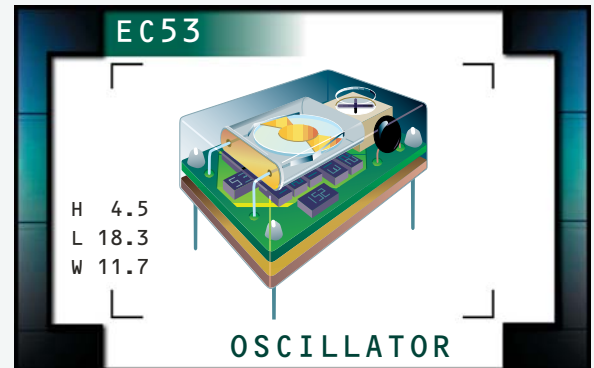


# EC53 Series

- Temperature Compensated Crystal Oscillator (TCXO)
- HCMOS Output
- 3.3V Supply Voltage
- 14 pin DIP package
- Stability to 1.5ppm
- Internal or external voltage control option available



## NOTES

### ELECTRICAL SPECIFICATIONS

|                                                        |                                 |                                                                             |
|--------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------------|
| <b>Frequency Range</b>                                 |                                 | 9.600MHz to 35.000MHz                                                       |
| <b>Operating Temperature Range</b>                     |                                 | See Table 1                                                                 |
| <b>Storage Temperature Range</b>                       |                                 | -40°C to 85°C                                                               |
| <b>Supply Voltage (<math>V_{DD}</math>)</b>            |                                 | 3.3V <sub>DC</sub> ±5%                                                      |
| <b>Load Drive Capability</b>                           |                                 | 15pF HCMOS Load                                                             |
| <b>Internal Trim (Top of Can)</b>                      |                                 | ±3ppm Minimum                                                               |
| <b>Control Voltage (External)</b>                      |                                 | 1.65V <sub>DC</sub> ±1.35V <sub>DC</sub> , Positive Transfer Characteristic |
| <b>Frequency Deviation</b>                             |                                 | ±5ppm Minimum Over Control Voltage                                          |
| <b>Input Current</b>                                   | ≤20.000MHz                      | 10mA Maximum                                                                |
|                                                        | >20.000MHz                      | 20mA Maximum                                                                |
| <b>Aging (at 25°C)</b>                                 |                                 | ±1ppm / year Maximum                                                        |
| <b>Frequency Stability</b>                             | vs. Operating Temperature Range | See Table 1                                                                 |
|                                                        | vs. Input Voltage (±5%)         | ±0.3ppm Maximum                                                             |
|                                                        | vs. Load (±2pF)                 | ±0.3ppm Maximum                                                             |
| <b>Output Voltage Logic High (<math>V_{OH}</math>)</b> | w/HCMOS Load                    | 2.7V <sub>DC</sub> Minimum                                                  |
| <b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>  | w/HCMOS Load                    | 0.5V <sub>DC</sub> Maximum                                                  |
| <b>Duty Cycle</b>                                      | at 50% of waveform              | 50 ±10(%)                                                                   |
| <b>Rise Time / Fall Time</b>                           | 20% to 80% of waveform          | 10 nSeconds Maximum                                                         |

| MANUFACTURER   | CATEGORY   | SERIES | PACKAGE    | VOLTAGE | CLASS | REV. DATE |
|----------------|------------|--------|------------|---------|-------|-----------|
| ECLIPTEK CORP. | OSCILLATOR | EC53   | 14 pin DIP | 3.3V    | OS62  | 03/02     |

