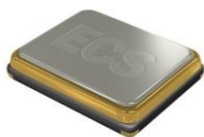


The sub miniature ECS-2520Q is a miniature AEC-Q200 Qualified SMD HCMOS Oscillator. The 2.5 x 2.0 x 0.9 mm ceramic package is ideal for Automotive, Industrial and IOT applications.

ECS-2520Q AEC-Q200 SMD OSCILLATOR

ECX-2520Q SMD HCMOS XO



- Low Profile
- 2.5 x 2.0 mm Footprint
- Extended Temp Range
- RoHS Compliant
- AEC-Q200 Qualified

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS | CONDITIONS | ECS-2520Q | | | UNITS |
|-----------------------|---|------------------------|-----|--------|-------|
| | | MIN | TYP | MAX | |
| Frequency Range | | 0.750 | | 60.000 | MHz |
| * Frequency Stability | -40 ~ +125°C (BS Opt) | | | ±50 | ppm |
| | -40 ~ +105°C (DP Opt) | | | ±30 | ppm |
| Power Supply | V _{dd} ±5% | +1.8, +2.5, +3.0, +3.3 | | | V DC |
| Output | HCMOS | | 15 | | pF |
| Output voltage Level | V _{OL} :10%V _{dd} max./V _{OH} :90%V _{dd} min.V DC | | | | |
| Rise & Fall time | 10%V _{dd} – 90%V _{dd} | | | 10 | ns |
| Duty Cycle | @ ½ V _{dd} | | | 45/55 | % |
| Operating Temp* | | -40 | | +125 | °C |
| Storage Temp | | -55 | | +125 | °C |

* Frequency Stability includes initial tolerance, temperature, supply voltage & load change reflow frequency shift, and aging.

CURRENT CONSUMPTION

mA Max

| FREQ. | ~ 19 MHz | ~ 39.9 MHz | ~ 50 MHz | ~ 60 MHz |
|-------|----------|------------|----------|----------|
| +1.8V | 2.5 | 3.0 | 3.5 | 4.0 |
| +2.5V | 4.5 | 5.5 | 6.5 | 7.0 |
| +3.0V | 5.5 | 6.5 | 7.5 | 8.0 |
| +3.3V | 6.0 | 7.0 | 8.0 | 8.5 |

DIMENSIONS (mm)

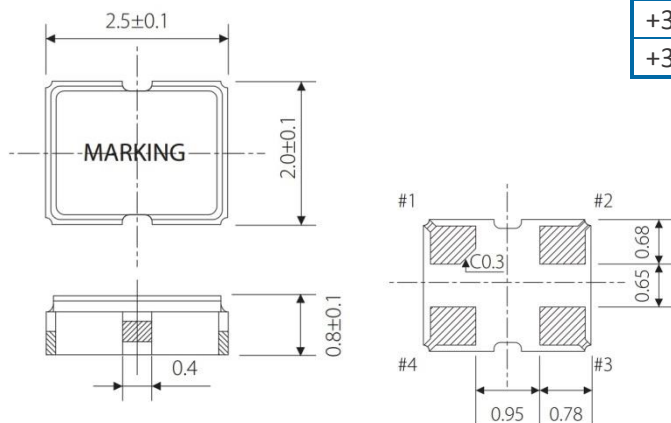


Figure 1) Top, Side, and Bottom views

PAD CONNECTIONS

| | |
|---|-----------------|
| 1 | Tri-state |
| 2 | Gnd |
| 3 | Output |
| 4 | V _{dd} |

Tri State Function

| | |
|------------|----------------|
| Pin 1 | Output |
| High or NC | Active |
| Low | High Impedance |

