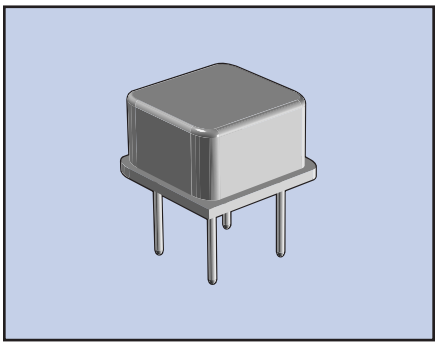
# ECS-2100 SERIES 8 PIN DIP CLOCK OSCILLATOR



The ECS-2100 Series clock oscillator offers low current drain and is compatible with HCMOS/TTL logic. The metal package with pin #7 case ground acts as a shielding to minimize radiation and conforms to FCC EMI specifications.

## 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 ($V_{OL}$) | 1.000 ~ 150.000 | $I_{OL}$ = 16 mA | | | 0.5 | V |
| OUTPUT VOLTAGE ($V_{OH}$) | 1.000 ~ 150.000 | $I_{OH}$ = -16 mA | 4.5 | | | V |
| OUTPUT CURRENT ($I_{OL}$) | 1.000 ~ 100.000 | $V_{OL}$ = 0.5 V | | | 16 | mA |
| OUTPUT CURRENT ($I_{OH}$) | 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 | | | | $V_{DC}$ |

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

## PACKAGE DIMENSIONS (mm)

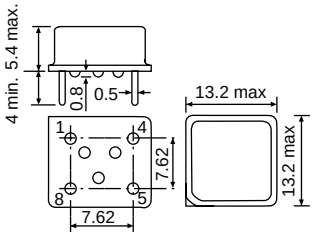



*Figure 1) ECS-2100 Series – Side, Bottom and Top views*

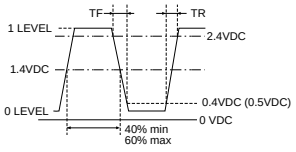



*Figure 2) TTL Output Wave Form*

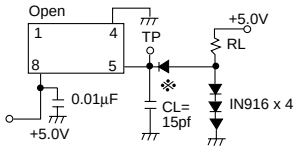



*Figure 3) TTL Test Circuit*

| PIN CONNECTIONS | |
|---|---|
| #1 | NC |
| #4 | Ground |
| #5 | Output |
| #8 | +5V DC |

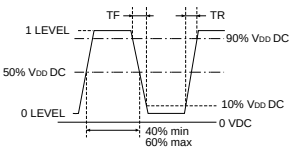



*Figure 4) HCMOS Output Wave Form*

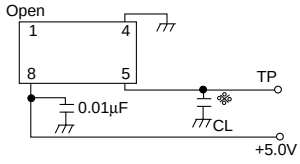



*Figure 5) HCMOS Measurement Circuit ($C_L$ = 15pF)*