## PART NUMBERING GUIDE

### EC53 25 E V - 12.800M

**FREQUENCY STABILITY**  
Two Digit Code Per Table 1

**OPERATING TEMP. RANGE**  
One Letter Code Per Table 1

**FREQUENCY**

**EXTERNAL TRIM**  
Blank=None (No Connection on Pin 1,  
Pin 1 Not Present)  
V=External Control Voltage

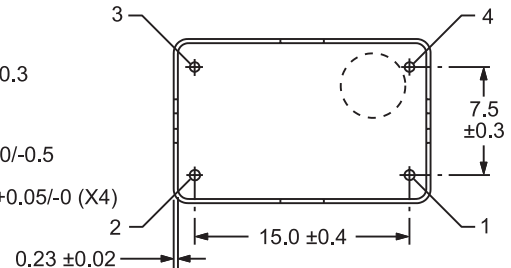
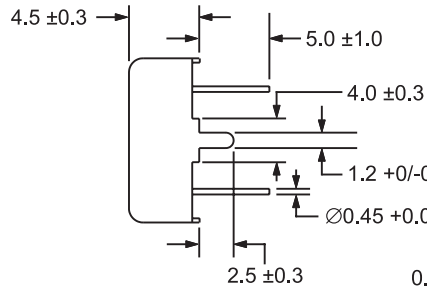
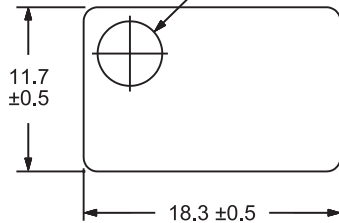
## NOTES

**TABLE 1: PART NUMBERING CODES**

| Operating Temperature Range | Code | Frequency Stability<br>X Denotes Availability from 9.6MHz to 25MHz<br>Y Denotes Availability for Frequencies above 25MHz |         |         |         |         |         |
|-----------------------------|------|--------------------------------------------------------------------------------------------------------------------------|---------|---------|---------|---------|---------|
|                             |      | ±1.5ppm                                                                                                                  | ±2.0ppm | ±2.5ppm | ±3.0ppm | ±3.5ppm | ±5.0ppm |
|                             |      | 15                                                                                                                       | 20      | 25      | 30      | 35      | 50      |
| 0°C to +50°C                | A    | X, Y                                                                                                                     | X, Y    | X, Y    | X, Y    | X, Y    | X, Y    |
| -10°C to +60°C              | B    | X, Y                                                                                                                     | X, Y    | X, Y    | X, Y    | X, Y    | X, Y    |
| -20°C to +70°C              | C    | X                                                                                                                        | X, Y    | X, Y    | X, Y    | X, Y    | X, Y    |
| -30°C to +60°C              | D    |                                                                                                                          | X       | X, Y    | X, Y    | X, Y    | X, Y    |
| -30°C to +75°C              | E    |                                                                                                                          | X       | X       | X, Y    | X, Y    | X, Y    |
| -35°C to +80°C              | F    |                                                                                                                          |         | X       | X       | X, Y    | X, Y    |
| -40°C to +85°C              | G    |                                                                                                                          |         |         | X       | X       | X, Y    |

## MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS

Internal Trim Access  
Hole  $\varnothing 3.5 \pm 0.5$



Pin 1: Voltage Control or No Connection  
(Pin 1 Not present when Voltage Control is specified as "No Connect")  
Pin 2: Case Ground  
Pin 3: Output  
Pin 4: Supply Voltage

## MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: EC53 15 A V

External Trim  
Blank=No connection  
V=External Voltage Control

Operating Temperature Code (°C)  
A= 0 to 50, B= -10 to 60, C= -20 to 70,  
D= -30 to 60, E= -30 to 75, F= -35 to 80,  
G= -40 to 85

Frequency Stability Code (±ppm)  
15=1.5, 20=2.0, 25=2.5, 30=3.0, 35=3.5, 50=5.0

Series Designator

Line 3: XX.XXX M

Frequency in MHz (5 Digits Maximum + Decimal)

Line 4: XX Y ZZ

Week of Year  
Last Digit of Year  
Eclipse Manufacturing Identifier

## ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

### Parameter Specification

|                    |                                                                                                                                                                          |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seal Integrity     | Bubble test in Perfluorocarbon at $+125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 60 seconds minimum (internal crystal).                                                |
| Solderability      | Sn63 Solder dip at $+230^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 5 seconds/95% coverage.                                                                              |
| Marking Permanency | 10 Strokes with brush after 1 minute soak in solvent, 3 times.                                                                                                           |
| Shock              | Random drop on hard wooden plate 3 times from a height of 20cm.                                                                                                          |
| Vibration          | Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours. |

| MANUFACTURER   | CATEGORY   | SERIES | PACKAGE    | VOLTAGE | CLASS | REV. DATE |
|----------------|------------|--------|------------|---------|-------|-----------|
| ECLIPTEK CORP. | OSCILLATOR | EC53   | 14 pin DIP | 3.3V    | OS62  | 03/02     |