX-32

## SMD CRYSTAL

The miniature ECX-32 is a very compact SMD Crystal. The 3.2 x 2.5 x 0.7 mm ceramic package is ideal for today's SMD manufacturing environment.

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECX-32			UNITS
		MIN	TYP	MAX	
Frequency	Fo	16.000		60.000	MHz
Frequency Tolerance	@ +25°C			± 50 *	ppm
Frequency Stability (ref @ 25°C)	-20 ~ +70°C			± 50 *	ppm
Shunt Capacitance				5.0	pF
Load Capacitance	Specify in P/N		20		pF
Equivalent Series Resistance Fundamental Model	16.000 ~ 29.999 MHz			100	Ω
	30.000 ~ 60.0000 MHz			50	Ω
Drive Level				100	μW
Operating Temperature	Topr	-20		+70	°C
Storage Temperature	Tstg	-40		+85	°C
Aging Characteristics (Per Year)	@ +25°C ± 3°C			± 5	ppm

### PACKAGE DIMENSIONS (mm)

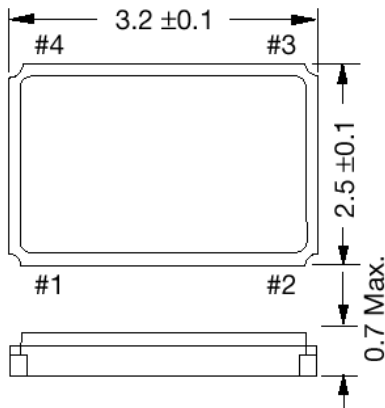


Figure 1) Top, Side and End Views

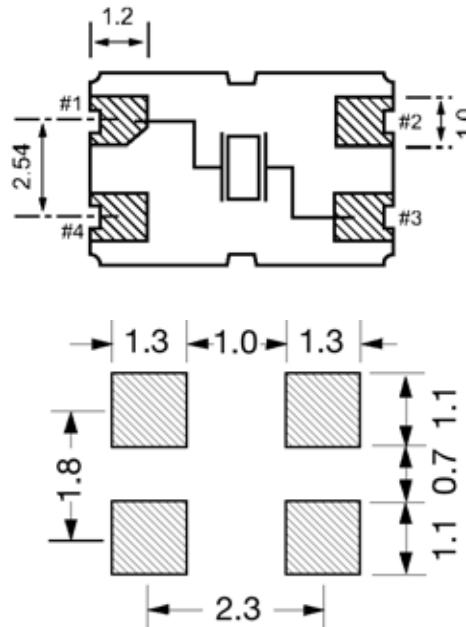


Figure 2) Bottom View and Suggested Land

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

### PART NUMBERING GUIDE: Example ECS-160-20-33-TR

ECS - Frequency Abbreviation - Load - Package Type - Tolerance - Stability - Temp Range - Packaging

160 = 16.000 MHz  
See P/N Guide for Std Frequencies

20 = 20.0 pF  
S = Series

-33 =  
ECX-32

Blank= Std  
A = ± 25 ppm  
C = ± 10 ppm

Blank= Std  
D = ± 100 ppm  
E = ± 50 ppm  
G = ± 30 ppm  
H = ± 25 ppm  
K = ± 10 ppm

Blank= Std  
L = -10 ~ +70°C  
M = -20 ~ +70°C  
N = -40 ~ +85°C  
P = -40 ~ +105°C

-TR =  
Tape & Reel  
1K/Reel

\* Tighter Tolerance/Stability Options Available (see custom options)  
Not all stabilities are available at all temp ranges, consult ECS.