



The ECS-1000X Series clock oscillator can drive both HCMOS and TTL logic. This oscillator also features tri-state enable/disable capabilities in a 14 pin DIP package.

## FEATURES

- 50pF HCMOS/ TTL logic
- Tri-State enable/disable
- Wide frequency range
- Resistance weld package
- 3.3V operation (optional)
- PbFree/RoHS Compliant



## PART NUMBERING GUIDE

| PART NUMBER * | FREQUENCY STABILITY |
|---------------|---------------------|
| ECS-1000AX    | ±100 PPM            |
| ECS-1000BX    | ±50 PPM             |
| ECS-1000CX    | ±25 PPM             |

\* Complete part number to include frequency, i.e. ECS-1000AX-100 (100 = 10.000MHz)

## OPERATING CONDITIONS/ELECTRICAL CHARACTERISTICS

| PARAMETERS                                  | FREQUENCY RANGE  | CONDITIONS               | MINIMUM | TYPICAL | MAXIMUM | UNITS |
|---|------------------|--------------------------|---------|---------|---------|-------|
| FREQUENCY RANGE ( $f_0$ )                   | 1.000 ~ 100.000  |                          | 1.000   |         | 100.000 | MHz   |
| OPERATING TEMP. RANGE ( $T_{OPR}$ )         | 1.000 ~ 100.000  |                          | 0       |         | +70     | °C    |
| STORAGE TEMP. RANGE ( $T_{STG}$ )           | 1.000 ~ 100.000  |                          | -55     |         | +125    | °C    |
| FREQUENCY STABILITY                         | 1.000 ~ 100.000  | All conditions*          | -100    |         | +100    | PPM   |
| INPUT CURRENT ( $I_{DD}$ )                  | 1.000 ~ 25.000   |                          |         | 17      | 25      | mA    |
|   | 25.000 ~ 50.000  |                          |         | 33      | 40      | mA    |
|   | 50.000 ~ 80.000  |                          |         | 45      | 77      | mA    |
|   | 80.000 ~ 100.000 |                          |         | 67      | 82      | mA    |
| OUTPUT SYMMETRY                             | 1.000 ~ 80.000   | 50% $V_{DD}$ level       | 45      | 50 ±3   | 55      | %     |
|   | 80.000 ~ 100.000 | 50% $V_{DD}$ level       | 40      | 50 ±3   | 60      | %     |
| RISE TIME ( $T_R$ )                         | 1.000 ~ 100.000  | 10% ~ 90% $V_{DD}$ level |         |         | 5       | nS    |
| FALL TIME ( $T_F$ )                         | 1.000 ~ 100.000  | 90% ~ 10% $V_{DD}$ level |         |         | 5       | nS    |
| OUTPUT VOLTAGE ( $V_{OL}$ )<br>( $V_{OH}$ ) | 1.000 ~ 100.000  | $I_{OL} = 16$ mA         |         |         | 0.5     | V     |
|   | 1.000 ~ 100.000  | $I_{OH} = -16$ mA        | 4.5     |         |         | V     |
| OUTPUT CURRENT ( $I_{OL}$ )<br>( $I_{OH}$ ) | 1.000 ~ 100.000  | $V_{OL} = 0.5$ V         |         |         | 16      | mA    |
|   | 1.000 ~ 100.000  | $V_{OH} = 4.5$ V         |         |         | -16     | mA    |
| OUTPUT LOAD                                 | 1.000 ~ 100.000  | TTL                      |         |         | 10      | TTL   |
|   | 1.000 ~ 80.000   | HCMOS                    |         |         | 50      | pF    |
|   | 80.000 ~ 100.000 | HCMOS                    |         |         | 30      | pF    |
| START-UP TIME ( $T_s$ )                     | 1.000 ~ 100.000  |                          |         |         | 10      | mS    |
| SUPPLY VOLTAGE                              |                  | +5.0 ±0.25               |         |         |         | V     |

\* 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 pin 14 allows active output if pin 1 is left open.

## PACKAGE DIMENSIONS (mm)

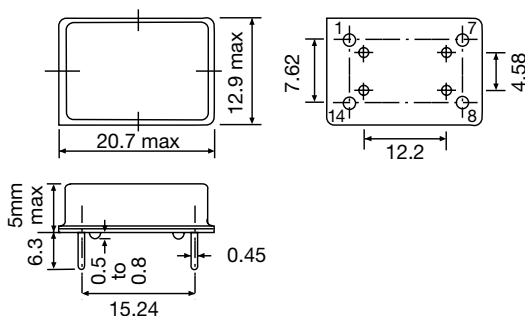


Figure 1) ECS-1000X Series – Top, Bottom and Side views

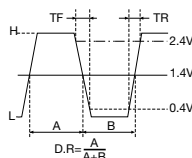


Figure 2) TTL Output Wave Form

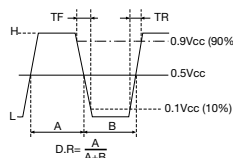


Figure 3) HCMOS Output Wave Form

| PIN CONNECTIONS |             |
|-----------------|-------------|
| #1              | TRI-STATE   |
| #7              | CASE GROUND |
| #8              | OUTPUT      |
| #14             | +5V DC      |

| ENABLE / DISABLE FUNCTION**  |                |
|--|----------------|
| $\overline{INH}$ (PIN 1)   | OUTPUT (PIN 8) |
| OPEN**   | ACTIVE         |
| 1 LEVEL $V_{IH} \geq 2.2$ V<br>( $V_{IH} \geq 2.0$ V<br>ABOVE 70MHz) | ACTIVE         |
| '0' LEVEL $V_{IL} \leq 0.8$ V  | HIGH Z         |