



**THE DATASHEET OF
ECS-200-12-33Q-JES-TR**

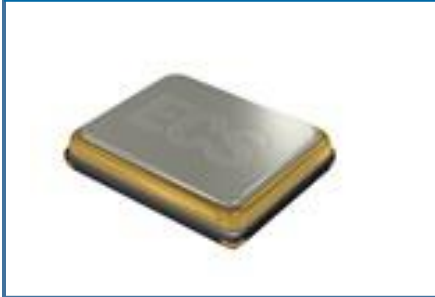


The ECX-33Q is a miniature SMD Crystal with a 3.2 x 2.5 mm footprint. AEC-Q200 Qualified.

ECX-33Q SMD CRYSTAL

[Request a Sample](#)

ECX-33Q SMD CRYSTAL



- Low Profile
- 3.2 x 2.5 mm Footprint
- RoHS Compliant
- AEC-Q200 Qualified

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS | CONDITIONS | ECX-33Q | | | UNITS |
|------------------------|---------------------------------|---------|-----|--------|-------|
| | | MIN | TYP | MAX | |
| Frequency | | 8.000 | | 54.000 | MHz |
| Mode of Oscillation | Fundamental | | | | |
| Frequency Tolerance* | @ +25°C | | | ± 30 | ppm |
| Frequency Stability* | -55 ~ +125°C (DU Option) | | | ± 100 | ppm |
| Shunt Capacitance | Co | | | 7 | pF |
| Load Capacitance | Specify in P/N | 6 | 20 | Series | pF |
| Drive Level | DL | | | 100 | μW |
| Operating Temperature* | T _{opr} (DU Option) | -55 | | +125 | °C |
| Storage Temperature | T _{stg} | -55 | | +125 | °C |
| Aging (First Year) | @ +25°C ±3°C | | | ±5 | ppm |

DIMENSIONS (mm)

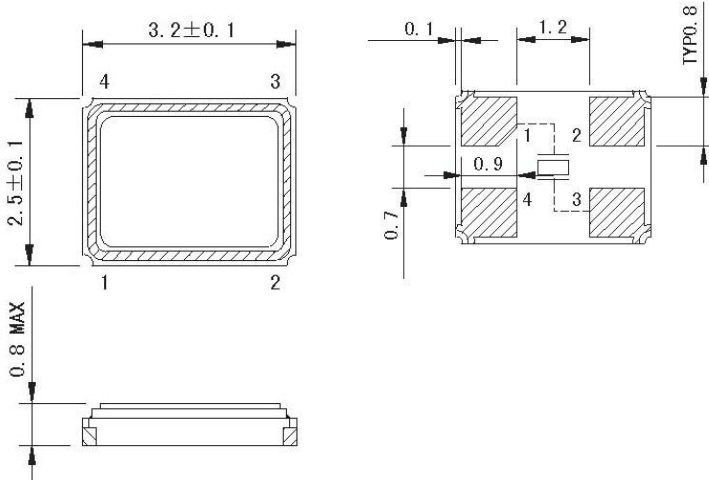


Figure 1) Top, Side, and Bottom

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

| Frequency (MHz) | ESR Ω Max. |
|-----------------|------------|
| 8.000 ~ 9.999 | 500 |
| 10.000 ~ 15.999 | 100 |
| 16.000 ~ 19.999 | 80 |
| 20.000 ~ 23.999 | 60 |
| 24.000 ~ 54.000 | 40 |

Pad Connections

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

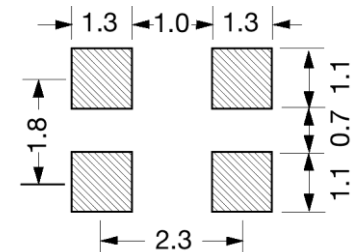


Figure 2) Suggested land

PART NUMBERING GUIDE: Example ECS-200-20-33Q-DU-TR

| ECS - FREQUENCY ABBREVIATION | LOAD CAPACITANCE | PACKAGE | AVAILABLE OPTIONS | | | PACKAGING |
|------------------------------|-----------------------------------|------------------|---|---|--|------------------------------------|
| | | | Tolerance | Stability | Temp Range | |
| ECS | 200 = 20.000 MHz See P/N Guide | 33Q = ECX-33Q | Blank = ±30 ppm A = ± 25 ppm J = ± 20 ppm R = ± 15 ppm C = ± 10 ppm | D = ±100 ppm E = ± 50 ppm G = ± 30 ppm H = ± 25 ppm T = ± 20 ppm † W = ±15 ppm † K = ± 10 ppm † | 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 = 1K †† TR3 = 3K Qty/Reel |

