

The ECS-2100X 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.

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

#### ECS-2100X



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

| Parameters                                           | Frequency Range  | Conditions                      | MIN   | TYP    | MAX     | Units           |
|------------------------------------------------------|------------------|---------------------------------|-------|--------|---------|-----------------|
| Frequency (F <sub>O</sub> )                          | 1.000 ~ 150.000  |                                 | 1.000 |        | 150.000 | MHz             |
| Operating Temperature Range (T <sub>OPR</sub> )      | 1.000 ~ 150.000  |                                 | 0     |        | +70     | °C              |
| Storage Temperature Range (T <sub>STG</sub> )        | 1.000 ~ 150.000  |                                 | -55   |        | +125    | °C              |
| Frequency Stability                                  | 1.000 ~ 150.000  | All Conditions*                 | -100  |        | +100    | PPM             |
| Input Current (I <sub>DD</sub> )                     | 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 <sub>DD</sub> level       | 45    | 50 ± 3 | 55      | %               |
|                                                      | 80.000 ~ 150.000 | 50% V <sub>DD</sub> level       | 40    | 50 ± 3 | 60      | %               |
| Rise Time (T <sub>R</sub> )                          | 1.000 ~ 150.000  | 10% ~ 90% V <sub>DD</sub> level |       |        | 5       | nS              |
| Fall Time (T <sub>F</sub> )                          | 1.000 ~ 150.000  | 90% ~ 10% V <sub>DD</sub> level |       |        | 5       | nS              |
| Output Voltage (V <sub>OL</sub> ) (V <sub>OH</sub> ) | 1.000 ~ 150.000  | I <sub>OL</sub> = 16 mA         |       |        | 0.5     | V               |
|                                                      | 1.000 ~ 150.000  | I <sub>OH</sub> = -16 mA        | 4.5   |        |         | V               |
| Output Current (I <sub>OL</sub> ) (I <sub>OH</sub> ) | 1.000 ~ 150.000  | V <sub>OL</sub> = 0.5V          |       |        | 16      | mA              |
|                                                      | 1.000 ~ 150.000  | V <sub>OH</sub> = 4.5V          |       |        | -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 <sub>S</sub> )                      | 1.000 ~ 150.000  | 0.0V to 5.0V                    |       |        | 10      | mS              |
| Supply Voltage (V <sub>DC</sub> )                    |                  |                                 | +4.75 | +5.0   | +5.25   | V <sub>DC</sub> |

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

### Part Numbering Guide: Example ECS-2100AX-100

ECS - Series - Stability - Frequency Abbreviations

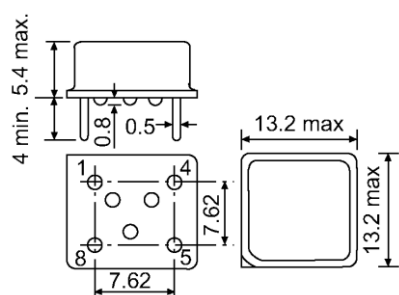
ECS

2100  
+5V HCMOS/TTL  
Half Size

AX = ±100 PPM  
BX = ±50 PPM  
CX = ±25 PPM

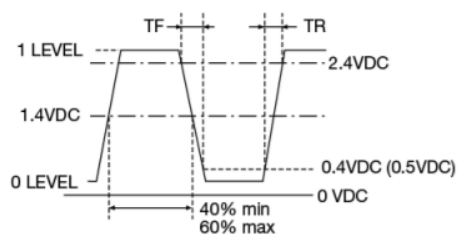
100 = 10.000 MHz

## Package Dimensions (mm)

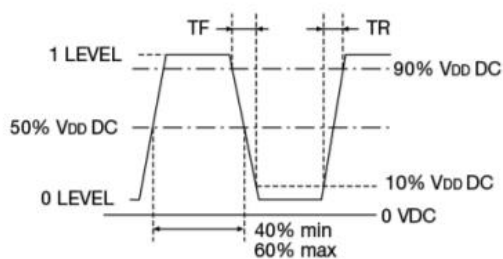


**Figure 1)** Side, Bottom, and Top views

| Pin Connections |        |
|-----------------|--------|
| #1              | NC     |
| #4              | GROUND |
| #5              | Output |
| #8              | +5V DC |



**Figure 2)** TTL Output Wave Form



**Figure 3)** HCMOS Output Wave Form