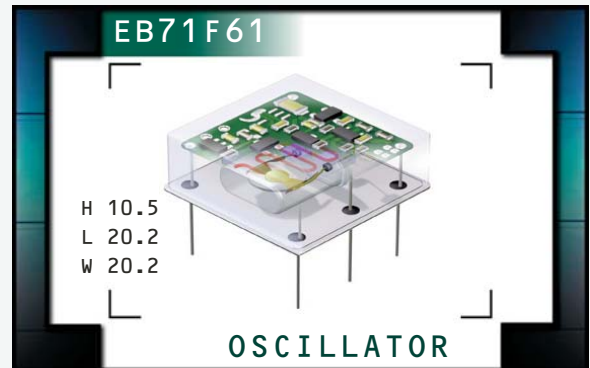


EB71F61 Series

- Oven Controlled Crystal Oscillator (OCXO)
- AT-Cut Crystal
- HCMOS output
- 5.0V supply voltage
- 5 pin DIP package
- External control voltage
- Stability to $\pm 50\text{ppb}$



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	$\pm 50\text{ppb}$, $\pm 80\text{ppb}$, $\pm 100\text{ppb}$, $\pm 200\text{ppb}$, $\pm 280\text{ppb}$, or $\pm 500\text{ppb}$ Maximum
vs. Vdd	$V_{DD} \pm 5\%$	$\pm 20\text{ppb}$ Maximum
vs. Load	$V_{load} \pm 5\%$	$\pm 20\text{ppb}$ Maximum
vs. Aging (1 Day)	after 72 Hours of Operation	$\pm 3.0\text{ppb}$ 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		1.2 Watts Maximum
During Warm Up, at 25°C		3.6 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 Maximum
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
Reference Voltage Output		4.5V _{DC} $\pm 0.3V_{DC}$ (Pin 5)
Linearity		$\pm 10\%$ Maximum
Input Impedance		10kOhms Typical
Typical Phase Noise (at 12.800MHz)		
1Hz Offset		-75dBc/Hz
10Hz Offset		-100dBc/Hz
100Hz Offset		-130dBc/Hz
1kHz Offset		-140dBc/Hz
10kHz Offset		-150dBc/Hz

PART NUMBERING GUIDE

EB71F61 D 10 B V 2 - 20.000M

INITIAL TOLERANCE

C=±1.0ppm
D=±500ppb

FREQUENCY STABILITY

2 Digit Code Per Table 1

OPERATING TEMPERATURE RANGE

1 Letter Code Per Table 1

FREQUENCY

DUTY CYCLE

2=50% ±5%

VOLTAGE CONTROL OPTION

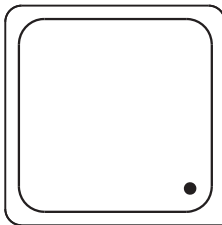
V=Voltage Control on Pin 4 and Reference
Voltage Output on Pin 5

TABLE 1: PART NUMBERING CODES

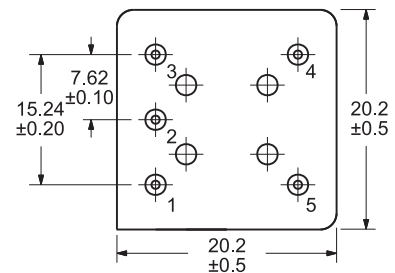
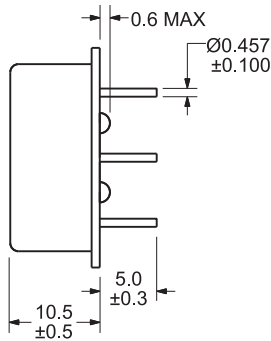
Operating Temperature Range			FREQUENCY STABILITY X Denotes availability					
			±50ppb	±80ppb	±100ppb	±200ppb	±280ppb	±500ppb
	Code	05	08	10	20	28	50	
	0°C to +50°C	A	X	X	X	X	X	X
	0°C to +70°C	B	X	X	X	X	X	X
-20°C to +70°C	C		X	X	X	X	X	

MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



Pin 1: Supply Voltage
Pin 2: Output
Pin 3: Case/Ground
Pin 4: Voltage Control
Pin 5: Reference Voltage Output



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
EB71F61

PACKAGE
5 pin DIP

VOLTAGE
5.0V

CLASS
OS2B

REV. DATE
05/07