

The ECS-327ATQMV is a miniature 32.768 kHz SMD AEC-Q200 Qualified HCMOS Oscillator with MultiVolt™ capability of 1.62 ~ 3.63 V. The 3.2 x 2.5 x 0.9 mm ceramic package is ideal for Low Power/Portable, Industrial, and IoT applications.

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS



- 3.2 x 2.5 mm Footprint
- AEC-Q200 Qualified
- AT Strip Crystal for tighter stability
- MultiVolt™ Wide Supply Voltage
- Compatible with 1.8V, 2.5V or 3.3V Power Supply

| PARAMETERS            | CONDITIONS                                 | ECS-327ATQMV |        |       | UNITS |
|-----------------------|--------------------------------------------|--------------|--------|-------|-------|
|                       |                                            | MIN          | TYP    | MAX   |       |
| Frequency Range       |                                            |              | 32.768 |       | kHz   |
| * Frequency Stability | -40 ~ +125°C<br>(AS Opt.)                  |              |        | ±100  | ppm   |
| Supply Voltage        |                                            | 1.62         |        | 3.63  | V     |
| Output Load           | CMOS                                       |              |        | 15    | pF    |
| Output voltage Level  | VOL: 10% Vdd max. / VOH: 90% Vdd min. V DC |              |        |       |       |
| Current Consumption   |                                            |              |        | 0.2   | mA    |
| Standby Current       |                                            |              |        | 20    | µA    |
| Rise & Fall time      | 10% Vdd – 90% Vdd                          |              |        | 100   | ns    |
| Start Up Time         | @ 90% Vdd                                  |              |        | 10    | mS    |
| Duty Cycle            | @ ½ Vdd                                    |              |        | 45/55 | %     |
| Operating Temp*       |                                            | -40          |        | +125  | °C    |
| Storage Temp          |                                            | -55          |        | +125  | °C    |

### DIMENSIONS (mm)

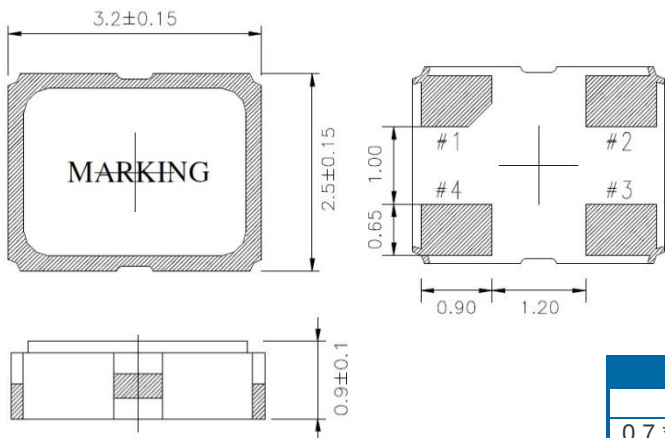


Figure 1) Top, Side, and Bottom views

| PAD CONNECTIONS |                 |
|-----------------|-----------------|
| 1               | Tri-state or NC |
| 2               | Gnd             |
| 3               | Output          |
| 4               | Vdd             |

| Tri State Function  |                |
|---------------------|----------------|
| Pin 1               | Output         |
| 0.7 * Vdd Min or NC | Active         |
| 0.3 * Vdd Max.      | High Impedance |

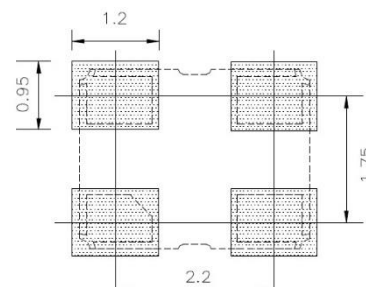


Figure 2) Suggested Land Pattern

### PART NUMBERING GUIDE: Example ECS-327ATQMV-AS-TR

| ECS | - | SERIES                                                                                | - | * STABILITY | TEMP RANGE       | - | PACKAGING                   |
|-----|---|---------------------------------------------------------------------------------------|---|-------------|------------------|---|-----------------------------|
| ECS |   | 327ATQMV<br>3.2 x 2.5 mm<br>32.768 KHz<br>AEC-Q200 Qualified<br>MultiVolt™ Oscillator |   | A= ±100 ppm | S = -40 ~ +125°C |   | TR = Tape & Reel<br>3K/Reel |

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



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