

The ECS-8FMX (5V) and ECS-8FA3X (3.3V) are CMOS compatible, J-Leaded SMD oscillators. The 8F Series utilizes a low power CMOS IC in a cost effective package suitable for reflow soldering.

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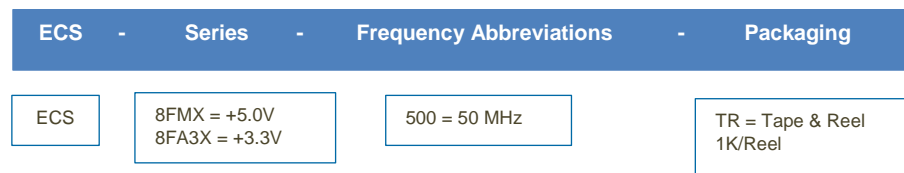
## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| ECS-8FX | Parameters                  | Conditions      | ECS-8FMX (+5V) |      |        | ECS-8FA3X (+3.3V) |          |        | Units |
|---------|-----------------------------|-----------------|----------------|------|--------|-------------------|----------|--------|-------|
|         |                             |                 | MIN            | TYP  | MAX    | MIN               | TYP      | MAX    |       |
|         | <b>Frequency Range</b>      |                 | 1.000          |      | 80.000 | 1.000             |          | 80.000 | MHz   |
|         | <b>Temperature Range</b>    | Operating       | -40            |      | +85    | -40               |          | +85    | °C    |
|         |                             | Storage         | -55            |      | +125   | -55               |          | +125   | °C    |
|         | <b>Supply Voltage</b>       |                 | +4.5           | +5.0 | +5.5   | +3.0              | +3.3     | +3.6   | VDC   |
|         | <b>Frequency Tolerance*</b> | -10 ~ +70°C     |                |      | ±100   |                   |          | ±100   | PPM   |
|         |                             | -40 ~ 85°C      |                |      | ±200   |                   |          | ±200   | PPM   |
|         | <b>Input Current</b>        | 1.0 ~ 30.0 MHz  |                |      | 23     |                   |          | 9      | mA    |
|         |                             | 30.1 ~ 80.0 MHz |                |      | 35     |                   |          | 20     | mA    |
|         | <b>Output Symmetry</b>      | @ ½ VCC Level   | 40/60          |      | 60/40  | 45/55             |          | 55/45  | %     |
|         | <b>Rise and Fall Times</b>  | 1.0 ~ 30.0 MHz  |                |      | 8      |                   |          | 6      | ns    |
|         |                             | 30.1 ~ 80.0 MHz |                |      | 7      |                   |          | 6      | ns    |
|         | <b>Output Voltage</b>       | VOL             |                |      | +0.5   |                   |          | +0.4   | V     |
|         |                             | VOH             | VCC -0.5       |      |        |                   | VCC -0.4 |        | V     |
|         | <b>Output Load</b>          | TTL             |                |      | 10     |                   |          |        | TTL   |
|         |                             | CMOS            |                |      | 50     |                   |          | 30     | pF    |
|         | <b>Start-up Time</b>        | 1.0 ~ 30.0 MHz  |                |      | 4      |                   |          | 4      | ms    |
|         |                             | 30.1 ~ 80.0 MHz |                |      | 10     |                   |          | 10     | ms    |
|         | <b>Enable/Disable Time</b>  |                 |                |      | 100    |                   |          | 100    | ns    |

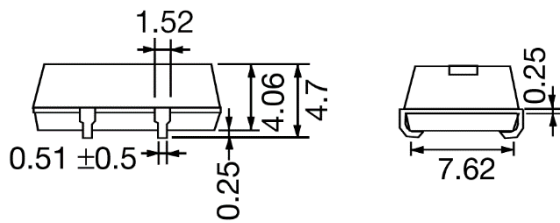
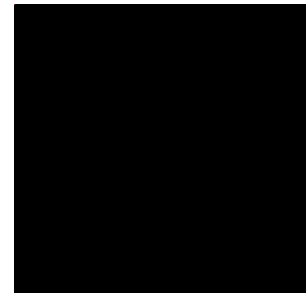
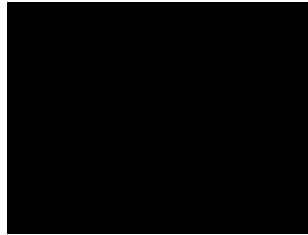
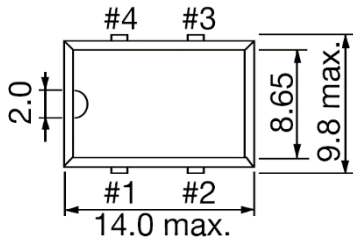
- 5.0V and 3.3V Versions
- Extended Temperature Range
- RoHS Compliant
- Tape and Reel (1,000 pcs STD)

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

### Part Numbering Guide: Example ECS-8FMX-500-TR



**Package Dimensions (mm)**



**Figure 2) Land Pattern**

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

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

| Tri-State Control Voltage |          |                |
|---------------------------|----------|----------------|
| 8FMX                      | 8FA3X    | Output         |
| Pin 1                     | Pin 1    | Pin 3          |
| Open**                    | Open**   | Oscillation    |
| 2V Min                    | 2.4V Min | Oscillation    |
| 0.8 Max                   | 0.6 Max  | High Impedance |

\*\* An internal pullup resistor from pin 1 to 4 allows active output if pin 1 is left open.