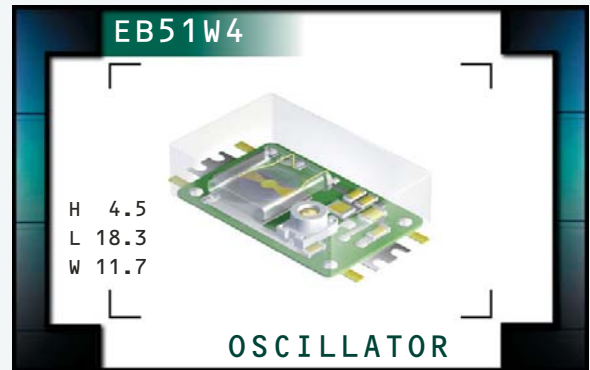


# EB51W4 Series

- Temperature Compensated Crystal Oscillator (TCXO)
- HCMOS/TTL Output
- 5.0V Supply Voltage
- SMD package
- Stability to 1.5ppm
- External voltage control option available
- Internal Mechanical Trim (Top of Can)



## NOTES

**TABLE 1: PART NUMBERING CODES**

Operating Temperature Range	Code	Frequency Stability			
		X = Available from 1.200MHz to 27.000MHz 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
-30°C to +70°C	D			Y	Y
-40°C to +85°C	E				Y

## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>		1.200MHz to 40.000MHz
<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>Load Drive Capability</b>		10TTL Load or 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>	at V <sub>C</sub> = 2.5V <sub>DC</sub> ±2.0V <sub>DC</sub> , V <sub>DD</sub> = 5.0V <sub>DC</sub>	±7ppm Minimum, ±20ppm Maximum
<b>Input Current</b>	≤ 27.000MHz	20mA Maximum
	> 27.000MHz	35mA Maximum
<b>Aging (at 25°C)</b>		±1ppm / year Maximum
<b>Frequency Stability</b>	vs. Operating Temperature Range	See Table 1
	vs. Input Voltage (±5%)	±0.3ppm Maximum
	vs. Load (±2pF)	±0.2ppm 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; 20% to 80% of Waveform w/HCMOS Load	10 nSeconds Maximum
<b>Duty Cycle</b>	at 1.4V <sub>DC</sub> w/TTL Load; at 50% of Waveform w/HCMOS Load	50 ±10(%)
<b>Typical Phase Noise</b>	F <sub>o</sub> = 19.200MHz, at 25°C, at Nominal V <sub>DC</sub> and V <sub>C</sub>	
	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
<b>Modulation Bandwidth</b>	at -3dB with V <sub>C</sub> = 2.5V <sub>DC</sub>	10kHz Minimum
<b>Input Impedance</b>		10kOhms Typical

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EB51W4	Metal SMD	5.0V	OS1G	01/05

## PART NUMBERING GUIDE

### EB51W4 E 25 V - 12.800M

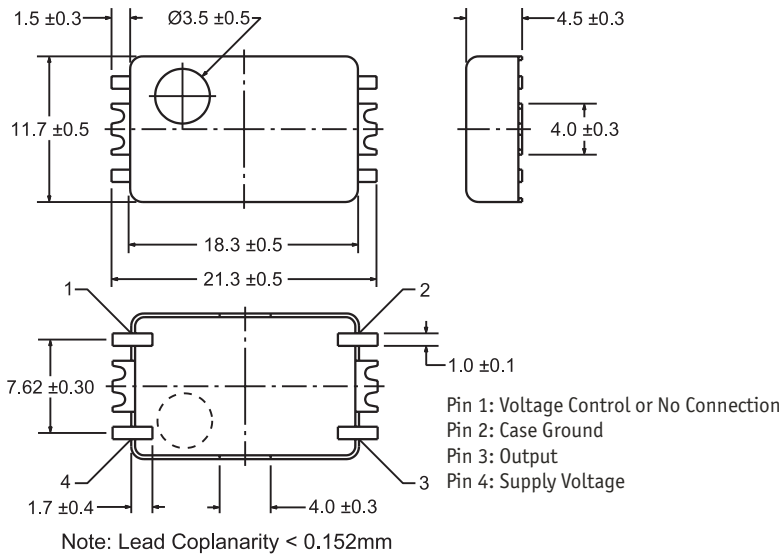
**OPERATING TEMP. RANGE**  
One Letter Code Per Table 1

