

# EC36 Series



ECLIPTEK<sup>®</sup>  
CORPORATION

- RoHS Compliant (Pb-Free)
- LVCMOS output
- 3.3V Supply Voltage
- Ceramic SMD package
- Stability to  $\pm 20$ ppm
- Standby Function
- Available on Tape and Reel



## ELECTRICAL SPECIFICATIONS

|  |  |  |
|--|--|--|
| <b>Frequency Range (<math>F_0</math>)</b>              |  | 1.544MHz to 100.000MHz   |
| <b>Operating Temperature Range (OTR)</b>               |  | -10°C to 70°C<br>-40°C to 85°C                                 |
| <b>Storage Temperature Range (STR)</b>                 |  | -55°C to 125°C   |
| <b>Supply Voltage (<math>V_{DD}</math>)</b>            |  | 3.3V <sub>DC</sub> $\pm 10\%$                                  |
| <b>Input Current (<math>I_{DD}</math>)</b>             | 1.544MHz to 9.999MHz   | 8mA Maximum  |
|  | 10.000MHz to 34.999MHz   | 10mA Maximum   |
|  | 35.000MHz to 49.999MHz   | 25mA Maximum   |
|  | 50.000MHz to 70.000MHz   | 35mA Maximum   |
|  | 70.000001MHz to 100MHz   | 40mA Maximum   |
| <b>Frequency Tolerance/Stability</b>                   | Inclusive of all conditions: Calibration Tolerance at 25°C,<br>Frequency Stability over the Operating Temperature Range,<br>Supply Voltage Change, Output Load Change, First Year<br>Aging at 25°C, Shock, and Vibration | $\pm 100$ ppm, $\pm 50$ ppm, 25ppm, or<br>$\pm 20$ ppm Maximum |
| <b>Output Voltage Logic High (<math>V_{OH}</math>)</b> |  | 90% of $V_{DD}$ Minimum ( $I_{OH} = -4$ mA)                    |
| <b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>  |  | 10% of $V_{DD}$ Maximum ( $I_{OL} = +4$ mA)                    |
| <b>Rise Time / Fall Time (<math>T_R/T_F</math>)</b>    | 20% to 80% of Waveform from 1.544MHz to 39.999MHz  | 6 nSeconds Maximum   |
|  | 20% to 80% of Waveform from 40.000MHz to 79.999MHz   | 4 nSeconds Maximum   |
|  | 20% to 80% of Waveform from 80.000MHz to 100.000MHz  | 3 nSeconds Maximum   |
| <b>Duty Cycle (SYM)</b>                                | at 50% of Waveform   | 50 $\pm 10$ (%) (Standard)                                     |
|  | at 50% of Waveform   | 50 $\pm 5$ (%) (Optional)                                      |
| <b>Load Drive Capability (<math>C_{LOAD}</math>)</b>   |  | 15pF Maximum   |
| <b>Tri-State Input Voltage</b>                         | No Connection  | Enables Output   |
|  | $V_{IH}$ : 90% of $V_{DD}$ Minimum   | Enables Output   |
|  | $V_{IL}$ : 10% of $V_{DD}$ Maximum   | Disables Output: High Impedance                                |
| <b>Standby Current</b>                                 | Disabled Output: High Impedance  | 10 $\mu$ A Maximum   |
| <b>Start Up Time (<math>T_S</math>)</b>                |  | 10mSeconds Maximum   |
| <b>RMS Phase Jitter</b>                                | 12kHz to 20MHz offset frequency  | 1pSeconds Maximum  |

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
OSCILLATOR

SERIES  
EC36

PACKAGE  
CERAMIC

VOLTAGE  
3.3V

CLASS  
OS91

## PART NUMBERING GUIDE

### EC36 00 ET TS - 30.000M TR

#### FREQUENCY TOLERANCE / STABILITY

00=±100ppm Maximum (Standard)  
 45=±50ppm Maximum  
 25=±25ppm Maximum  
 20=±20ppm Maximum

#### OPERATING TEMPERATURE RANGE

Blank=-10°C to 70°C (Standard)  
 ET=-40°C to 85°C

#### PACKAGING OPTIONS

Blank=Bulk (Standard)  
 TR=Tape and Reel

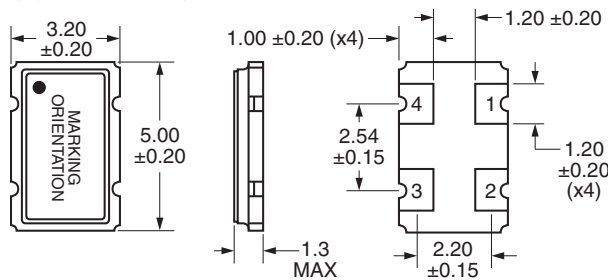
#### FREQUENCY

#### DUTY CYCLE

Blank=50 ±10(%) (Standard)  
 T=50 ±5(%)

#### MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS

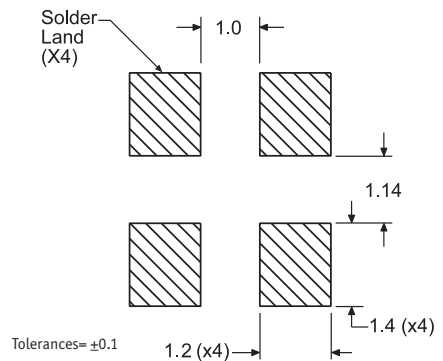


Note: Pin 1 Chamfer not shown.

Pin 1: Tri-State  
 Pin 2: Case Ground  
 Pin 3: Output  
 Pin 4: Supply Voltage

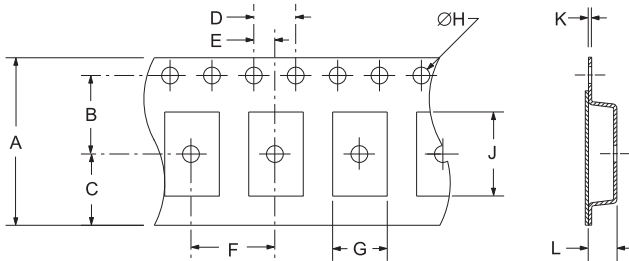
#### SUGGESTED SOLDER PAD LAYOUT

ALL DIMENSIONS IN MILLIMETERS

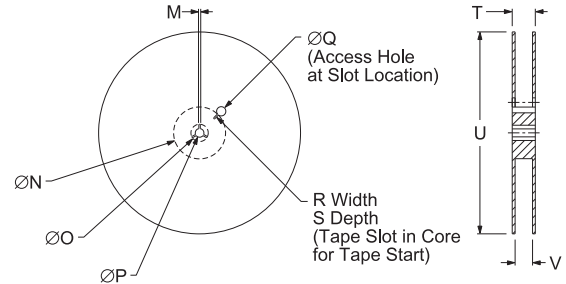


#### TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



| TAPE    | A        | B            | C        | D         | E       |
|---------|----------|--------------|----------|-----------|---------|
|         | 16.0±0.3 | 7.5±0.1      | 6.75±0.1 | 4.0±0.1   | 2.0±0.1 |
| F       | G        | H            | J        | K         | L       |
| 8.0±0.1 | B0*      | 1.5 +0.1-0.0 | A0*      | 0.30 ±0.1 | K0*     |



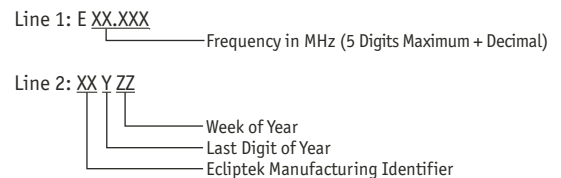
| REEL    | M       | N        | O        | P        | Q        |
|---------|---------|----------|----------|----------|----------|
|         | 1.5 MIN | 50 MIN   | 20.2 MIN | 13.0±0.2 | 40 MIN   |
| R       | S       | T        | U        | V        | QTY/REEL |
| 2.5 MIN | 10 MIN  | 18.4 MAX | 180 MAX  | 12.4+2-0 | 1,000    |

\*Compliant to EIA 481A

#### ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

| Characteristic               | Specification                                 |
|------------------------------|---|
| ESD Susceptibility           | MIL-STD-883, Method 3015, Class 1, HBM: 1500V |
| Fine Leak Test               | MIL-STD-883, Method 1014, Condition A         |
| Flammability                 | UL94-V0                                       |
| Gross Leak Test              | MIL-STD-883, Method 1014, Condition C         |
| Mechanical Shock             | MIL-STD-883, Method 2002, Condition B         |
| Moisture Resistance          | MIL-STD-883, Method 1004                      |
| Moisture Sensitivity         | J-STD-020, MSL 1                              |
| Resistance to Soldering Heat | MIL-STD-202, Method 210, Condition K          |
| Resistance to Solvents       | MIL-STD-202, Method 215                       |
| Solderability                | MIL-STD-883, Method 2003                      |
| Temperature Cycling          | MIL-STD-883, Method 1010, Condition B         |
| Vibration                    | MIL-STD-883, Method 2007, Condition A         |

#### MARKING SPECIFICATIONS



| MANUFACTURER   | CATEGORY   | SERIES | PACKAGE | VOLTAGE | CLASS |
|----------------|------------|--------|---------|---------|-------|
| ECLIPTEK CORP. | OSCILLATOR | EC36   | CERAMIC | 3.3V    | OS91  |