

## Product EOL Announcement

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The Product EOL Announcement signifies that a product series has entered the final phase of the Ecliptek Product Life Cycle, and serves as advance notice of product termination per the Ecliptek End of Life (EOL) policy.

Ecliptek Corporation announces End of Life initiation for the following product series with the intent of discontinuing its availability.

| EOL Series | Description                      |
|------------|----------------------------------|
| EB51F3     | 5.0Vdc 14-Pin DIP HCMOS/TTL TCXO |

### EOL Timeline

The last date Ecliptek will accept orders (Stage 2) and the last date orders may be scheduled for shipment (Stage 3) are listed in the table below.

| Stage 1<br>EOL Announce Date | Stage 2<br>Last Date to Order | Stage 3<br>Last Date to Ship |
|------------------------------|-------------------------------|------------------------------|
| 10-May-2011                  | 28-February-2012              | 31-May-2012                  |

### Alternative Products

In order to fulfill your requirements beyond this product's discontinuation, we invite you to evaluate alternative Ecliptek products. Because this series does not have a recommended alternative Ecliptek product series, please contact one of our Global Customer Support Executives to assist you with finding the best Ecliptek product for your application.

### Automated EOL Notification

Ecliptek offers automated notification of Product EOL Announcements. Place part numbers for which you'd like to receive EOL Notifications into your personalized [Parts List](#) on our website and we'll email you when EOL is announced.

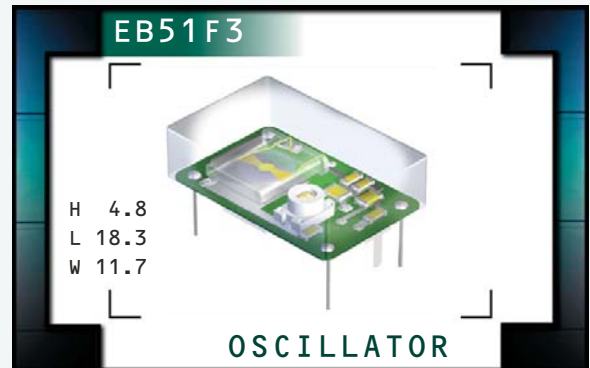
Please do not hesitate to contact us if you have any questions or need further assistance.

Ecliptek Global Customer Support Team  
(800) 433-1280 x300  
[customersupport@ecliptek.com](mailto:customersupport@ecliptek.com)

All product warranties for discontinued products will be honored in full according to Ecliptek [Terms and Conditions of Sale](#).

# EB51F3 Series

- Temperature Compensated Crystal Oscillators (TCXO)
- HCMOS/TTL Output
- +5.0V Supply Voltage
- Internal Mechanical Trim Function
- External Voltage Control Option
- 14 pin DIP Metal Package



## NOTES

### ELECTRICAL SPECIFICATIONS

|   |  |   |
|---|--|---|
| <b>Frequency Range</b>                            |  | 1.544MHz to 44.736MHz   |
| <b>Operating Temperature Range</b>                |  | See Table 1   |
| <b>Storage Temperature Range</b>                  |  | -40°C to 85°C   |
| <b>Supply Voltage (V<sub>DD</sub>)</b>            |  | 5.0V <sub>DC</sub> ±5%  |
| <b>Input Current</b>                              |  | 30mA Maximum  |
| <b>Frequency Stability</b>                        | vs. Operating Temperature Range  | See Table 1   |
|   | vs. Input Voltage (V <sub>DD</sub> ±5%)  | ±0.3ppm Maximum   |
|   | vs. Load (±2pF)  | ±0.2ppm Maximum   |
| <b>Aging (at 25°C)</b>                            |  | ±1ppm / year Maximum  |
| <b>Output Voltage Logic High (V<sub>OH</sub>)</b> | w/TTL Load   | 2.4V <sub>DC</sub> Minimum  |
|   | w/CMOS Load  | V <sub>DD</sub> - 0.5V <sub>DC</sub> Minimum                              |
| <b>Output Voltage Logic Low (V<sub>OL</sub>)</b>  | w/TTL Load   | 0.4V <sub>DC</sub> Maximum  |
|   | w/CMOS Load  | 0.5V <sub>DC</sub> Maximum  |
| <b>Rise Time / Fall Time</b>                      | 0.4V <sub>DC</sub> to 2.4V <sub>DC</sub> w/TTL Load or<br>20% to 80% of Waveform w/CMOS Load               | 10 nSeconds Maximum   |
| <b>Duty Cycle</b>                                 | at 1.4V <sub>DC</sub> w/TTL Load or<br>at 50% of Waveform w/CMOS Load                                      | 50 ±10(%)   |
| <b>Load Drive Capability</b>                      |  | 10TTL Load 15pF CMOS Load Maximum   |
| <b>Internal Trim (Top of Can)</b>                 |  | ±3ppm Minimum   |
| <b>Control Voltage (External)</b>                 |  | 2.5V <sub>DC</sub> ±2.0V <sub>DC</sub> , Positive Transfer Characteristic |
| <b>Frequency Deviation</b>                        | Referenced to F <sub>0</sub> at V <sub>C</sub> = 2.5V <sub>DC</sub> ; V <sub>DD</sub> = 5.0V <sub>DC</sub> | ±7ppm Minimum, ±20ppm Maximum   |
| <b>Input Impedance</b>                            |  | 10kOhms Typical   |
| <b>Modulation Bandwidth</b>                       | Measured at -3dB, V <sub>C</sub> = 2.5V <sub>DC</sub>  | 10kHz Minimum   |
| <b>Typical Phase Noise</b>                        | at 10Hz Offset   | -70dBc/Hz   |
|   | at 100Hz Offset  | -100dBc/Hz  |
|   | at 1kHz Offset   | -130dBc/Hz  |
|   | at 10kHz Offset  | -140dBc/Hz  |
|   | at 100kHz Offset   | -145dBc/Hz  |

