



**THE DATASHEET OF  
ECS-3961-160-AU-TR**

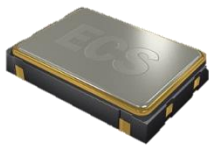


ECS-3961 (5V) and ECS-3963 (3.3V) miniature SMD crystal controlled oscillators. Package is seam welded with a metal lid.

[Request a Sample](#)

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

#### ECS-3961/3963



- 3.3 or 5.0V version
- 3.2 x 5 mm Footprint
- Low Current Consumption
- PbFree/RoHS Compliant

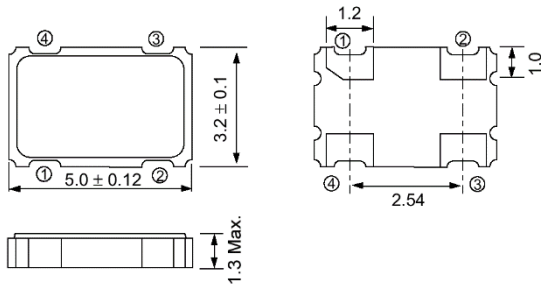
| Parameters                   | Conditions                | ECS-3961 (+5V) |      |         | ECS-3963 (+3.3V) |      |         | Units |
|------------------------------|---------------------------|----------------|------|---------|------------------|------|---------|-------|
|                              |                           | MIN            | TYP  | MAX     | MIN              | TYP  | MAX     |       |
| <b>Frequency Range</b>       |                           | 1.544          |      | 125.000 | 1.000            |      | 125.000 | MHz   |
| <b>Operating Temperature</b> | Standard                  | -10            |      | +70     | -10              |      | +70     | °C    |
|                              | Extended (N Option)       | -40            |      | +85     | -40              |      | +85     | °C    |
| <b>Storage Temperature</b>   |                           | -55            |      | +125    | -55              |      | +125    | °C    |
| <b>Supply Voltage</b>        |                           | +4.5           | +5.0 | +5.5    | +2.7             | +3.3 | +3.6    | VDC   |
| <b>Frequency Stability*</b>  | Option A                  |                |      | ±100    |                  |      | ±100    | PPM   |
|                              | Option B                  |                |      | ±50     |                  |      | ±50     | PPM   |
|                              | Option C                  |                |      | ±25     |                  |      | ±25     | PPM   |
| <b>Input Current</b>         | 1.544 ~ 9.999 MHz         |                |      | 15      |                  |      | 8       | mA    |
|                              | 10.0 ~ 34.999 MHz         |                |      | 20      |                  |      | 10      | mA    |
|                              | 35.0 ~ 49.999 MHz         |                |      | 35      |                  |      | 25      | mA    |
|                              | 50.0 ~ 125 MHz            |                |      | 40      |                  |      | 35      | mA    |
| <b>Output Symmetry</b>       | @50% VCC Level            |                |      | 40/60   |                  |      | 40/60   | %     |
|                              | @50% VCC Level (T Option) |                |      | 45/55   |                  |      | 45/55   | %     |
| <b>Rise and Fall Times</b>   | 10% VDD to 90% Level      |                |      | 5       |                  |      | 5       | ns    |
| <b>"0" Level</b>             | VOL                       |                |      | 10% VDD |                  |      | 10% VDD | VDC   |
| <b>"1" Level</b>             | VOH                       | 90% VDD        |      |         | 90% VDD          |      |         | VDC   |
| <b>Output Load</b>           | HCMOS                     |                |      | 30      |                  |      | 15      | pF    |
| <b>Startup Time</b>          |                           |                |      | 10      |                  |      | 10      | ms    |

\* Note: Inclusive of 25°C tolerance, operating temperature, input voltage change, load change, shock and vibration.

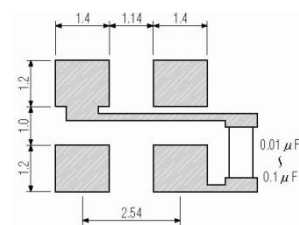
### Part Numbering Guide: Example ECS-3963-200-BN-TR

| ECS | Series                 | Frequency Abbreviations | Stability Tolerance                        | Temperature  | Symmetry                   | Packaging                   |
|-----|------------------------|-------------------------|--|--|----------------------------|-----------------------------|
| ECS | 3961 +5V<br>3963 +3.3V | 200 = 20 MHz            | A = ±100 ppm<br>B = ±50 ppm<br>C = ±25 ppm | Blank = -10 ~ 70°C<br>M = -20 ~ +70°C<br>N = -40 ~ +85°C<br>U = -55 ~ +125°C | Blank = 40/60<br>T = 45/55 | TR = Tape & Reel<br>1K/Reel |

**Package Dimensions (mm)**



**Figure 1) Top, Side, and Bottom views**

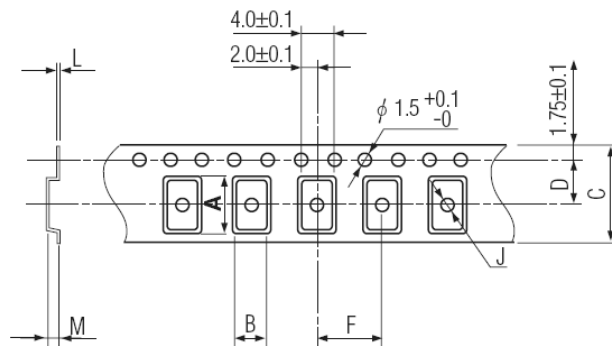


**Figure 2) Land Pattern**

| Pin Connections |                 |
|-----------------|-----------------|
| #1              | Tri-State**     |
| #2              | Ground          |
| #3              | Output          |
| #4              | V <sub>DD</sub> |

\*\* Note: Internal pullup resistor from pin 1 to 4 allows active output if pin 1 is left open.

| Tri-State Control Voltage |                |
|---------------------------|----------------|
| Pad 1                     | Pad 3          |
| Open                      | Oscillation    |
| 70% VDD Min.              | Oscillation    |
| 30% VDD Max.              | No Oscillation |





| A    | B    | C    | D   | F   | J   | L   | M   | Reel Dia. | Qty/Reel |
|------|------|------|-----|-----|-----|-----|-----|-----------|----------|
| 5.25 | 3.45 | 12.0 | 5.5 | 8.0 | 2.0 | 0.3 | 1.8 | 178       | 1000pcs  |

**Figure 3) Tape Specifications**

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View ECS-3961-160-AU-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