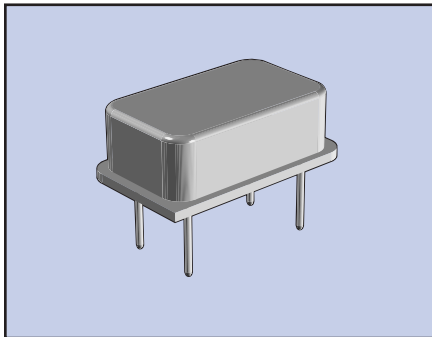




The ECS-100X clock oscillator is fully compatible with TTL circuitry. The metal package with pin #7 case ground acts as shielding to minimize radiation.

## FEATURES

- 10 TTL output load
- Low cost
- Wide frequency range
- Industry standard footprint
- Resistance weld package
- 3.3V operation (optional)
- PbFree/RoHS Compliant



## PART NUMBERING GUIDE

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

\* Complete part number to include frequency, i.e. ECS-100AX-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 ~ 7.999    | max. load        |         |         | 15      | mA              |
|                                     | 8.000 ~ 23.999   | max. load        |         |         | 30      | mA              |
|                                     | 24.000 ~ 69.999  | max. load        |         |         | 70      | mA              |
|                                     | 70.000 ~ 150.000 | max. load        |         |         | 80      | mA              |
| OUTPUT SYMMETRY                     | 1.000 ~ 7.999    | 1.4V level       | 45      | 50 ±3   | 55      | %               |
|                                     | 8.000 ~ 150.000  | 1.4V level       | 40      | 50 ±3   | 60      | %               |
| RISE TIME ( $T_R$ )                 | 1.000 ~ 24.999   | 0.4V ~ 2.4V      |         |         | 10      | nS              |
|                                     | 25.000 ~ 69.999  | 0.5V ~ 2.4V      |         |         | 5       | nS              |
|                                     | 70.000 ~ 150.000 | 0.5V ~ 2.4V      |         |         | 4       | nS              |
| FALL TIME ( $T_F$ )                 | 1.000 ~ 24.999   | 2.4V ~ 0.4V      |         |         | 10      | nS              |
|                                     | 25.000 ~ 69.999  | 2.4V ~ 0.5V      |         |         | 5       | nS              |
|                                     | 70.000 ~ 150.000 | 2.4V ~ 0.5V      |         |         | 4       | nS              |
| OUTPUT VOLTAGE ( $V_{OL}$ )         | 1.000 ~ 24.999   | $I_{OL} = 20$ mA |         |         | 0.4     | V               |
|                                     | 25.000 ~ 150.000 | $I_{OL} = 20$ mA |         |         | 0.5     | V               |
|                                     | 70.000 ~ 150.000 | $I_{OH} = 1$ mA  | 2.4     |         |         | V               |
| OUTPUT CURRENT ( $I_{OL}$ )         | 1.000 ~ 150.000  | $V_{OL} = 0.5$ V |         |         | 20      | mA              |
|                                     | 1.000 ~ 150.000  | $V_{OH} = 2.4$ V |         |         | 1.0     | mA              |
| OUTPUT LOAD                         | 1.000 ~ 150.000  |                  |         |         | 10      | TTL             |
| START-UP TIME ( $T_S$ )             | 1.000 ~ 3.499    |                  |         |         | 20      | mS              |
|                                     | 3.500 ~ 3.999    |                  |         |         | 35      | mS              |
|                                     | 4.000 ~ 5.999    |                  |         |         | 30      | mS              |
|                                     | 6.000 ~ 19.999   |                  |         |         | 20      | mS              |
|                                     | 20.000 ~ 150.000 |                  |         |         | 15      | mS              |
| SUPPLY VOLTAGE                      | 1.000 ~ 150.000  | +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)

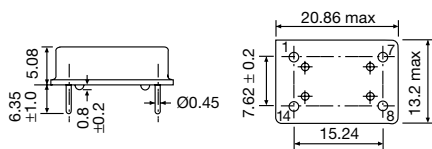


Figure 1) ECS-100X Series Side and Bottom views

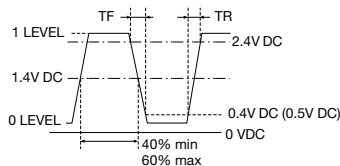


Figure 2) Output Wave Form

| PIN CONNECTIONS |          |
|-----------------|----------|
| #1              | NC       |
| #7              | CASE GND |
| #8              | OUTPUT   |
| #14             | +5 V DC  |

Figure 3) Pin Connections