



The ECS-2100 Series clock oscillator offers low current drain and is compatible with HCMOS/TTL logic. The metal package with pin #4 case ground acts as a shielding to minimize radiation.

## FEATURES

- HCMOS/TTL logic compatible
- Wide frequency range
- Low power consumption
- Resistance weld package
- 3.3V operation (optional)

## PART NUMBERING GUIDE

| PART NUMBER * | FREQUENCY STABILITY |
|---------------|---------------------|
| ECS-2100A     | ±100 PPM            |
| ECS-2100B     | ±50 PPM             |
| ECS-2100C     | ±25 PPM             |

\* Complete part number to include frequency. i.e. ECS-2100A-100 (100 = 10.000MHz)

## OPERATING CONDITIONS/ELECTRICAL CHARACTERISTICS

| PARAMETERS                                  | FREQUENCY RANGE  | CONDITIONS               | MINIMUM | TYPICAL | MAXIMUM | UNITS           |
|---|------------------|--------------------------|---------|---------|---------|-----------------|
| FREQUENCY RANGE ( $f_0$ )                   | 1.000 ~ 150.000  |                          | 1.000   |         | 150.000 | MHz             |
| OPERATING TEMP. RANGE ( $T_{OPR}$ )         | 1.000 ~ 150.000  |                          | 0       |         | +70     | °C              |
| STORAGE TEMP. RANGE ( $T_{STG}$ )           | 1.000 ~ 150.000  |                          | -55     |         | +125    | °C              |
| FREQUENCY STABILITY                         | 1.000 ~ 150.000  | All conditions*          | -100    |         | +100    | PPM             |
| INPUT CURRENT ( $I_{DD}$ )                  | 1.000 ~ 25.000   |                          |         | 17      | 25      | mA              |
|   | 25.000 ~ 50.000  |                          |         | 33      | 46      | mA              |
|   | 50.000 ~ 80.000  |                          |         | 45      | 77      | mA              |
|   | 80.000 ~ 150.000 |                          |         | 67      | 82      | mA              |
| OUTPUT SYMMETRY                             | 1.000 ~ 80.000   | 50% $V_{DD}$ level       | 45      | 50 ±3   | 55      | %               |
|   | 80.000 ~ 150.000 | 50% $V_{DD}$ level       | 40      | 50 ±3   | 60      | %               |
| RISE TIME ( $T_R$ )                         | 1.000 ~ 150.000  | 10% ~ 90% $V_{DD}$ level |         |         | 5       | nS              |
| FALL TIME ( $T_F$ )                         | 1.000 ~ 150.000  | 90% ~ 10% $V_{DD}$ level |         |         | 5       | nS              |
| OUTPUT VOLTAGE ( $V_{OL}$ )<br>( $V_{OH}$ ) | 1.000 ~ 150.000  | $I_{OL} = 16$ mA         |         |         | 0.5     | V               |
|   | 1.000 ~ 150.000  | $I_{OH} = -16$ mA        | 4.5     |         |         | V               |
| OUTPUT CURRENT ( $I_{OL}$ )<br>( $I_{OH}$ ) | 1.000 ~ 100.000  | $V_{OL} = 0.5$ V         |         |         | 16      | mA              |
|   | 1.000 ~ 150.000  | $V_{OH} = 4.5$ V         |         |         | -16     | mA              |
| OUTPUT LOAD                                 | 1.000 ~ 150.000  | TTL                      |         |         | 10      | TTL             |
|   | 1.000 ~ 80.000   | HCMOS                    |         |         | 50      | pF              |
|   | 80.000 ~ 150.000 | HCMOS                    |         |         | 30      | pF              |
| START-UP TIME ( $T_s$ )                     | 1.000 ~ 150.000  | 0.0V TO 5.0V             |         |         | 10      | mS              |
| SUPPLY VOLTAGE ( $V_{DC}$ )                 |                  | +5.0 ±0.25               |         |         |         | V <sub>DC</sub> |

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

## PACKAGE DIMENSIONS (mm)



Figure 1) ECS-2100 Series – Side, Bottom and Top views



Figure 2) TTL Output Wave Form

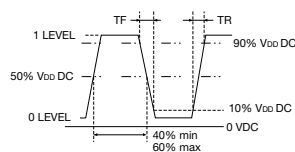


Figure 3) HCMOS Output Wave Form

| PIN CONNECTIONS |        |
|-----------------|--------|
| #1              | NC     |
| #4              | GROUND |
| #5              | OUTPUT |
| #8              | +5V DC |