



- ▶ Low Profile
- ▶ 2.0 x 1.6 mm Footprint
- ▶ Extended Temp. Range Option
- ▶ RoHS Compliant

# ECX-1637

## SMD CRYSTAL

The sub miniature ECX-1637 is a very compact SMD Crystal. The 2.0 x 1.6 x 0.45 mm ceramic package is ideal for today's SMD manufacturing environment.

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECX-1637			UNITS
		MIN	TYP	MAX	
Frequency	Fo	24.000		80.000	MHz
Frequency Tolerance	@ +25°C			± 50 *	ppm
Frequency Stability (ref @ 25°C)	-20 ~ +70°C			± 50 *	ppm
Shunt Capacitance				5.0	pF
Load Capacitance			8		pF
Equivalent Series Resistance	Fundamental Mode			100	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)

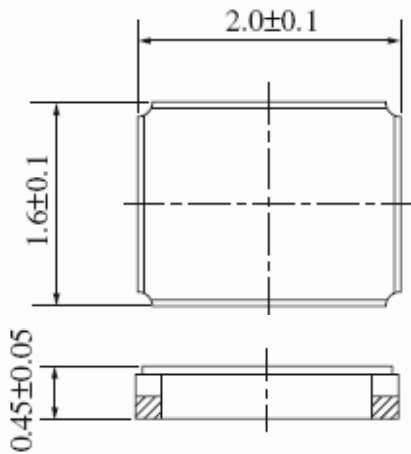


Figure 1) Top, Side and End Views

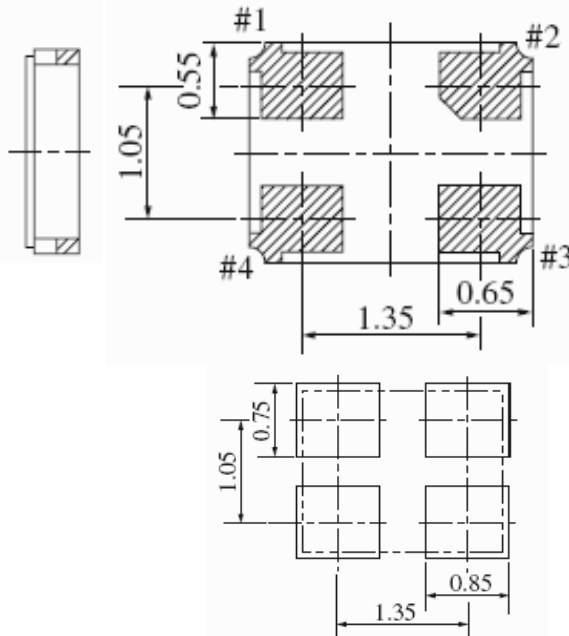
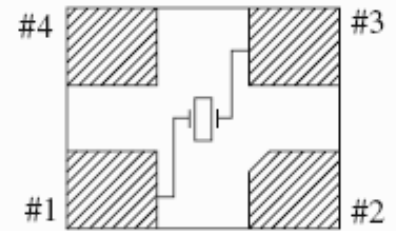


Figure 2) Bottom View and Suggested Land



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

Figure 3) Internal Connections (Top View)

### PART NUMBERING GUIDE: Example ECS-240-8-37-TR

ECS	Frequency Abbreviation	Load	Package Type	Tolerance	Stability	Temp Range	Packaging
	240 = 24.000 MHz See P/N Guide for Std Frequencies	8 = 8.0 pF S = Series	-37 = ECX-1637	A = ± 25 ppm C = ± 10 ppm	D = ± 100 ppm E = ± 50 ppm G = ± 30 ppm H = ± 25 ppm K = ± 10 ppm	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.



### Frequency Abbreviations

FREQUENCY MHz	CODE
24.000	240
24.576	245.76
26.000	260
27.000	270
27.120	271.2
28.63636	286.36
32.000	320
36.000	360
38.400	384
40.000	400

Sample P/N: ECS-240-8-37  
 ECS = Mfg Code  
 240 = Frequency Code 24.000 MHz  
 -8 = Load Capacitance 8 pF  
 -37 = Package, ECX-1637

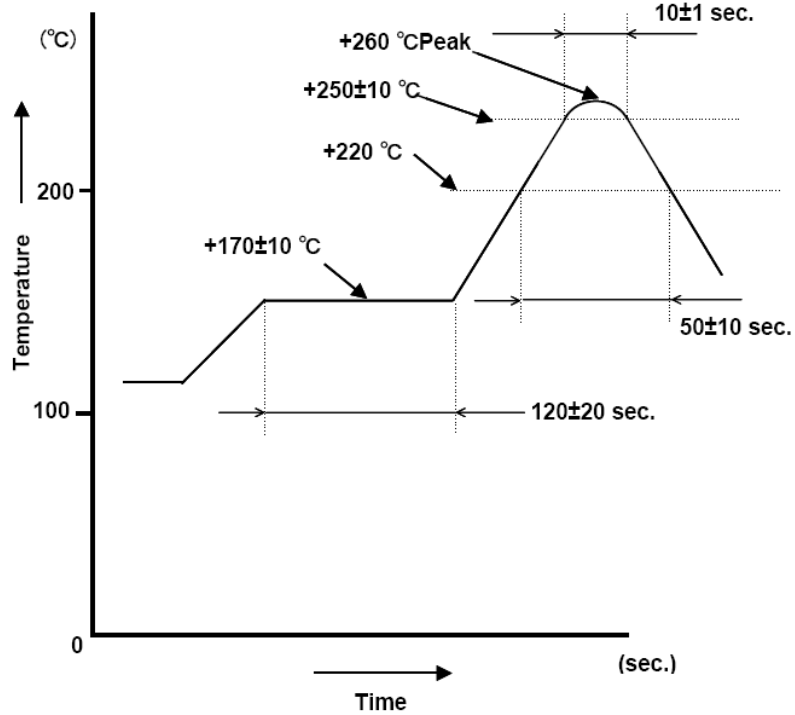
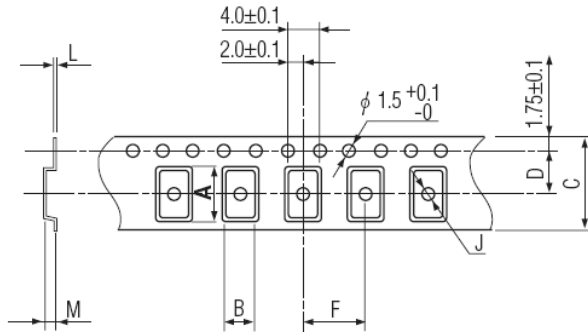


Figure 1) Suggested Reflow Profile

### POCKET TAPE DIMENSIONS (mm)



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
2.25	1.85	8.0	3.5	4.0	1.0	0.25	0.65	180	1000

Package Data	
Item	Description
Lid	Metal
Base	Ceramic
Sealing	Seam/EB
Terminal	Tungsten (metalized)
Plating	Gold/Nickel Surface/Under
RoHS	Compliant (Pb Free)

Figure 2) Pocket Tape Dimensions