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

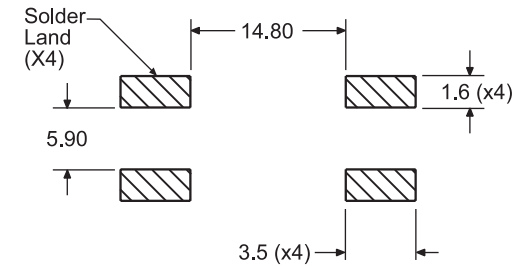
**FREQUENCY**

**EXTERNAL TRIM**  
N=None (No Connection on Pin 1)  
V=External Control Voltage

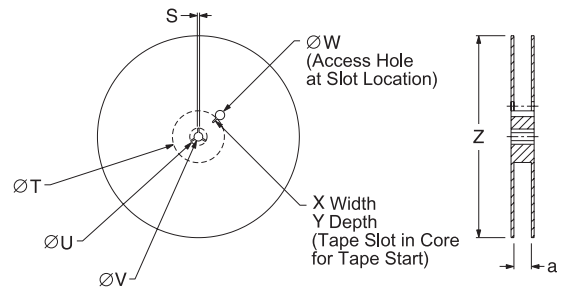
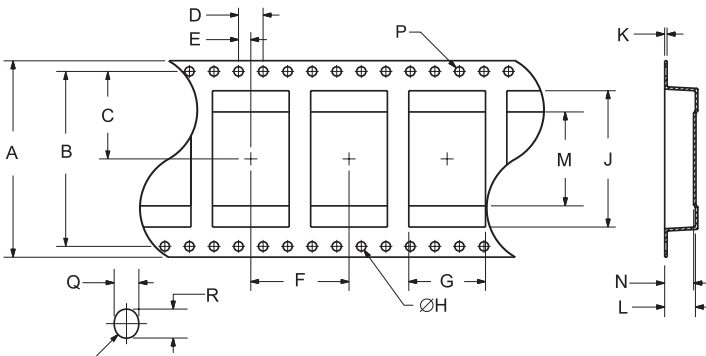
#### MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



#### SUGGESTED SOLDER PAD LAYOUT ALL DIMENSIONS IN MILLIMETERS



#### TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E	F	G
	32.0±0.3	30.2±0.15	14.2±0.15	4.0±0.1	2.0±0.1	16.0±0.1	12.5±0.1
H	J	K	L	M	N	Q	R
1.5+0.1/-0.0	22.2±0.1	0.40±0.05	5.0±0.1	15.3±0.1	4.7±0.1	1.5+0.1/-0	1.7+0.1/-0

REEL	S	T	U	V	W
	1.5 MIN	50 MIN	20.2 MIN	13.0±0.2	40 MIN
X	Y	Z	a	QTY/REEL	
2.5 MIN	10 MIN	360 MAX	32.4±2-0	1,000	

#### 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
Solderability	MIL-STD-883, Method 2002
Temperature Cycling	MIL-STD-883, Method 1010
Resistance to Soldering Heat	MIL-STD-202, Method 210
Resistance to Solvents	MIL-STD-202, Method 215

#### MARKING SPECIFICATIONS

Line 1: ECLIPTEK  
 Line 3: XX.XXX M \_\_\_\_\_ Frequency in MHz (5 Digits Maximum + Decimal)  
 Line 4: XX Y ZZ \_\_\_\_\_  
 \_\_\_\_\_ Week of Year  
 \_\_\_\_\_ Last Digit of Year  
 \_\_\_\_\_ Ecliptek Manufacturing Identifier

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EB51W4	Metal SMD	5.0V	OS1G	01/05