

- ▶ Low profile
- ▶ 3.2 x 2.5 mm Footprint
- ▶ Extended Temp Range Option
- ▶ RoHS Compliant



ECX-32

SMD QUARTZ CRYSTAL

The sub miniature ECX-32 is a compact SMD Crystal. The 3.2 x 2.5 x 0.8 mm ceramic package is ideal for today's SMD manufacturing environment.

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS | CONDITIONS | ECX-32 | | | UNITS |
|-----------------------|----------------|--------|-----|--------|-------|
| | | MIN | TYP | MAX | |
| Frequency Range | | 12.000 | | 50.000 | MHz |
| Frequency Tolerance | at +25°C | | | ± 50 * | ppm |
| Frequency Stability | -20 to +70°C | | | ± 50 * | ppm |
| Shunt Capacitance | | | | 5 | pF |
| Load Capacitance | Specify in P/N | 10 | 20 | Series | pF |
| Drive Level | | | | 100 | µW |
| Operating Temperature | | -20 | | +70 | °C |
| Storage Temperature | | -55 | | +125 | °C |
| Aging (Per Year) | @ +25°C ±3°C | | | ±5 | ppm |

EQUIVALENT SERIES RESISTANCE/MODE OF OSCILLATION

| FREQUENCY RANGE (MHz) | MODE OF OSC | MAX ESR Ω | FREQUENCY RANGE (MHz) | MODE OF OSC | MAX ESR Ω |
|-----------------------|-------------|-----------|-----------------------|-------------|-----------|
| 12.00 ~ 15.999 | Fundamental | 100 | 20.000 ~ 23.999 | Fundamental | 60 |
| 16.000 ~ 19.999 | Fundamental | 80 | 24.000 ~ 50.000 | Fundamental | 40 |

DIMENSIONS (mm)

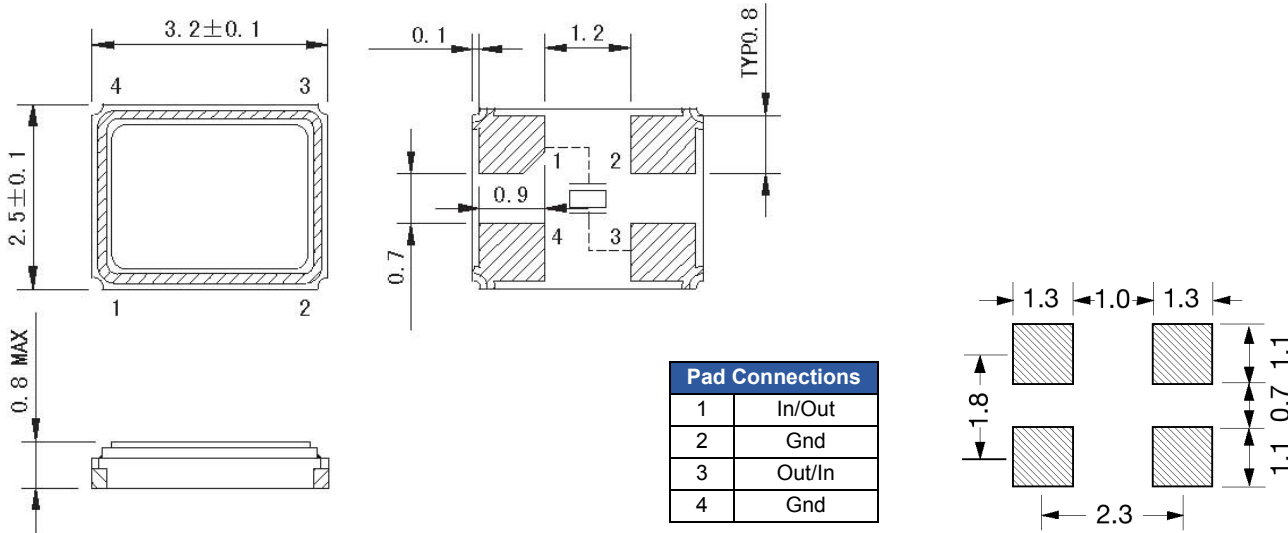


Figure 1) Top, Side, and Bottom views

Figure 2) Suggested Land Pattern

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

ECS - Frequency Abbreviation - Load Capacitance - Package

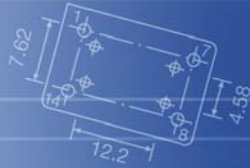
200 = 20.000 MHz
See P/N Guide

20 = 20 pF
S=Series

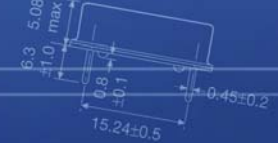
33 =
ECX-32

| Custom Options | | | |
|---|--|---|----------------------------|
| Tolerance | * Stability | Temp Range | Packaging |
| 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 M = -20 ~ +70°C N = -40 ~ +85°C P = -40 ~ +105°C S = -40 ~ +125°C U = -55 ~ +125°C | TR= Tape & Reel 1K/Reel |

*Consult Factory for available stability options over extended temp range.



