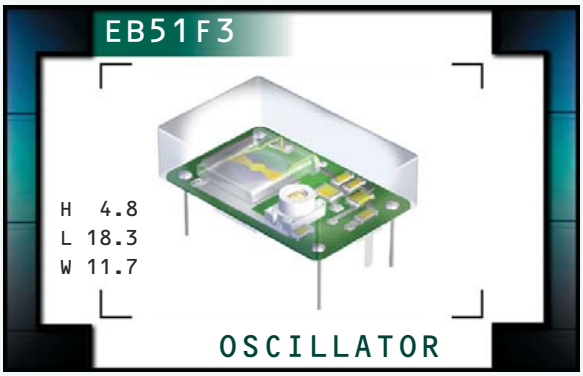
EB51F3 Series

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



NOTES

ELECTRICAL SPECIFICATIONS

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} ±5%
Input Current		30mA Maximum
Frequency Stability	vs. Operating Temperature Range	See Table 1
	vs. Input Voltage (V_{DD} ±5%)	±0.3ppm Maximum
	vs. Load (±2pF)	±0.2ppm Maximum
Aging (at 25°C)		±1ppm / 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	10 nSeconds Maximum
	20% to 80% of Waveform w/HCMOS Load	
Duty Cycle	at 1.4V_{DC} w/TTL Load or	50 ±10(%)
	at 50% of Waveform w/HCMOS Load	
Load Drive Capability		10TTL Load 15pF HCMOS Load Maximum
Internal Trim (Top of Can)		±3ppm Minimum
Control Voltage (External)		2.5V_{DC} ±2.0V_{DC}, Positive Transfer Characteristic
Frequency Deviation	Referenced to F_O at V_C = 2.5V_{DC}; V_{DD} = 5.0V_{DC}	±7ppm Minimum, ±20ppm 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	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EB51F3	14-PIN DIP	5.0V	OS1V	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

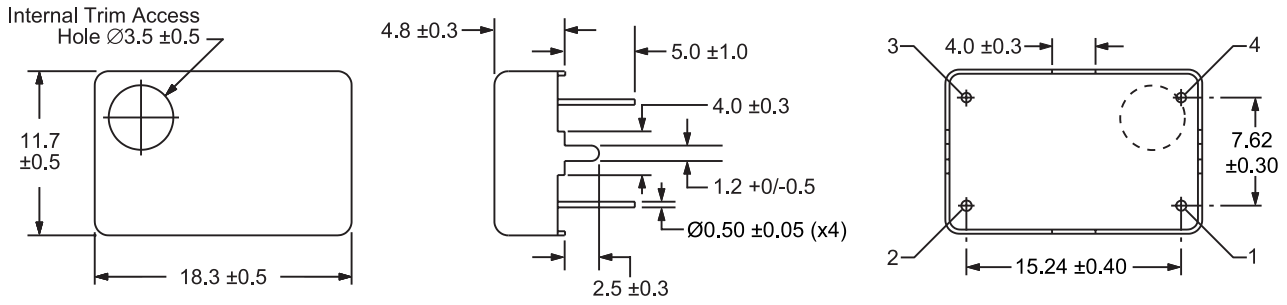
TABLE 1: PART NUMBERING CODES

Operating Temperature Range		Frequency Stability X = Available from 1.544MHz to 32.768MHz Y = Available at any Frequency			
		±1.5ppm	±2.0ppm	±3.0ppm	±5.0ppm
	Code	15	20	30	50
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



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