Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!


## Contact us

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Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

- Low Current 1.5 µA
- 4 x 2.5 mm Footprint
- 1.3 to 5.5V
- Pb Free/RoHS Compliant
- -40 ~ +85°C Operating Temp

# ECS-327KO
## SMD CLOCK OSCILLATOR

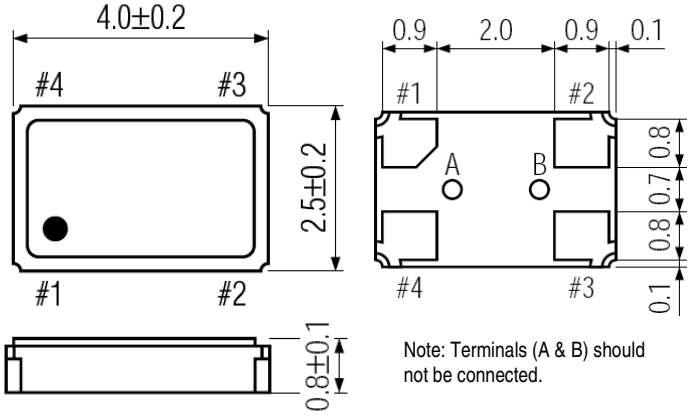
**ECS-327KO 32.768 KHz low power CMOS subminiature SMD oscillator. Ideal for today's high density low power applications.**

Discontinued

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS | CONDITIONS | ECS-327KO | | | UNITS |
|---|---|---|---|---|---|
| | | MIN | TYP | MAX | |
| Frequency | | | 32.768 | | KHz |
| Frequency Tolerance | VDD = +3.3V at +25°C | -10 | | +30 | ppm |
| Frequency Stability | -20 ~ +70°C | -100 | | +30 | ppm |
| | -40 ~ +85°C | -200 | | +30 | ppm |
| Operating Temperature | | -40 | | +85 | °C |
| Storage Temperature | | -55 | | + 125 | °C |
| Input Voltage | | +3.0 | +3.3 | ± 3.6 | VDC |
| Absolute Supply Voltage | | +1.3 | | + 5.5 | VDC |
| Input Current (-40~ +85°C) | at VDD=+3.3V, no load | | 1 | 1.5 | µA |
| Standby Current (at +25°C) | No Load | | | 200 | nA |
| Output Symmetry | @ 50% VDD CL 15 pF @+25°C | 40/60 | | 60/40 | % |
| Rise and Fall Times | CL 15 pF @+25°C (10% to 90% VDD) | | | 200 | ns |
| "0" level (VOL) | CL 15 pF @ +25°C | | | +0.4 | VDC |
| "1" level (VOH) | CL 15 pF @ +25°C | VDD-0.4V | | | VDC |
| Output Load | CMOS | | | 15 | pF |
| Disable delay time | | | | 100 | nS |
| Enable delay time | VDD = +3.3V @ +25°C | | | 3 | S |
| Startup time | VDD = +3.3V @ +25°C | | | 3 | S |
| Aging (first year) | @ +25°C ±3°C | | | ± 5 | ppm |

## DIMENSIONS (mm)




Note: Terminals (A & B) should not be connected.

*Figure 1) Top, Side and Bottom views*

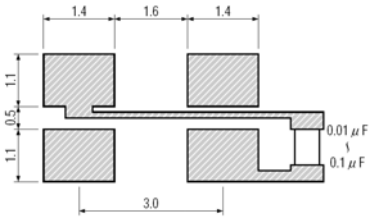



*Figure 2) Suggested Land Pattern*

| Pin Connections | |
|---|---|
| Pin #1 | Tri-State |
| Pin #2 | Ground |
| Pin #3 | Output |
| Pin #4 | VDD |

| Tri-State Control Voltage | |
|---|---|
| Pad 1 | Pad 3 |
| Open | Oscillation |
| VIH 90% VDD Min | Oscillation |
| VIL10% VDD Max | High Impedance |

Note: Internal crystal oscillation to be halted (Pin #1=VIL)

## PART NUMBER: ECS-327KO-TR

ECS - Series - Packaging

- Series: ECS-327KO
- Packaging: TR = Tape & Reel 1K/Reel

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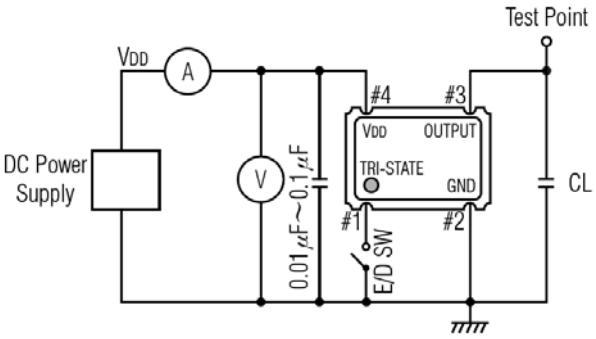



*Figure 1) Test Circuit*

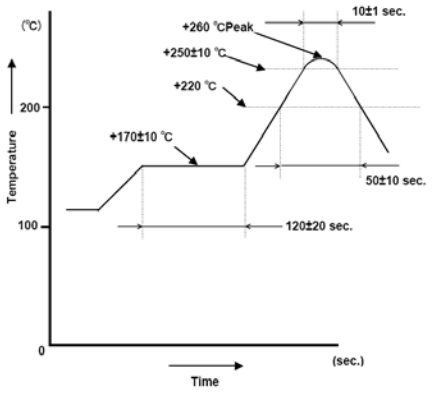
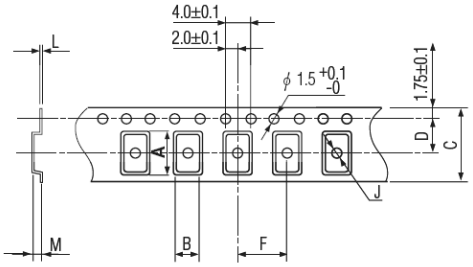



*Figure 3) Suggested Reflow Profile*




| A | B | C | D | F | J | L | M | Reel Dia. | Qty/Reel |
|---|---|---|---|---|---|---|---|---|---|
| 4.4 | 2.9 | 12.0 | 5.5 | 4.0 | 1.5 | 0.3 | 1.2 | 180 | 1000pcs |

*Figure 2) Pocket Tape Dimensions*

| Package Data | |
|---|---|
| **Item** | **Description** |
| Lid | Metal |
| Base | Ceramic |
| Sealing | AuSn |
| Terminal | Tungsten (metalized) |
| Plating | Gold/Nickel (Surface)/(Under) |
| RoHS | Compliant (Pb Free) |



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