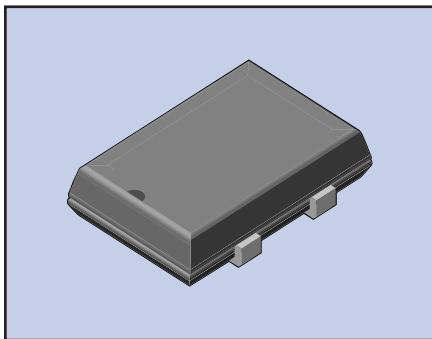




The ECS-8FMX (5V) and ECS-8FA3X (3.3V) are CMOS compatible, J-leaded SMD oscillators. The 8F Series utilizes a low power CMOS IC in a cost effective package suitable for reflow soldering.

### FEATURES

- 5.0V & 3.3V versions
- Extended temperature range
- RoHS Compliant
- Tape and Reel (1,000 pcs STD)

### PART NUMBERING GUIDE

|          | FREQUENCY (50.0 MHz) |     | TAPE AND REEL |    |
|----------|----------------------|-----|---------------|----|
| ECS-8FMX | –                    | 500 | –             | TR |

Sample Part Number: ECS-8FMX-500-TR

### OPERATING CONDITIONS/ELECTRICAL CHARACTERISTICS

| PARAMETERS           | CONDITIONS                  | ECS-8FMX (5V)        |      |        | ECS-8FA3X (3.3V)     |      |        | UNITS |
|----------------------|-----------------------------|----------------------|------|--------|----------------------|------|--------|-------|
|                      |                             | MIN                  | TYP  | MAX    | MIN                  | TYP  | MAX    |       |
| FREQUENCY RANGE      |                             | 1.000                |      | 80.000 | 1.000                |      | 80.000 | MHz   |
| TEMPERATURE RANGE    | Operating                   | -40°                 |      | +85°   | -40°                 |      | +85°   | °C    |
|                      | Storage                     | -55°                 |      | +125°  | -55°                 |      | +125°  | °C    |
| SUPPLY VOLTAGE       |                             | +4.5                 | +5.0 | +5.5   | +3.0                 | +3.3 | +3.6   | V DC  |
| FREQUENCY TOLERANCE* | -10 ~ +70°C                 |                      |      | ±100   |                      |      | ±100   | PPM   |
|                      | -40 ~ 85°C                  |                      |      | ±200   |                      |      | ±200   | PPM   |
| INPUT CURRENT        | 1.0 ~ 30.0 MHz              |                      |      | 23     |                      |      | 9      | mA    |
|                      | 30.1 ~ 80.0 MHz             |                      |      | 35     |                      |      | 20     | mA    |
| OUTPUT SYMMETRY      | @ 1/2 V <sub>CC</sub> Level | 40/60                |      | 60/40  | 45/55                |      | 55/45  | %     |
| RISE AND FALL TIMES  | 1.0 ~ 30.0 MHz              |                      |      | 8      |                      |      | 6      | ns    |
|                      | 30.1 ~ 80.0 MHz             |                      |      | 7      |                      |      | 6      | ns    |
| OUTPUT VOLTAGE       | V <sub>OL</sub>             |                      |      | +0.5   |                      |      | +0.4   | V     |
|                      | V <sub>OH</sub>             | V <sub>CC</sub> -0.5 |      |        | V <sub>CC</sub> -0.4 |      |        | V     |
| OUTPUT LOAD          | TTL                         |                      |      | 10     |                      |      |        | TTL   |
|                      | CMOS                        |                      |      | 50     |                      |      | 30     | pF    |
| START-UP TIME        | 1.0 ~ 30.0 MHz              |                      |      | 4      |                      |      | 4      | ms    |
|                      | 30.1 ~ 80.0 MHz             |                      |      | 10     |                      |      | 10     | ms    |
| ENABLE/DISABLE TIME  |                             |                      |      | 100    |                      |      | 100    | ns    |

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

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

### PACKAGE DIMENSIONS (mm)

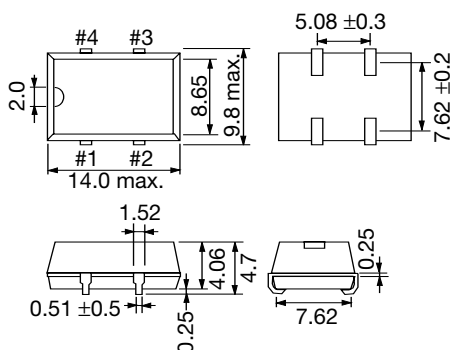


Figure 1) ECS-8FX Top and Side view

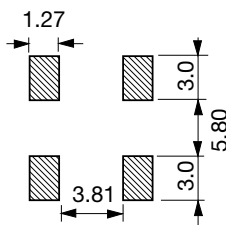


Figure 2) Land Pattern

| PIN CONNECTIONS |                 |
|-----------------|-----------------|
| #1              | TRI-STATE       |
| #2              | GND             |
| #3              | OUTPUT          |
| #4              | V <sub>CC</sub> |

| 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 |