

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.

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### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

#### ECS-100X



- 10 TTL output load
- Low cost
- Wide frequency range
- Industry standard footprint
- Resistance weld package
- 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 ~ 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 <sub>R</sub> )                     | 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 <sub>F</sub> )                     | 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 <sub>OL</sub> ) 1.000 ~ 24.999   | IOL = 20 mA     |       |        | 0.4     | V     |
|   | (V <sub>OL</sub> ) 25.000 ~ 69.999  | IOL = 20 mA     |       |        | 0.5     | V     |
|   | (V <sub>OH</sub> ) 70.000 ~ 150.000 | IOH = 1 mA      | 2.4   |        |         | V     |
| Output Current                                  | (I <sub>OL</sub> ) 1.000 ~ 150.000  | VOL = 0.5V      |       |        | 20      | mA    |
|   | (I <sub>OH</sub> ) 1.000 ~ 150.000  | VOH = 2.4V      |       |        | 1.0     | mA    |
| Output Load                                     | 1.000 ~ 150.000                     |                 |       |        | 10      | TTL   |
| Start-Up Time (T <sub>S</sub> )                 | 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                     |                 | +4.75 | +5.0   | +5.25   | VDC   |

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

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

ECS - Series - Stability - Frequency Abbreviations

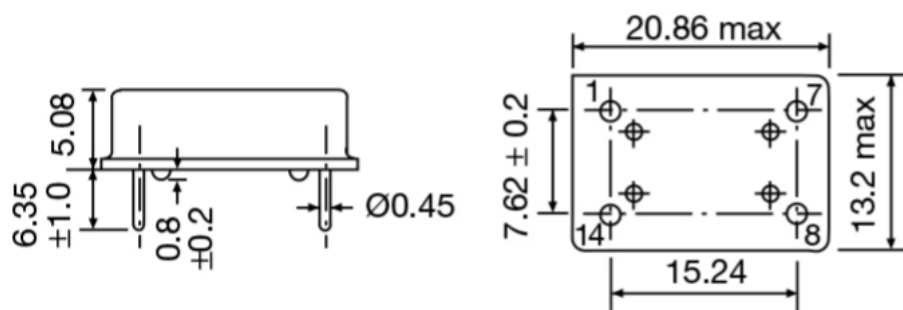
ECS

100  
+5V TTL  
Full Size

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

100 = 10.000 MHz

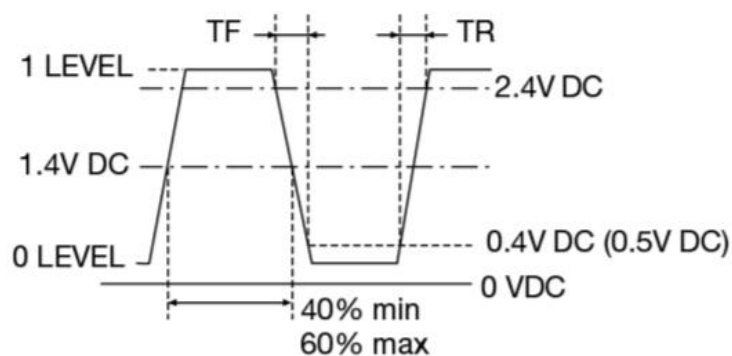
## Package Dimensions (mm)



**Figure 1)** Side and Bottom views

| Pin Connections |          |
|-----------------|----------|
| #1              | NC       |
| #7              | Case GND |
| #8              | Output   |
| #14             | +5 V DC  |

**Figure 3)** Pin Connections



**Figure 2)** Output Wave Form

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## ECS:

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