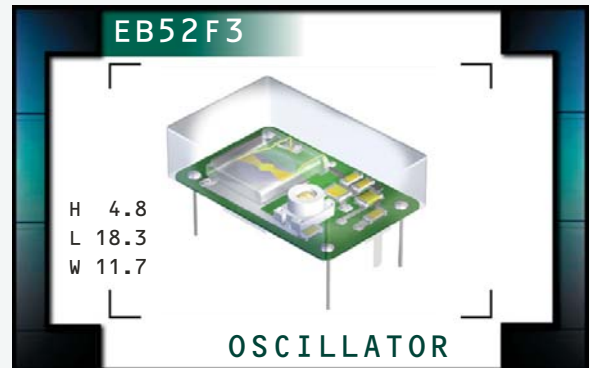


# EB52F3 Series

- Temperature Compensated Crystal Oscillator (TCXO)
- HCMOS Output
- 3.3V Supply Voltage
- Stability to  $\pm 1.5$ ppm
- 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 (<math>V_{DD}</math>)</b>		3.3V <sub>DC</sub> $\pm 5\%$
<b>Input Current</b>	1.544MHz to 20.000MHz	10mA Maximum
	20.001MHz to 44.736MHz	20mA Maximum
<b>Frequency Stability</b>	vs. Operating Temperature Range	See Table 1
	vs. Input Voltage ( $V_{DD} \pm 5\%$ )	$\pm 0.3$ ppm Maximum
	vs. Load ( $\pm 2$ pF)	$\pm 0.2$ ppm Maximum
<b>Aging (at 25°C)</b>		$\pm 1$ ppm / year Maximum
<b>Output Voltage Logic High (<math>V_{OH}</math>)</b>		90% of $V_{DD}$ Minimum
<b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>		10% of $V_{DD}$ Maximum
<b>Rise Time / Fall Time</b>	20% to 80% of Waveform	10 nSeconds Maximum
<b>Duty Cycle</b>	at 50% of Waveform	50 $\pm 10$ (%)
<b>Load Drive Capability</b>		15pF HCMOS Load Maximum
<b>Internal Trim (Top of Can)</b>		$\pm 3$ ppm Minimum
<b>Control Voltage (External)</b>		1.65V <sub>DC</sub> $\pm 1.35$ V <sub>DC</sub> ; Positive Transfer Characteristic
<b>Frequency Deviation</b>	Referenced to $F_0$ at $V_C = 1.65V_{DC}$ ; $V_{DD} = 3.3V_{DC}$	$\pm 7$ ppm Minimum, $\pm 20$ ppm Maximum
<b>Input Impedance</b>		10kOhms Typical
<b>Modulation Bandwidth</b>	Measured at -3dB, $V_C = 1.65V_{DC}$	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 EB52F3	PACKAGE 14-PIN DIP	VOLTAGE 3.3V	CLASS OS1W	REV. DATE 10/06
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## PART NUMBERING GUIDE

### EB52F3 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

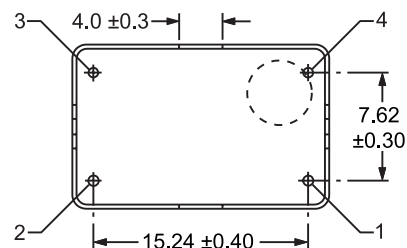
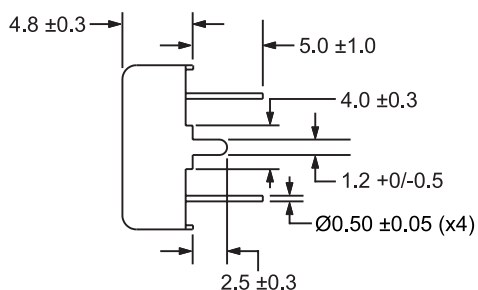
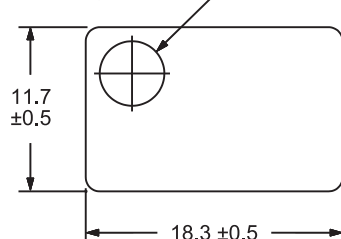
**TABLE 1: PART NUMBERING CODES**

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	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	EB52F3	14 pin DIP	3.3V	OS1W	10/06