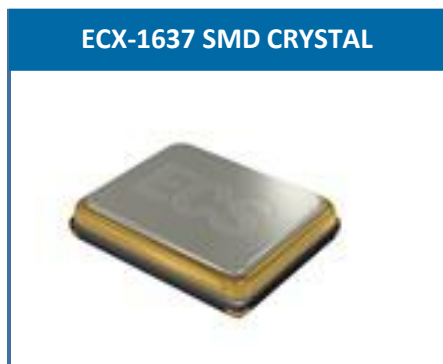


The sub miniature ECX-1637 is a very compact SMD Crystal. The 2.0 x 1.6 x 0.45 mm ceramic package is ideal for LoRa WAN, wireless, cellular and high density applicaitons.

Request a Sample



## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS             | CONDITIONS     | ECX-1637 |     |        | UNITS |
|------------------------|----------------|----------|-----|--------|-------|
|                        |                | MIN      | TYP | MAX    |       |
| Frequency              |                | 16.000   |     | 80.000 | MHz   |
| Mode of Oscillation    | Fundamental    |          |     |        |       |
| Frequency Tolerance*   | @ +25°C        |          |     | ± 50   | ppm   |
| Frequency Stability*   | -20 ~ +70°C    |          |     | ± 50   | ppm   |
| Shunt Capacitance      | Co             |          |     | 5      | pF    |
| Load Capacitance       | Specify in P/N |          | 8   |        | pF    |
| Drive Level            | DL             |          |     | 100    | μW    |
| Operating Temperature* | Topr           | -20      |     | +70    | °C    |
| Storage Temperature    | Tstg           | -40      |     | +85    | °C    |
| Aging (First Year)     | @ +25°C ±3°C   |          |     | ±5     | ppm   |

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

### DIMENSIONS (mm)

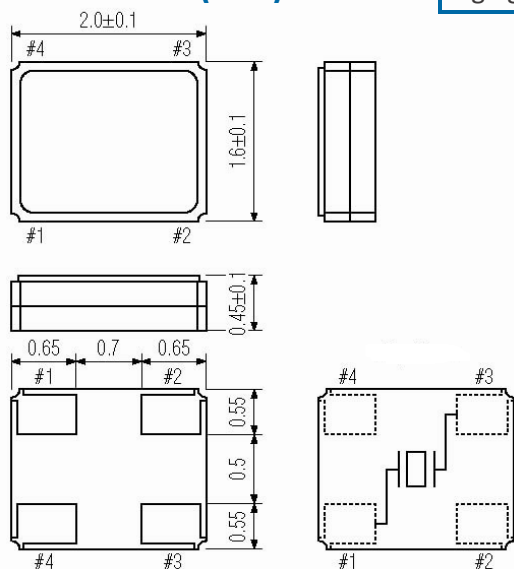


Figure 1) Top, Side, and Bottom

Crystal is symmetrical, pad 1 & 3 are interchangeable. Chamfer on the bottom pad has no electrical significance.

| Frequency (MHz) | ESR Ω Max. |
|-----------------|------------|
| 16.000 ~ 23.999 | 100        |
| 24.000 ~ 25.999 | 80         |
| 26.000 ~ 39.999 | 60         |
| 40.000 ~ 80.000 | 50         |

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

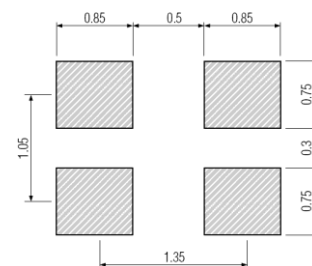


Figure 2) Suggested land

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

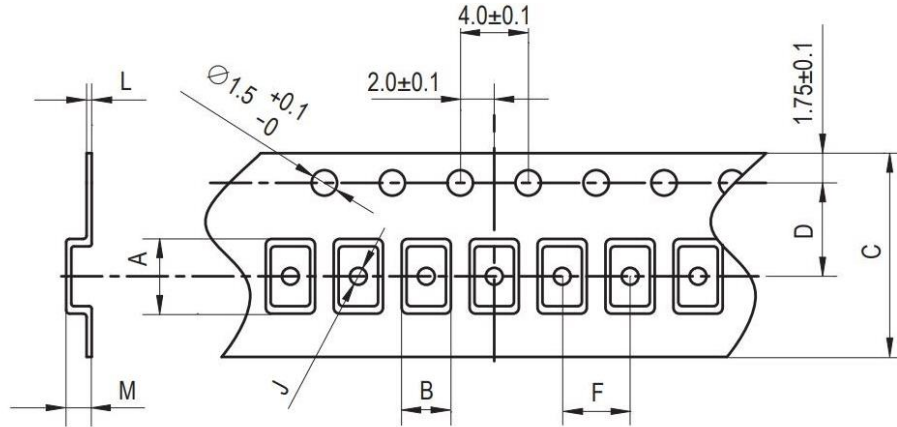
| ECS - FREQUENCY ABBREVIATION | LOAD CAPACITANCE                  | PACKAGE                            | AVAILABLE OPTIONS |   |  | PACKAGING  |                                 |
|------------------------------|-----------------------------------|------------------------------------|-------------------|---|--|--|---------------------------------|
|                              |                                   |                                    | Tolerance         | Stability   | Temp Range   |  |                                 |
| ECS                          | 240 = 24.000 MHz<br>See P/N Guide | 8 = 8 pF<br>10 = 10 pF<br>S=Series | -37 =<br>ECX-1637 | Blank = Std<br>A = ± 25 ppm<br>J = ± 20 ppm<br>R = ± 15 ppm<br>C = ± 10 ppm | Blank= Std<br>D= ±100 ppm<br>E = ± 50 ppm<br>G = ± 30 ppm<br>H = ± 25 ppm<br>T = ± 20 ppm †<br>W = ±15 ppm †<br>K = ± 10 ppm † | Blank= Std<br>L = -10 ~ +70°C<br>M = -20 ~ +70°C<br>Y = -30 ~ +85°C<br>N = -40 ~ +85°C<br>P = -40 ~ +105°C<br>S = -40 ~ +125°C<br>U = -55 ~ +125°C | TR = 1K<br>TR3 = 3K<br>Qty/Reel |

\* Specify available options in P/N.

† Contact ECS for availability over extended temp range.

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**POCKET TAPE DIMENSIONS (mm)**



| A    | B    | C   | D   | F   | J    | L    | M    | Reel Dia. |
|------|------|-----|-----|-----|------|------|------|-----------|
| 2.25 | 1.85 | 8.0 | 3.5 | 4.0 | 1.05 | 0.25 | 0.65 | 180       |

| SOLDER PROFILE                          |  |
|---|--|
| Peak solder Temp +260°C Max 10 sec Max. |  |
| 2 Cycles Max.                           |  |
| MSL 1, Lead Finish Au                   |  |

| DEVELOPED FREQUENCIES |                 |
|-----------------------|-----------------|
| Abbreviation          | Frequency (MHZ) |
| 160                   | 16.000          |
| 192                   | 19.200          |
| 200                   | 20.000          |
| 240                   | 24.000          |
| 250                   | 25.000          |
| 260                   | 26.000          |
| 270                   | 27.000          |
| 271.2                 | 27.120          |
| 300                   | 30.000          |
| 320                   | 32.000          |
| 360                   | 36.000          |
| 384                   | 38.400          |
| 400                   | 40.000          |
| 480                   | 48.000          |
| 500                   | 50.000          |
| 540                   | 54.000          |



Figure 1) Suggested Reflow Profile