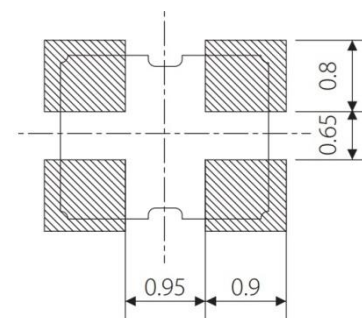


Figure 2) Suggested Land Pattern

PART NUMBERING GUIDE: Example ECS-2520Q-33-270-BS-TR

| ECS - SERIES | Voltage | FREQUENCY ABBREVIATION | STABILITY | * TEMP RANGE | PACKAGING |
|--|--|---|--|--------------------------------------|--------------------------------|
| 2520Q 2.5 x 2.0 mm AEC-Q200 Oscillator | 18 = +1.8V 25 = +2.5V 28 = +2.8V 33 = +3.3V | 270 = 27.000 MHz See Developed Frequencies Pg.2 | A = ±100 ppm B = ±50 ppm D = ±30 ppm | P = -40 ~ +105°C S = -40 ~ +125°C | TR = Tape & Reel 1K/Reel |

DEVELOPED FREQUENCIES

| FREQUENCY MHz | CODE |
|---------------|------|
| 27.000 | 270 |
| 48.000 | 480 |

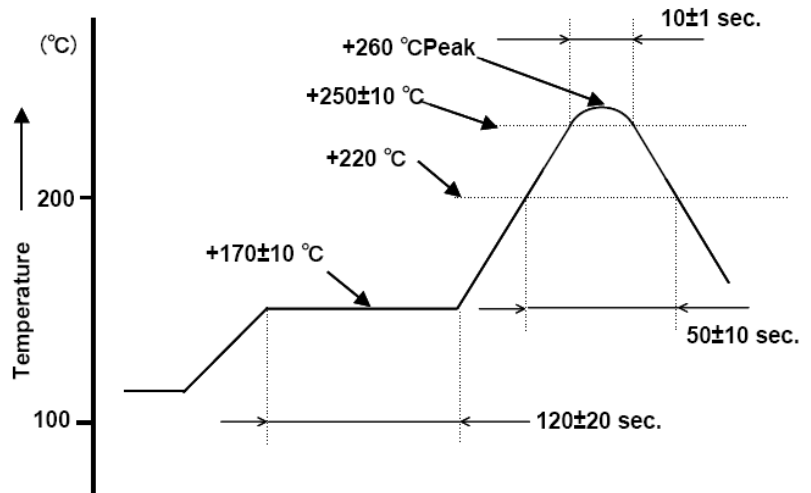
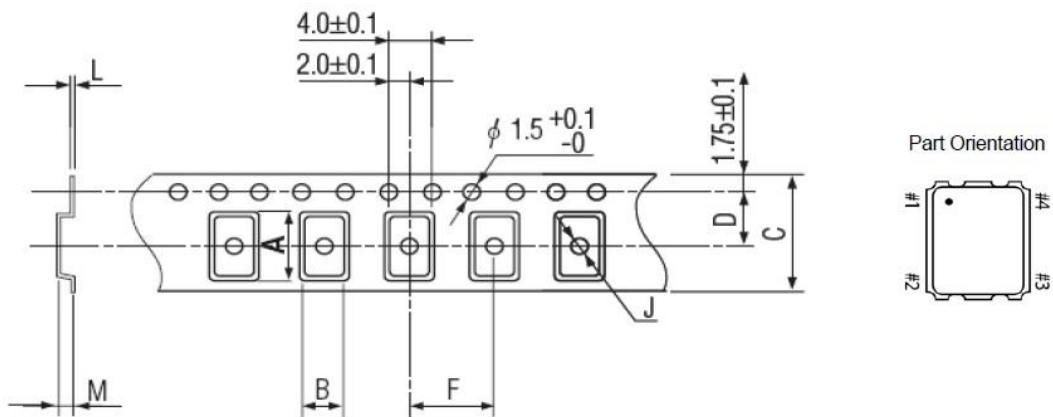


Figure 1) Suggested Reflow Profile

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

POCKET TAPE DIMENSIONS (mm)



| A | B | C | D | F | J | L | M | Reel Dia. | Qty/Reel |
|-----|-----|-----|-----|-----|-----|------|-----|-----------|----------|
| 2.8 | 2.3 | 8.0 | 3.5 | 4.0 | 1.0 | 0.25 | 1.1 | 180 | 1000pcs |