



- ▶ Low current consumption
- ▶ Built in divider circuit
- ▶ 8-pin DIP Package

# DISCONTINUED

## ECS-300C

### DUAL OUTPUT CMOS CLOCK OSCILLATOR

The ECS-300C utilizes a built in divider circuit to provide a second divided output. The CMOS based oscillator features low current consumption in a standard 8-pin DIP package.

#### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS            | CONDITIONS      | ECS-300C              |      |                       | UNITS |
|-----------------------|-----------------|-----------------------|------|-----------------------|-------|
|                       |                 | MIN                   | TYP  | MAX                   |       |
| Frequency Range       | Primary Output  | 12.000                |      | 24.000                | MHz   |
|                       | Divided Output  | 0.048875              |      | 12.000                | MHz   |
| Frequency Stability * | All Conditions  |                       |      | ± 100                 | ppm   |
| Operating Temperature |                 | -10                   |      | +70                   | °C    |
| Storage Temperature   |                 | -55                   |      | +125                  | °C    |
| Input Voltage         | V <sub>CC</sub> | +3.0                  | +5.0 | +5.5                  | VDC   |
| Input Current         |                 |                       |      | 20                    | mA    |
| Output Symmetry       | Primary Output  | 40/60                 |      | 60/40                 | %     |
|                       | Divided Output  | 48/52                 |      | 52/48                 | %     |
| Rise and Fall Times   |                 |                       |      | 15                    | ns    |
| Output Voltage        | V <sub>OL</sub> |                       |      | V <sub>CC</sub> x 0.1 | VDC   |
|                       | V <sub>OH</sub> | V <sub>CC</sub> x 0.9 |      |                       | VDC   |
| Output Load           | CMOS            |                       |      | 50                    | pF    |
| Startup time          |                 |                       |      | 1.5                   | ms    |

#### POSSIBLE FREQUENCY DIVISIONS BY PART NUMBER

| ECS PART NUMBER | f <sub>0</sub> CLOCK Pin 1 | f <sub>0</sub> /2 <sup>n</sup> (Divided Output) PIN 2 |           |           |           |         |           |           |            |
|-----------------|----------------------------|-------------------------------------------------------|-----------|-----------|-----------|---------|-----------|-----------|------------|
|                 |                            | 1/2 * 1                                               | 1/2 * 2   | 1/2 * 3   | 1/2 * 4   | 1/2 * 5 | 1/2 * 6   | 1/2 * 7   | 1/2 * 8    |
| ECS-300C-120    | 12.000 MHz                 | 6.000 MHz                                             | 3.000 MHz | 1.500 MHz | 750 KHz   | 375 KHz | 187.5 KHz | 93.75 KHz | 46.875 KHz |
| ECS-300C-160    | 16.000 MHz                 | 8.000 MHz                                             | 4.000 MHz | 2.000 MHz | 1.000 MHz | 500 KHz | 250 KHz   | 125 KHz   | 62.5 KHz   |
| ECS-300C-240    | 24.000 MHz                 | 12.000 MHz                                            | 6.000 MHz | 3.000 MHz | 1.500 MHz | 750 KHz | 375 KHz   | 187.5 KHz | 93.75 KHz  |

#### DIMENSIONS (mm)

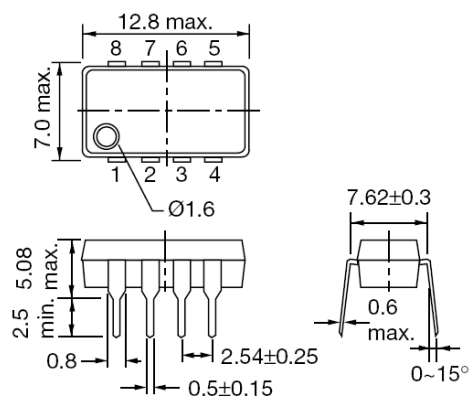


Figure 1) Top, Side and End views

| Pin Connections |                       |
|-----------------|-----------------------|
| #1              | Output                |
| #2              | Divided Output        |
| #3              | Standby               |
| #4              | Ground                |
| #5              | A (Divider selection) |
| #6              | B (Divider selection) |
| #7              | C (Divider selection) |
| #8              | V <sub>CC</sub>       |

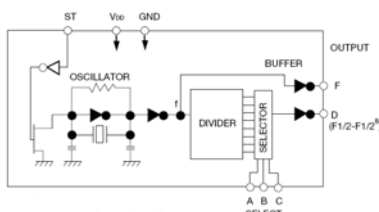


Figure 2) Block Diagram

| Input             |   |   |    | Output                |                              |
|-------------------|---|---|----|-----------------------|------------------------------|
| Divider Selection |   |   | ST | Pin 1(Primary Output) | Pin 2(Divided Output)        |
| C                 | B | A |    |                       |                              |
| L                 | L | L | H  | f <sub>0</sub> clock  | f <sub>0</sub> 1/2 * 1 clock |
| L                 | L | H | H  | f <sub>0</sub> clock  | f <sub>0</sub> 1/2 * 2 clock |
| L                 | H | L | H  | f <sub>0</sub> clock  | f <sub>0</sub> 1/2 * 3 clock |
| L                 | H | H | H  | f <sub>0</sub> clock  | f <sub>0</sub> 1/2 * 4 clock |
| H                 | L | L | H  | f <sub>0</sub> clock  | f <sub>0</sub> 1/2 * 5 clock |
| H                 | L | H | H  | f <sub>0</sub> clock  | f <sub>0</sub> 1/2 * 6 clock |
| H                 | H | L | H  | f <sub>0</sub> clock  | f <sub>0</sub> 1/2 * 7 clock |
| H                 | H | H | H  | f <sub>0</sub> clock  | f <sub>0</sub> 1/2 * 8 clock |
| X                 | X | X | L  | L                     | L                            |

#### STANDARD FREQUENCIES

12.000 MHz, 12.288 MHz, 12.800 MHz, 14.31818 MHz, 14.7456 MHz, 15.9744 MHz, 16.000 MHz, 16.384 MHz, 17.734476 MHz, 18.432 MHz, 19.6608 MHz, 20.000 MHz, and 24.000 MHz

#### PART NUMBERING GUIDE: Example ECS-300C-120

ECS - Series - Frequency Abbreviation

300C      120 = 12.000 MHz

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