

- ▶ 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)

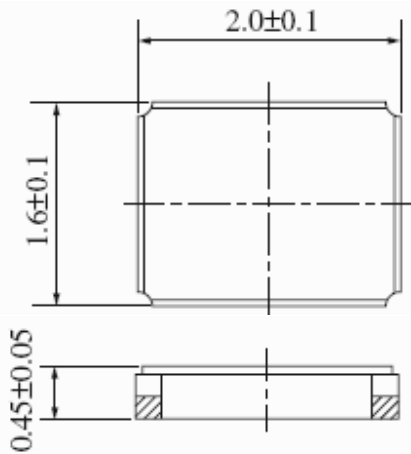


Figure 1) Top, Side and End Views

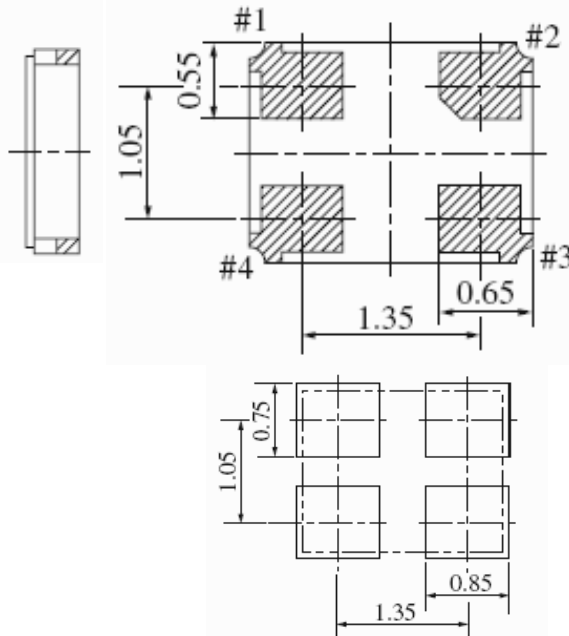
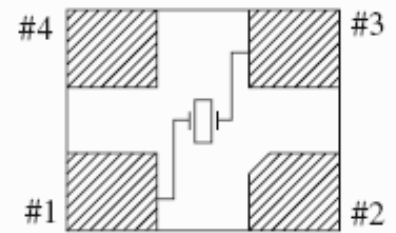


Figure 2) Bottom View and Suggested Land



| 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

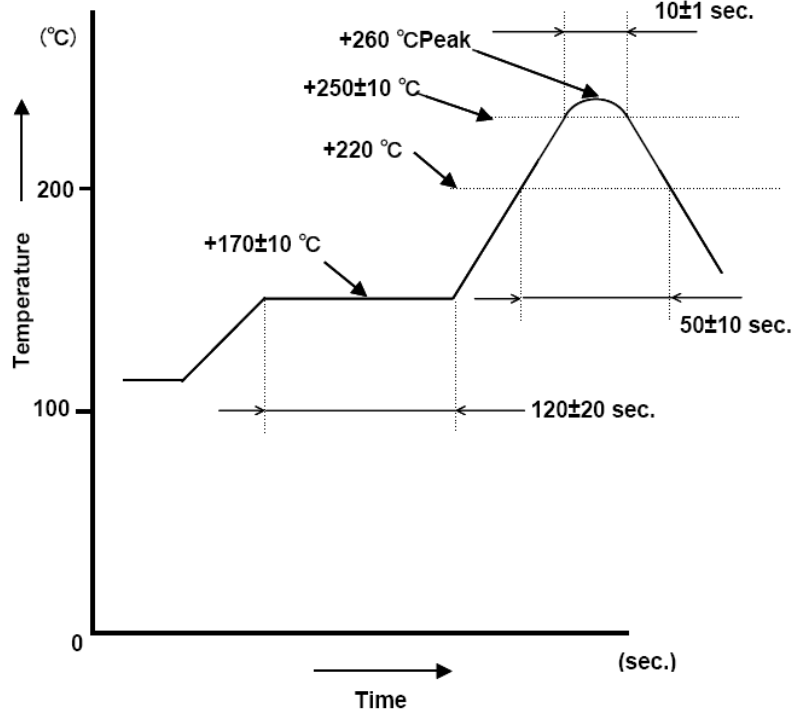
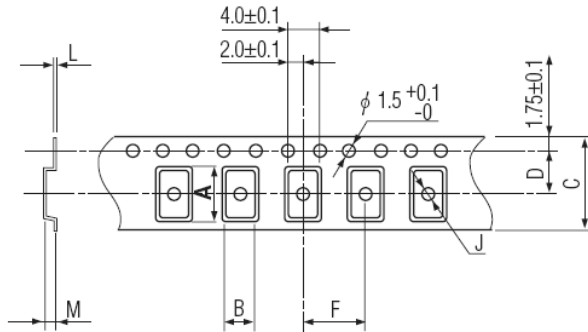


Figure 1) Suggested Reflow Profile

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