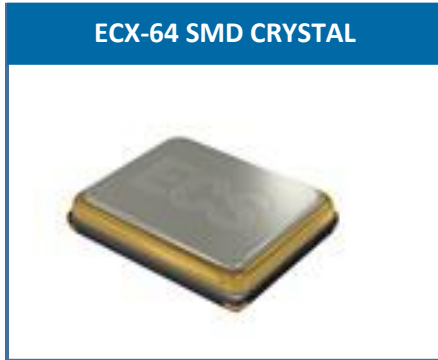


The ECX-64 is a miniature SMD Crystal with a 6 x 3.5 mm 4 pad footprint. This cost effective package with a height of 1.1 mm is ideal for densely populated PCB applications

[Request a Sample](#)



- Compact and Low Profile
- Industry Standard Footprint
- Extended Temp. Range Option
- RoHS Compliant
- 6 x 3.5 mm (4 Pad)

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS | CONDITIONS | ECX-64 | | | UNITS |
|------------------------|------------------|--------|-----|--------|-------|
| | | MIN | TYP | MAX | |
| Frequency | | 8.000 | | 50.000 | MHz |
| Mode of Oscillation | Fundamental | | | | |
| Frequency Tolerance* | @ +25°C | | | ± 30 | ppm |
| Frequency Stability* | -10 ~ +70°C | | | ± 50 | ppm |
| Shunt Capacitance | Co | | | 7 | pF |
| Load Capacitance | Specify in P/N | 10 | 20 | Series | pF |
| Drive Level | DL | | | 100 | μW |
| Operating Temperature* | T _{opr} | -10 | | +70 | °C |
| Storage Temperature | T _{stg} | -55 | | +125 | °C |
| Aging (First Year) | @ +25°C ±3°C | | | ±5 | ppm |

DIMENSIONS (mm)

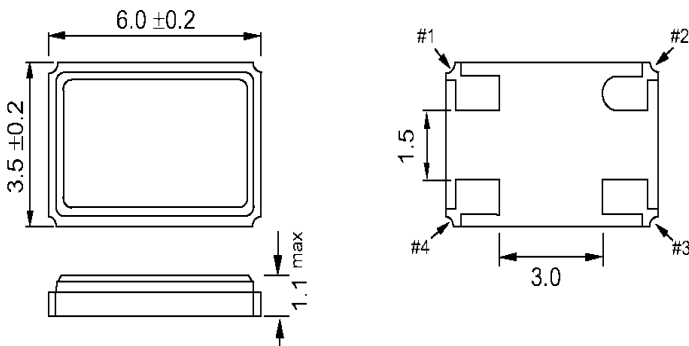


Figure 1) Top, Side, and Bottom

Crystal is symmetrical, pad 1 & 2 are interchangeable. Chamfer on the bottom pad has no electrical significance.

| Frequency (MHz) | ESR Ω Max. |
|-----------------|------------|
| 8.000 ~ 9.999 | 60 |
| 10.000 ~ 13.999 | 50 |
| 14.000 ~ 19.999 | 40 |
| 20.000 ~ 50.000 | 30 |

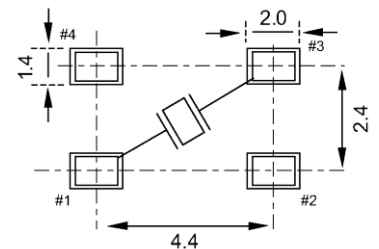


Figure 2) Suggested land

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

PART NUMBERING GUIDE: Example ECS-200-20-23B-TR

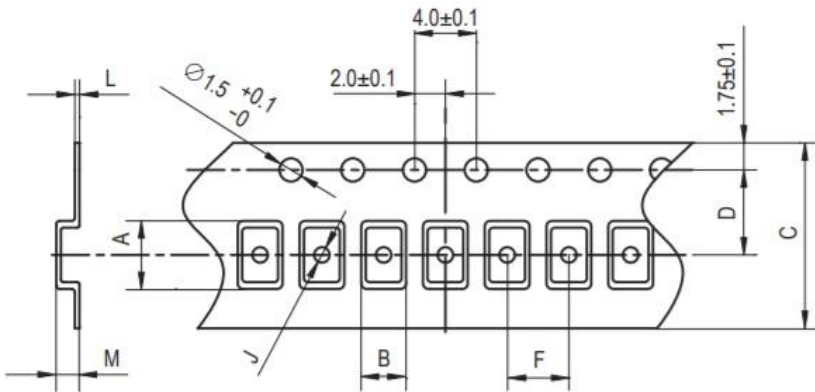
| ECS - FREQUENCY ABBREVIATION | LOAD CAPACITANCE | PACKAGE | AVAILABLE OPTIONS | | | PACKAGING | |
|------------------------------|-----------------------------------|--------------------------|-------------------|---|--|---|-----------------------------------|
| | | | Tolerance | Stability | Temp Range | | |
| ECS | 200 = 20.000 MHz See P/N Guide | 20 = 20 pF S = Series | 23B = ECX-64 | Blank = Std A = ± 25 ppm J = ± 20 ppm R = ± 15 ppm C = ± 10 ppm | Blank = Std D = ± 100 ppm E = ± 50 ppm G = ± 30 ppm H = ± 25 ppm T = ± 20 ppm † W = ± 15 ppm † K = ± 10 ppm † | Blank = Std L = -10 ~ +70°C M = -20 ~ +70°C Y = -30 ~ +85°C N = -40 ~ +85°C P = -40 ~ +105°C S = -40 ~ +125°C U = -55 ~ +125°C | TR = Tape & Reel 1K/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. | Qty/Reel |
|-----|-----|------|-----|-----|-----|-----|-----|-----------|----------|
| 6.4 | 3.9 | 12.0 | 5.5 | 8.0 | 1.5 | 0.3 | 1.5 | 178 | 1000pcs |

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

| DEVELOPED FREQUENCIES | |
|-----------------------|-----------------|
| Abbreviation | Frequency (MHZ) |
| 120 | 12.000 |
| 147.4 | 14.7456 |
| 160 | 16.000 |
| 200 | 20.000 |
| 250 | 25.000 |
| 270 | 27.000 |
| 286.36 | 28.636 |



Figure 1) Suggested Reflow Profile