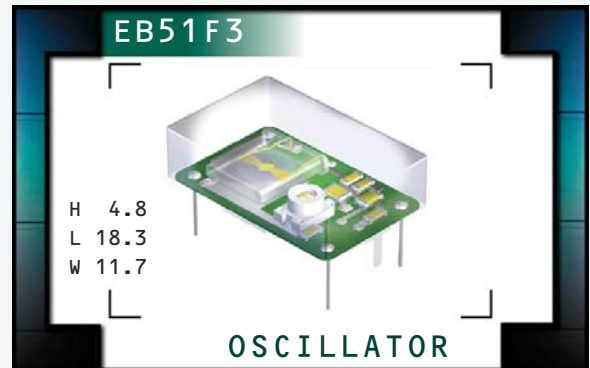


EB51F3 Series

- Temperature Compensated Crystal Oscillator (TCXO)
- TTL/HCMOS Output
- 5.0V Supply Voltage
- Stability to ± 1.5 ppm
- External voltage control option available



NOTES

ELECTRICAL SPECIFICATIONS

| | | |
|--|---|---|
| Frequency Range | | 1.544MHz to 44.736MHz |
| Operating Temperature Range | | See Table 1 |
| Storage Temperature Range | | -40°C to 85°C |
| Supply Voltage (V_{DD}) | | 5.0V _{DC} $\pm 5\%$ |
| Input Current | | 30mA Maximum |
| Frequency Stability | vs. Operating Temperature Range | See Table 1 |
| | vs. Input Voltage ($V_{DD} \pm 5\%$) | ± 0.3 ppm Maximum |
| | vs. Load (± 2 pF) | ± 0.2 ppm Maximum |
| Aging (at 25°C) | | ± 1 ppm / year Maximum |
| Output Voltage Logic High (V_{OH}) | w/TTL Load | 2.4V _{DC} Minimum |
| | w/HCMOS Load | $V_{DD} - 0.5V_{DC}$ Minimum |
| Output Voltage Logic Low (V_{OL}) | w/TTL Load | 0.4V _{DC} Maximum |
| | w/HCMOS Load | 0.5V _{DC} Maximum |
| Rise Time / Fall Time | 0.4V _{DC} to 2.4V _{DC} w/TTL Load or 20% to 80% of Waveform w/HCMOS Load | 10 nSeconds Maximum |
| Duty Cycle | at 1.4V _{DC} w/TTL Load or at 50% of Waveform w/HCMOS Load | 50 ± 10 (%) |
| Load Drive Capability | | 10TTL Load 15pF HCMOS Load Maximum |
| Internal Trim (Top of Can) | | ± 3 ppm Minimum |
| Control Voltage (External) | | 2.5V _{DC} $\pm 2.0V_{DC}$, Positive Transfer Characteristic |
| Frequency Deviation | Referenced to F_0 at $V_C = 2.5V_{DC}$; $V_{DD} = 5.0V_{DC}$ | ± 7 ppm Minimum, ± 20 ppm Maximum |
| Input Impedance | | 10kOhms Typical |
| Modulation Bandwidth | Measured at -3dB, $V_C = 2.5V_{DC}$ | 10kHz Minimum |
| Typical Phase Noise | 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 ECLIPTEK CORP. | CATEGORY OSCILLATOR | SERIES EB51F3 | PACKAGE 14-PIN DIP | VOLTAGE 5.0V | CLASS OS1V | REV. DATE 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

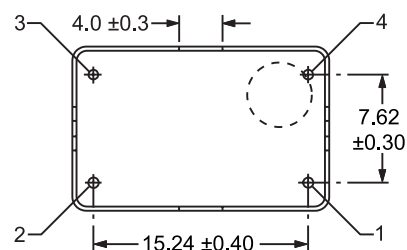
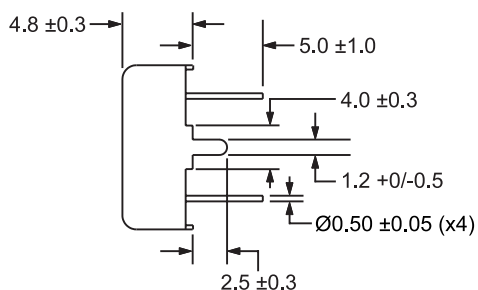
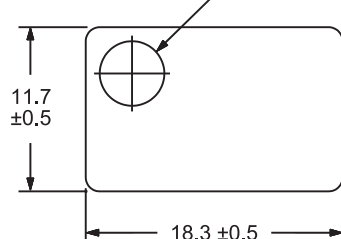
TABLE 1: PART NUMBERING CODES

| Operating Temperature Range | Frequency Stability | | | | |
|-----------------------------|---------------------|--|---------|---------|---------|
| | Code | X = Available from 1.544MHz to 32.768MHz 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 |