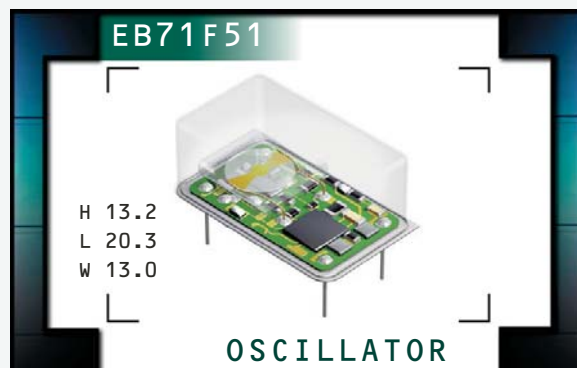


EB71F51 Series

- Oven Controlled Crystal Oscillator (OCXO)
- AT-Cut output
- HCMOS output
- 5.0V supply voltage
- 14 pin DIP package
- External control voltage option available
- Stability to $\pm 100\text{ppb}$
- Custom lead length, gull wing options available



ELECTRICAL SPECIFICATIONS

Frequency Range	10.000MHz, 12.288MHz, 12.800MHz, 16.000MHz, 19.440MHz, or 20.000MHz	
Operating Temperature Range (OTR)	0°C to 50°C, 0°C to 70°C, or -20°C to 70°C	
Storage Temperature Range	-55°C to 125°C	
Supply Voltage (V_{DD})	5.0V _{DC} $\pm 5\%$	
Frequency Tolerance / Stability		
vs. Initial Tolerance	at Nominal V_{DD} and V_C , at 25°C	$\pm 1.0\text{ppm}$ or $\pm 500\text{ppb}$ Maximum
vs. Temperature Stability	at Nominal V_{DD} and V_C	$\pm 100\text{ppb}$, $\pm 200\text{ppb}$, $\pm 280\text{ppb}$, or $\pm 500\text{ppb}$ Maximum
vs. Vdd	$V_{DD} \pm 5\%$	$\pm 50\text{ppb}$ Maximum
vs. Load	$V_{load} \pm 5\%$	$\pm 50\text{ppb}$ Maximum
vs. Aging (1 Day)	after 72 Hours of Operation	$\pm 30\text{ppb}$ Maximum
vs. Aging (1 Year)	after 72 Hours of Operation	$\pm 500\text{ppb}$ Maximum
vs. Aging (10 Years)	after 72 Hours of Operation	$\pm 3.0\text{ppm}$ Maximum
Crystal Cut	AT-Cut	
Warm Up Time	to $\pm 500\text{ppb}$ of Final Frequency at 1 Hour at 25°C	3 Minutes Maximum
Power Consumption	at Steady State, at 25°C	1.6 Watts Maximum
	During Warm Up, at 25°C	2.5 Watts Maximum
Output Voltage Logic High (V_{OH})	$I_{OH} = -8\text{mA}$	$V_{DD} - 0.5V_{DC}$ Minimum
Output Voltage Logic Low (V_{OL})	$I_{OL} = +8\text{mA}$	$0.5V_{DC}$ Maximum
Rise Time / Fall Time	Measured at 20% to 80% of Waveform	6nSec Maximum
Duty Cycle	Measured at 50% of Waveform	50 $\pm 5\%$
Load Drive Capability	15pF HCMOS Load	
Frequency Deviation	Referenced to F_0 at $V_C = 2.5V_{DC}$; $V_{DD} = 5.0V_{DC}$ over OTR	$\pm 5\text{ppm}$ Minimum
Control Voltage Range	$0.0V_{DC}$ to V_{DD}	
Control Voltage (V_C)	$2.5V_{DC} \pm 2.5V_{DC}$	
Transfer Function	Positive Transfer Characteristic	
Linearity	$\pm 10\%$ Maximum	
Input Impedance	10kOhms Typical	
Typical Phase Noise (at 12.800MHz)	at 10Hz Offset	-95dBc/Hz
	at 100Hz Offset	-120dBc/Hz
	at 1kHz Offset	-135dBc/Hz
	at 10kHz Offset	-140dBc/Hz

PART NUMBERING GUIDE

EB71F51 C 10 B V 2 - 20.000M - CL125

INITIAL TOLERANCE

C=±1.0ppm
D=±500ppb

FREQUENCY STABILITY

2 Digit Code Per Table 1

OPERATING TEMPERATURE RANGE (OTR)

1 Letter Code Per Table 1

AVAILABLE OPTIONS

Blank=None (Standard)
CLXXX=Custom Lead Length
G=Full Size Gull Wing

FREQUENCY

DUTY CYCLE

2=50% ±5%

VOLTAGE CONTROL OPTION

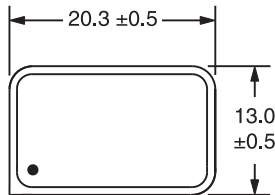
N=None (No Connect on Pin 1)
V=Voltage Control on Pin 1

TABLE 1: PART NUMBERING CODES

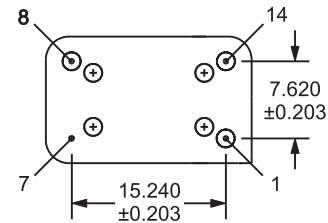
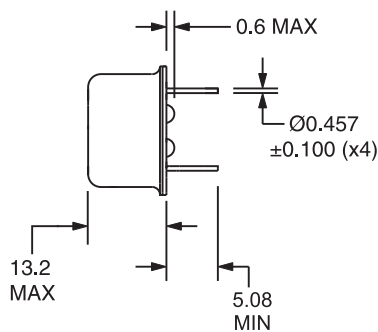
Operating Temperature Range	Code	Frequency Stability X Denotes Availability			
		±100ppb	±200ppb	±280ppb	±500ppb
		10	20	28	50
0°C to +50°C	A	X	X	X	X
0°C to +70°C	B		X	X	X
-20°C to +70°C	C			X	X

MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



Pin 1: No Connect or Voltage Control
Pin 7: Case Ground
Pin 8: Output
Pin 14: Supply Voltage



ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic

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 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

Frequency in MHz
(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
EB71F51

PACKAGE
14 pin DIP

VOLTAGE
5.0V

CLASS
OS1Z

REV. DATE
05/07