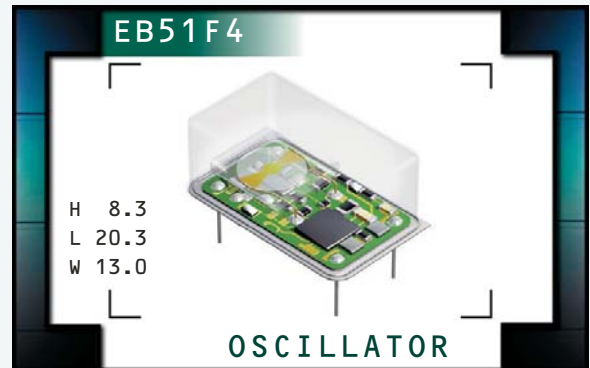


# EB51F4 Series

- Temperature Compensated Crystal Oscillator (TCXO)
- 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>		-55°C to 125°C
<b>Supply Voltage (V<sub>DD</sub>)</b>		5.0V <sub>DC</sub> ±5%
<b>Input Current</b>	Measured at Steady State at 25°C, at Nominal V <sub>DD</sub> , at Nominal V <sub>C</sub>	30mA Maximum
<b>Frequency Stability</b>	vs. Initial Frequency Tolerance vs. Operating Temperature Range vs. Input Voltage (V <sub>DD</sub> ±5%) vs. Load (±10%)	±2.5ppm (at Nominal V <sub>DD</sub> and V <sub>C</sub> , at 25°C) See Table 1 (at Nominal V <sub>DD</sub> and V <sub>C</sub> ) ±0.3ppm Maximum ±0.2ppm Maximum
<b>Aging (at 25°C)</b>		±1ppm / year Maximum
<b>Output Voltage Logic High (V<sub>OH</sub>)</b>		V <sub>DD</sub> - 0.5V <sub>DC</sub> Minimum
<b>Output Voltage Logic Low (V<sub>OL</sub>)</b>		0.5V <sub>DC</sub> Maximum
<b>Rise Time / Fall Time</b>	20% to 80% of Waveform	6 nSeconds Maximum
<b>Duty Cycle</b>	at 50% of Waveform	50 ±5(%)
<b>Load Drive Capability</b>		30pF HCMOS Load Maximum
<b>Control Voltage Range</b>		0.0V <sub>DC</sub> to V <sub>DD</sub>
<b>Control Voltage (External)</b>	Positive Transfer Characteristic	2.5V <sub>DC</sub> ±2.0V <sub>DC</sub>
<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>Linearity</b>		±10% Maximum
<b>Input Impedance</b>		10kOhms Typical
<b>Phase Noise (at 19.440MHz)</b>	Measured at 25°C, at Nominal V <sub>DD</sub> , at Nominal V <sub>C</sub>	
	at 10Hz Offset	-70dBc/Hz Typical
	at 100Hz Offset	-100dBc/Hz Typical
	at 1kHz Offset	-130dBc/Hz Typical
	at 10kHz Offset	-140dBc/Hz Typical
	at 100kHz Offset	-145dBc/Hz Typical

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EB51F4	PACKAGE 14-PIN DIP	VOLTAGE 5.0V	CLASS OS2W	REV. DATE 02/05
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## PART NUMBERING GUIDE

### EB51F4 D 15 A V - 12.800M - G

**INITIAL TOLERANCE**  
D=±2.5ppm Maximum

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

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

**AVAILABLE OPTIONS**

Blank=None (Standard)  
 CB=Cut Leads to 2.540 ±0.500 (0.100" ±0.020")  
 CC=Cut Leads to 3.175 ±0.500 (0.125" ±0.020")  
 CD=Cut Leads to 3.810 ±0.500 (0.150" ±0.020")  
 CE=Cut Leads to 4.445 ±0.500 (0.175" ±0.020")  
 G=Full Size Gull Wing

**FREQUENCY**

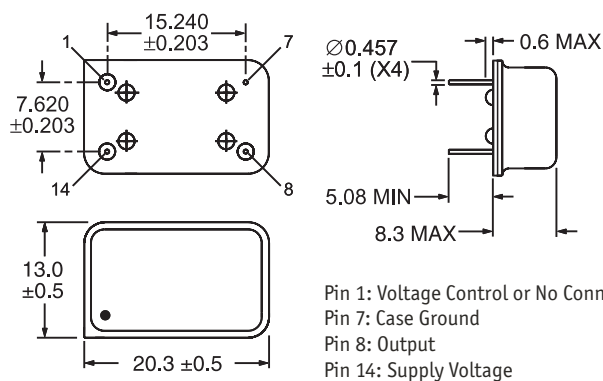
**EXTERNAL TRIM**

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

**TABLE 1: PART NUMBERING CODES**

Operating Temperature Range	Frequency Stability				
	Code	Frequency Stability			
		±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	X	Y	Y
-30°C to +75°C	D		X	Y	Y
-40°C to +85°C	E			X	Y

**MECHANICAL DIMENSIONS**  
ALL DIMENSIONS IN MILLIMETERS



**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

**ENVIRONMENTAL/MECHANICAL SPECIFICATIONS**

Characteristic	Specification
Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Mechanical Shock	MIL-STD-202, Method 213, Condition C
Vibration	MIL-STD-883, Method 2007, Condition A
Lead Integrity	MIL-STD-883, Method 2004
Solderability	MIL-STD-883, Method 2002
Temperature Cycling	MIL-STD-883, Method 1010
Resistance to Soldering Heat	MIL-STD-883, Method 210
Resistance to Solvents	MIL-STD-883, Method 215

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EB51F4	14 pin DIP	5.0V	OS2W	02/05