ECX-32 SMD CRYSTAL



Developed Frequencies

| FREQUENCY MHz | CODE |
|------------------|------|
| 16.000 | 160 |
| 18.432 | 184 |
| 19.6608 | 196 |
| 20.000 | 200 |
| 24.000 | 240 |
| 25.000 | 250 |
| 27.000 | 270 |
| 30.000 | 300 |
| 32.000 | 320 |
| 36.000 | 360 |
| 40.000 | 400 |
| 48.000 | 480 |

Sample P/N: ECS-200-20-33
 ECS = Mfg Code
 200 = Frequency Code 20.000 MHz
 -20 = Load Capacitance 20 pF
 -33 = Package, ECX-32

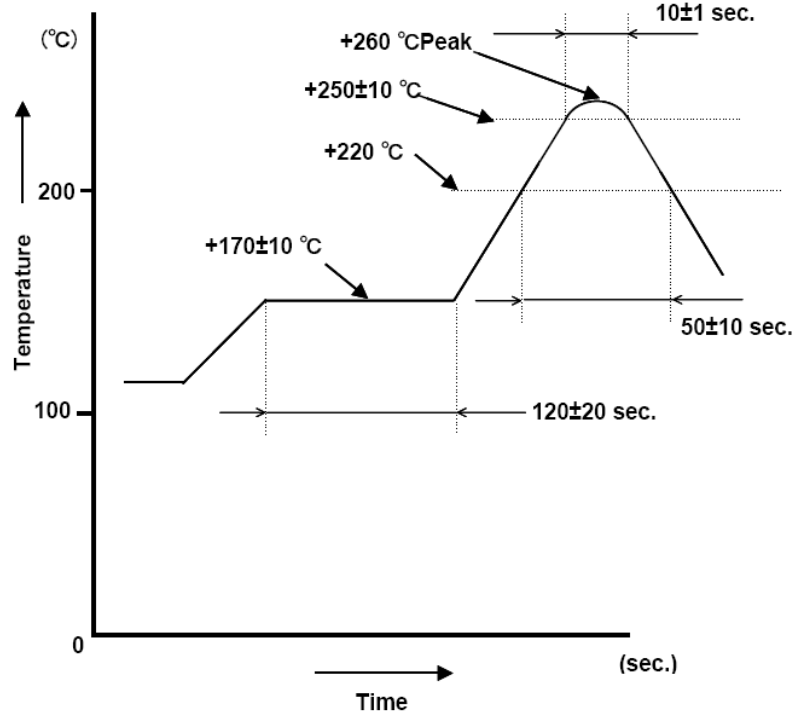
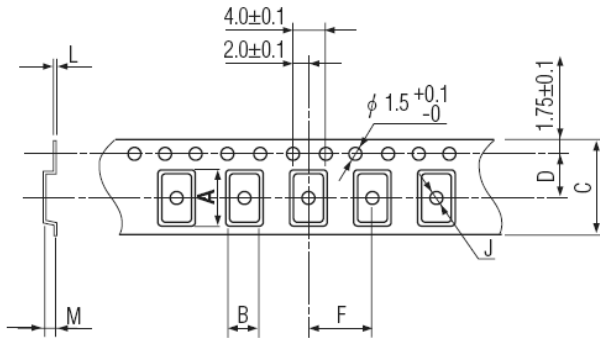


Figure 1) Suggested Reflow Profile

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 | 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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ECS:

[ECS-360-S-33-TR](#) [ECS-400-S-33-TR](#) [ECS-480-20-33-TR](#) [ECS-480-S-33-TR](#) [ECS-160-20-33-TR](#) [ECS-184-20-33-TR](#) [ECS-196-20-33-TR](#) [ECS-200-20-33-TR](#) [ECS-240-20-33-TR](#) [ECS-250-20-33-TR](#) [ECS-270-20-33-TR](#) [ECS-300-20-33-TR](#) [ECS-300-S-33-TR](#) [ECS-320-20-33-TR](#) [ECS-320-S-33-TR](#) [ECS-360-20-33-TR](#) [ECS-400-20-33-TR](#) [ECS-120-20-33-CKM-TR](#) [ECS-120-20-33-DU-TR](#) [ECS-130-20-33-CKM-TR](#) [ECS-160-20-33-CKM-TR](#) [ECS-160-20-33-DU-TR](#) [ECS-162.57-20-33-CKM-TR](#) [ECS-162.57-20-33-DU-TR](#) [ECS-184-20-33-CKM-TR](#) [ECS-184-20-33-DU-TR](#) [ECS-200-20-33-CKM-TR](#) [ECS-200-20-33-DU-TR](#) [ECS-240-20-33-CKM-TR](#) [ECS-240-20-33-DU-TR](#) [ECS-250-20-33-CKM-TR](#) [ECS-250-20-33-DU-TR](#) [ECS-270-20-33-CKM-TR](#) [ECS-270-20-33-DU-TR](#) [ECS-320-20-33-CKM-TR](#) [ECS-320-20-33-DU-TR](#) [ECS-480-20-33-CKM-TR](#) [ECS-480-20-33-DU-TR](#) [ECS-31250-10-33-AGL-TR](#) [ECS-130-20-33-EN-TR](#)