



- ▶ 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)

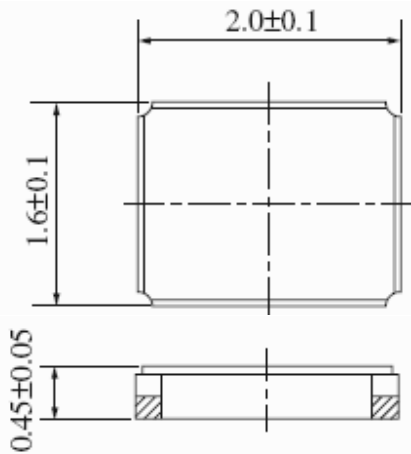


Figure 1) Top, Side and End Views

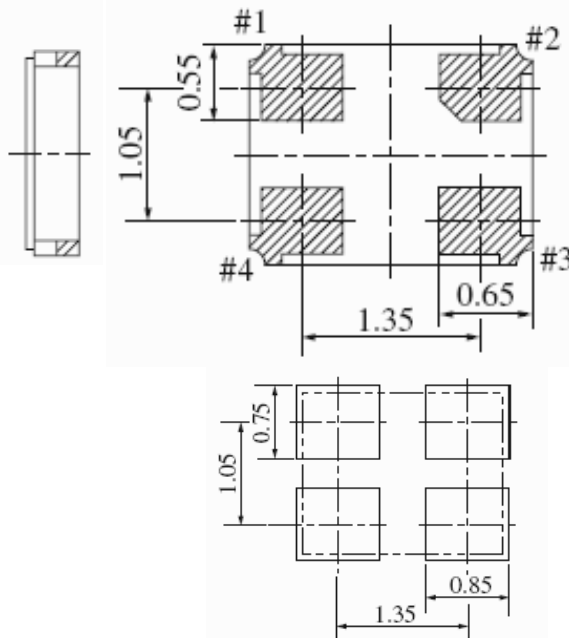
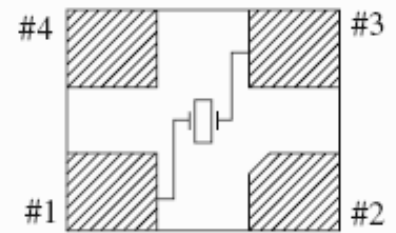


Figure 2) Bottom View and Suggested Land



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
25.000	250
26.000	260
27.000	270
27.120	271.2
29.491	294.91
30.000	300
32.000	320
34.400	344
36.000	360
38.400	384
40.000	400
44.000	440
44.545	445.45
48.000	480
54.000	540

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

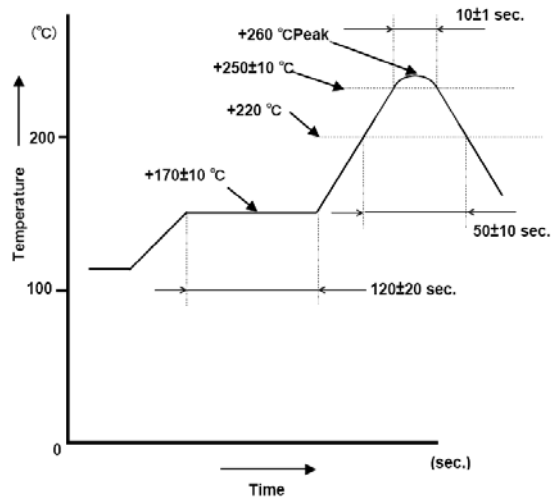
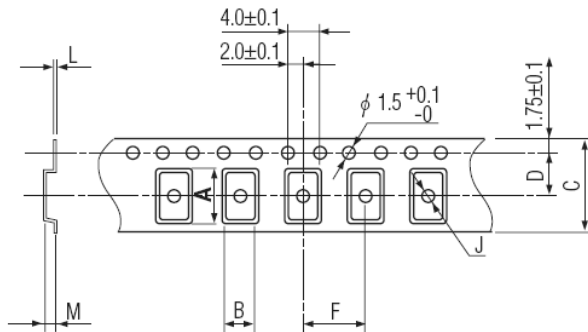


Figure 1) Suggested Reflow Profile

### 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