|                                |                        |                  |                       |                 |               |                    |
|--------------------------------|------------------------|------------------|-----------------------|-----------------|---------------|--------------------|
| MANUFACTURER<br>ECLIPTEK CORP. | CATEGORY<br>OSCILLATOR | SERIES<br>EB51F3 | PACKAGE<br>14-PIN DIP | VOLTAGE<br>5.0V | CLASS<br>OS1V | REV. DATE<br>10/06 |
|--------------------------------|------------------------|------------------|-----------------------|-----------------|---------------|--------------------|

## PART NUMBERING GUIDE

### EB51F3 A 15 V - 12.800M

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

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

**FREQUENCY**

**EXTERNAL TRIM**  
N=None (No Connection on Pin 1)  
V=Voltage Control on Pin 1

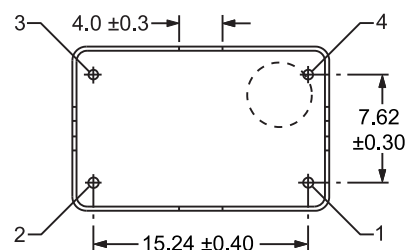
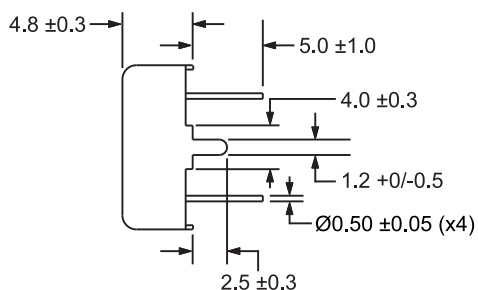
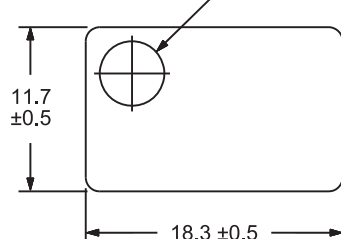
**TABLE 1: PART NUMBERING CODES**

| Operating Temperature Range | Frequency Stability |  |         |         |         |
|-----------------------------|---------------------|--|---------|---------|---------|
|                             | Code                | X = Available from 1.544MHz to 32.768MHz<br>Y = Available at any Frequency |         |         |         |
|                             |                     | ±1.5ppm  | ±2.0ppm | ±3.0ppm | ±5.0ppm |
| 0°C to +50°C                | A                   | Y  | Y       | Y       | Y       |
| 0°C to 70°C                 | B                   | X  | Y       | Y       | Y       |
| -20°C to +70°C              | C                   | X  | Y       | Y       | Y       |
| -30°C to +75°C              | D                   |  | X       | Y       | Y       |
| -40°C to +85°C              | E                   |  |         | X       | Y       |

## NOTES

### MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS

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



Pin 1: Voltage Control or No Connect  
Pin 2: Case Ground  
Pin 3: Output  
Pin 4: Supply Voltage

### ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

| Characteristic               | Specification   |
|------------------------------|---|
| Fine Leak Test               | MIL-STD-883, Method 1014, Condition A (Internal Crystal Only) |
| Gross Leak Test              | MIL-STD-883, Method 1014, Condition C (Internal Crystal Only) |
| Lead Integrity               | MIL-STD-883, Method 2004                                      |
| Mechanical Shock             | MIL-STD-202, Method 213 Condition C                           |
| Resistance to Soldering Heat | MIL-STD-202, Method 210                                       |
| Resistance to Solvents       | MIL-STD-202, Method 215                                       |
| Solderability                | MIL-STD-883, Method 2003                                      |
| Temperature Cycling          | MIL-STD-883, Method 1010                                      |
| Vibration                    | MIL-STD-883, Method 2007 Condition A                          |

### MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: XX.XXX M  
M=MHz  
Frequency (5 Digits Maximum + Decimal)

Line 3: XX Y ZZ  
Week of Year  
Last Digit of Year  
Ecliptek Manufacturing Identifier

Note: Pin 1 shall be designated with a dot

| MANUFACTURER   | CATEGORY   | SERIES | PACKAGE    | VOLTAGE | CLASS | REV. DATE |
|----------------|------------|--------|------------|---------|-------|-----------|
| ECLIPTEK CORP. | OSCILLATOR | EB51F3 | 14 pin DIP | 5.0V    | OS1V  | 10/06     |