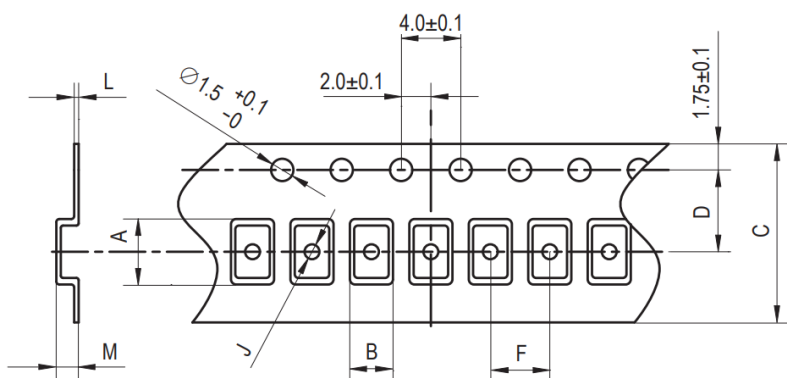
* Specify available options in P/N.

† Contact ECS for availability over extended temp range.

†† JES-TR & JEN-TR 3K/Reel

Rev.2023

POCKET TAPE DIMENSIONS (mm)



| A | B | C | D | F | J | L | M | Reel Dia. | Qty/Reel |
|-----|-----|-----|-----|-----|-----|------|-----|-----------|--------------------------|
| 3.5 | 2.8 | 8.0 | 3.5 | 4.0 | 1.1 | 0.25 | 1.0 | 180 | -TR=1K JES/JEN/TR3=3K |

SOLDER PROFILE

Peak solder Temp +260°C Max 10 sec Max.

2 Cycles Max.

MSL 1, Lead Finish Au

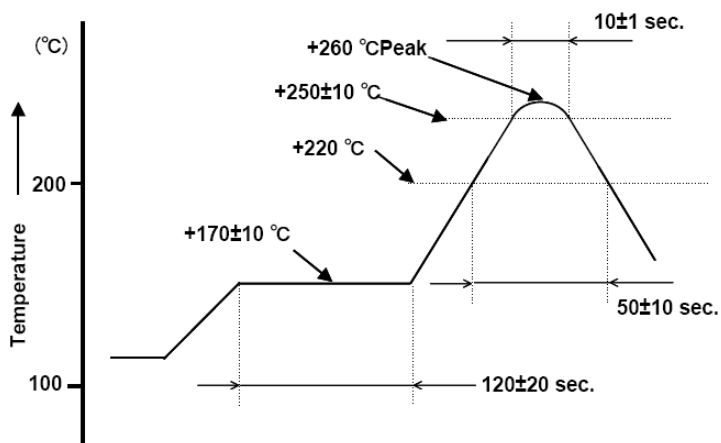




Figure 1) Suggested Reflow Profile

DEVELOPED FREQUENCIES

| Abbreviation | Frequency (MHZ) |
|--------------|-----------------|
| 80 | 8.000 |
| 100 | 10.000 |
| 120 | 12.000 |
| 122.8 | 12.288 |
| 130 | 13.000 |
| 135.6 | 13.560 |
| 143 | 14.31818 |
| 147.4 | 14.7456 |
| 160 | 16.000 |
| 163.8 | 16.384 |
| 166.666 | 16.6666 |
| 184 | 18.432 |
| 196.6 | 19.6608 |
| 200 | 20.000 |
| 221 | 22.1184 |
| 240 | 24.000 |
| 245.7 | 24.576 |
| 250 | 25.000 |
| 260 | 26.000 |
| 270 | 27.000 |
| 286.3 | 28.63636 |
| 300 | 30.000 |
| 320 | 32.000 |
| 330 | 33.000 |
| 400 | 40.000 |

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View ECS-200-12-33Q-JES-TR on WIN SOURCE](#)
-  [ECS Inc. Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management