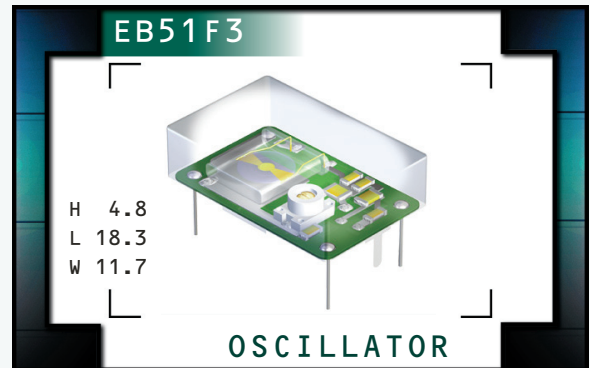


# EB51F3 Series

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



## 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/HCMOS 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/HCMOS 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 20% to 80% of Waveform w/HCMOS Load	6 nSeconds Maximum
<b>Duty Cycle</b>	at 1.4V <sub>DC</sub> w/TTL Load or at 50% of Waveform w/HCMOS Load	50 ±5(%)
<b>Load Drive Capability</b>		10TTL Load 15pF HCMOS 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 ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EB51F3	PACKAGE 14-PIN DIP	VOLTAGE 5.0V	CLASS OS1V	REV. DATE 01/04
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## 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

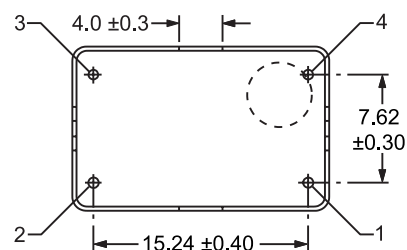
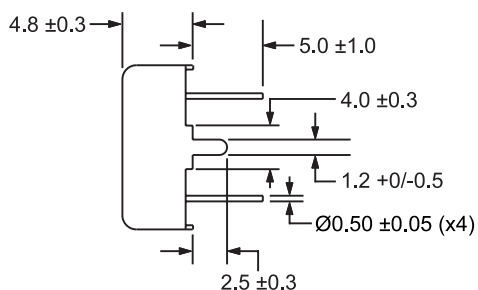
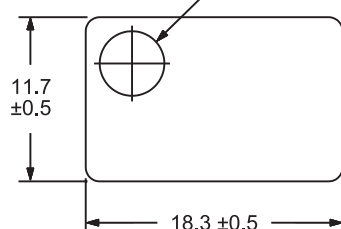
**TABLE 1: PART NUMBERING CODES**

Operating Temperature Range	Code	Frequency Stability			
		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

Fine Leak Test  
Gross Leak Test  
Mechanical Shock  
Vibration  
Lead Integrity  
Solderability  
Temperature Cycling  
Resistance to Soldering Heat  
Resistance to Solvents

Specification

MIL-STD-883, Method 1014, Condition A  
MIL-STD-883, Method 1014, Condition C  
MIL-STD-202, Method 213, Condition C  
MIL-STD-883, Method 2007, Condition A  
MIL-STD-883, Method 2004  
MIL-STD-883, Method 2002  
MIL-STD-883, Method 1010  
MIL-STD-883, Method 210  
MIL-STD-883, Method 215

### 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 ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EB51F3	PACKAGE 14 pin DIP	VOLTAGE 5.0V	CLASS OS1N	REV. DATE 01/04
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