

- ▶ Low Voltage HCMOS
- ▶ Industry Standard Footprint
- ▶ PLL technology
- ▶ RoHS Compliant

# ECS-P8F3X/P8F5X

## SMD PROGRAMMABLE OSCILLATOR

ECS-P8F3X (3.3V) and ECS-P8F5X (5V) J-Lead SMD PLL based programmable crystal oscillators.

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS             | CONDITIONS               | ECS-P8F3X (+3.3V) |      |         | ECS-P8F5X (+5V) |      |         | UNITS  |
|------------------------|--------------------------|-------------------|------|---------|-----------------|------|---------|--------|
|                        |                          | MIN               | TYP  | MAX     | MIN             | TYP  | MAX     |        |
| Frequency Range        |                          | 1.000             |      | 125.000 | 1.000           |      | 150.000 | MHz    |
| Operating Temperature  | Standard                 | -10               |      | +70     | -10             |      | +70     | °C     |
|                        | Extended (N Option)      | -40               |      | +85     | -40             |      | +85     | °C     |
| Storage Temperature    |                          | -55               |      | +125    | -55             |      | +125    | °C     |
| Supply Voltage         |                          | +2.97             | +3.3 | +3.63   | +4.5            | +5.0 | +5.5    | VDC    |
| Frequency Stability *  | Option A                 |                   |      | ± 100   |                 |      | ± 100   | ppm    |
|                        | Option B                 |                   |      | ± 50    |                 |      | ± 50    | ppm    |
| Input Current          |                          |                   |      | 28      |                 |      | 45      | mA     |
| Output Disable Current | Pin 1 = VIL              |                   |      | 16      |                 |      | 30      | mA     |
| Output Symmetry        | @ 50% Vcc level          |                   |      | 40/60   |                 |      | 40/60   | %      |
| Rise and Fall Times    | 20% Vcc to 80%Vcc level  |                   |      | 4       |                 |      | 4       | ns     |
| Jitter                 | 1.0 ~ 33.0 MHz           |                   | ±100 | ±250    | ±100            | ±250 | ±250    | pS p-p |
|                        | >33.1 MHz                |                   | ±50  | ±100    | ±50             | ±100 | ±100    | pS p-p |
| "0" level              | VOL                      |                   |      | 0.4     |                 |      | 0.4     | VDC    |
| "1" level              | VOH                      | 2.7               |      |         | Vcc-0.5         |      |         | VDC    |
| Output Load (HCMOS)    | 1.0 ~ 50.0 MHz           |                   |      | 30      |                 |      | 50      | pF     |
|                        | > 50.1 MHz               |                   |      | 15      |                 |      | 15      | pF     |
| Enable/Disable Time    |                          |                   |      | 150     |                 |      | 100     | ns     |
| Start-Up Time          |                          |                   |      | 10      |                 |      | 10      | ms     |
| Aging                  | @ +25°C ±3°C, First year |                   |      | ± 5     |                 |      | ± 5     | ppm    |

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

### DIMENSIONS (mm)

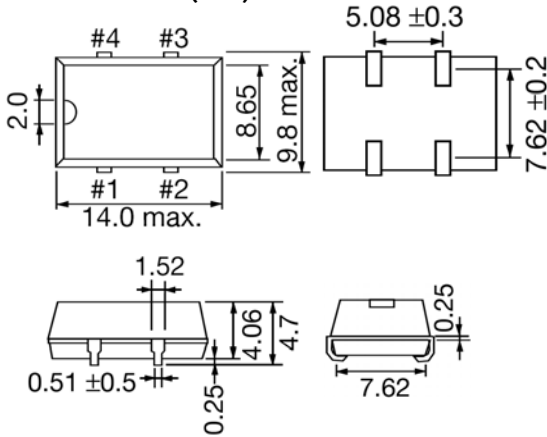


Figure 1) Top, Side, Bottom and End views

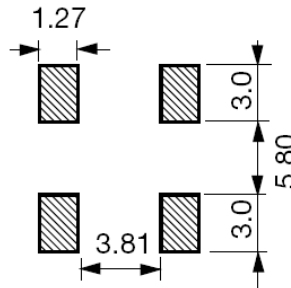


Figure 2) Suggested Land Pattern

| ECS-P8F3X (3.3V)<br>Tri-State Control Voltage |                |
|---|----------------|
| Pad 1   | Pad 3          |
| Open  | Oscillation    |
| 2.0V Min.                                     | Oscillation    |
| 0.7V Max.                                     | No Oscillation |

| ECS-P8F5X (5V)<br>Tri-State Control Voltage |                |
|---|----------------|
| Pad 1                                       | Pad 3          |
| Open  | Oscillation    |
| 2.0V Min.                                   | Oscillation    |
| 0.8V Max.                                   | No Oscillation |

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

### PART NUMBERING GUIDE: Example ECS-P8F3X-20.000-AN

| ECS | Series                         | Frequency              | Stability                     | Temperature                            |
|-----|--------------------------------|------------------------|-------------------------------|--|
|     | P8F3X = +3.3V<br>P8F5X = +5.0V | 20.000<br>= 20.000 MHz | A = ± 100 ppm<br>B = ± 50 ppm | Blank = -10 ~ +70°C<br>N = -40 ~ +85°C |