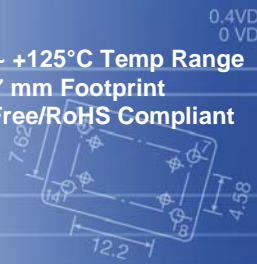




**THE DATASHEET OF  
ECS-3953M-1000-AU-TR**



- ▶ -55 ~ +125°C Temp Range
- ▶ 5 x 7 mm Footprint
- ▶ Pb Free/RoHS Compliant



# ECS-3951M/3953M-AU

## SMD CLOCK OSCILLATOR

ECS-3951M-AU (5.0V) and ECS-3953M-AU (3.3V) Automotive Grade (-55 to +125°C) miniature SMD oscillators. Ideal for today's high temperature range applications.

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS            | CONDITIONS             | ECS-3951M-AU (+5V) |      |         | ECS-3953M-AU (+3.3V) |      |         | UNITS |
|-----------------------|------------------------|--------------------|------|---------|----------------------|------|---------|-------|
|                       |                        | MIN                | TYP  | MAX     | MIN                  | TYP  | MAX     |       |
| Frequency Range       |                        | 1.000              |      | 106.25  | 1.000                |      | 200.000 | MHz   |
| Operating Temperature | Standard               | -55                |      | +125    | -55                  |      | +125    | °C    |
| Storage Temperature   |                        | -55                |      | +125    | -55                  |      | +125    | °C    |
| Supply Voltage        | VDD                    | +4.5               | +5.0 | +5.5    | +2.97                | +3.3 | +3.63   | VDC   |
| Frequency Stability * | Option A               |                    |      | ± 100   |                      |      | ± 100   | ppm   |
| Input Current         | 1.000 to 34.999 MHz    |                    |      | 25      |                      |      | 16      | mA    |
|                       | 35.000 to 60.000 MHz   |                    |      | 50      |                      |      | 25      | mA    |
|                       | 60.001 to 99.999 MHz   |                    |      | 60      |                      |      | 40      | mA    |
|                       | 100.000 to 106.250 MHz |                    |      | 80      |                      |      | 50      | mA    |
|                       | 106.251 to 200.000 MHz |                    |      |         |                      |      | 50      | mA    |
| Output Symmetry       | @ 50% VDD level        |                    |      | 40/60   |                      |      | 40/60   | %     |
| Rise and Fall Times   | 1.000 to 60.000 MHz    |                    |      | 10      |                      |      | 10      | ns    |
|                       | 60.001 to 99.999 MHz   |                    |      | 5       |                      |      | 5       | ns    |
|                       | 100.000 to 200.000 MHz |                    |      | 2.5     |                      |      | 2.5     | ns    |
| "0" level             | VOL                    |                    |      | 10% VDD |                      |      | 10% VDD | VDC   |
| "1" level             | VOH                    | 90% VDD            |      |         | 90% VDD              |      |         | VDC   |
| Output Load           | HCMOS                  |                    |      | 30      |                      |      | 15      | pF    |
| Startup time          |                        |                    |      | 10      |                      |      | 10      | ms    |
| Disable delay time    |                        |                    |      | 100     |                      |      | 100     | ns    |
| Period Jitter         | pk-pk                  |                    |      | 100     |                      |      | 100     | ps    |
| Period Jitter         | One Sigma              |                    |      | 25      |                      |      | 25      | ps    |
| Aging                 | at +25°C               |                    |      | ± 5     |                      |      | ± 5     | ppm   |

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

### DIMENSIONS (mm)

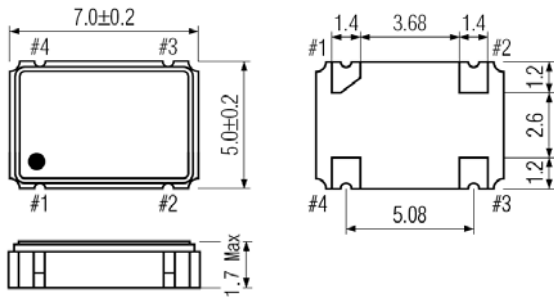


Figure 1) Top, Side and Bottom views

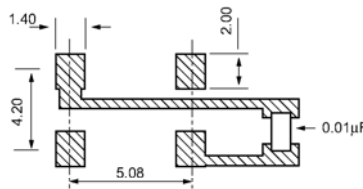


Figure 2) Suggested Land Pattern

### 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 70% VDD Min | Oscillation    |
| VIL 30% VDD Max | No Oscillation |



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

### PART NUMBERING GUIDE: Example ECS-3953M-200-AU

|            |                                |   |                    |                    |
|------------|--------------------------------|---|--------------------|--------------------|
| <b>ECS</b> | <b>- Series</b>                | <b>- Frequency Abbreviation</b>                 | <b>- Stability</b> | <b>Temperature</b> |
|            | 3951M = +5.0V<br>3953M = +3.3V | 200 = 20.000 MHz<br>See Frequency Abbreviations | A = ± 100 ppm      | U = -55 ~ +125°C   |

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

Click below to explore more details on WIN SOURCE:

-  [View ECS-3953M-1000-AU-TR on WIN SOURCE](#)
-  [ECS Inc. Information](#)

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