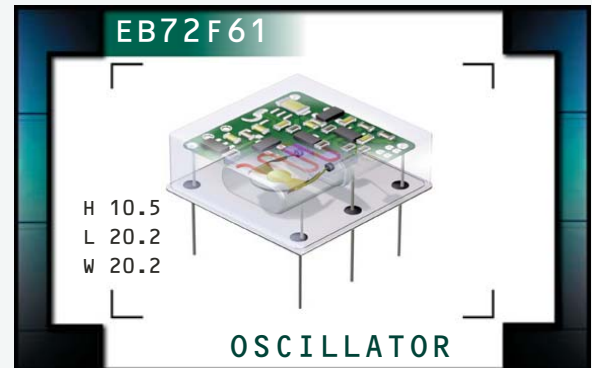


# EB72F61 Series

- Oven Controlled Crystal Oscillators (OCXO)
- LVCMOS Output
- +3.3V Supply Voltage
- AT-Cut Crystal Used
- External Voltage Control Function
- 5 pin DIP Metal Package



## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>	10.000MHz, 12.288MHz, 12.800MHz, 16.000MHz, 19.440MHz, or 20.000MHz	
<b>Operating Temperature Range (OTR)</b>	0°C to 50°C, 0°C to 70°C, or -20°C to 70°C	
<b>Storage Temperature Range</b>	-55°C to 125°C	
<b>Supply Voltage (V<sub>DD</sub>)</b>	3.3V <sub>DC</sub> ±5%	
<b>Frequency Tolerance / Stability</b>		
vs. Initial Tolerance	at Nominal V <sub>DD</sub> and V <sub>C</sub> , at 25°C	±1.0ppm or ±500ppb Maximum
vs. Temperature Stability	at Nominal V <sub>DD</sub> and V <sub>C</sub>	±80ppb, ±100ppb, ±200ppb, ±280ppb, or ±500ppb Maximum
vs. V <sub>DD</sub>	V <sub>DD</sub> ±5%	±20ppb Maximum
vs. Load	V <sub>load</sub> ±5%	±20ppb Maximum
vs. Aging (1 Day)	after 72 Hours of Operation	±3.0ppb Maximum
vs. Aging (1 Year)	after 72 Hours of Operation	±500ppb Maximum
vs. Aging (10 Years)	after 72 Hours of Operation	±3.0ppm Maximum
<b>Crystal Cut</b>	AT-Cut	
<b>Warm Up Time</b>	to ±500ppb of Final Frequency at 1 Hour at 25°C	3 Minutes Maximum
<b>Power Consumption</b>	at Steady State, at 25°C	1.2Watts Maximum
	During Warm Up, at 25°C	3.6Watts Maximum
<b>Output Voltage Logic High (V<sub>OH</sub>)</b>	I <sub>OH</sub> = -4mA	2.6V <sub>DC</sub> Minimum
<b>Output Voltage Logic Low (V<sub>OL</sub>)</b>	I <sub>OL</sub> = +4mA	0.4V <sub>DC</sub> Maximum
<b>Rise Time / Fall Time</b>	Measured at 20% to 80% of Waveform	6nSec Maximum
<b>Duty Cycle</b>	Measured at 50% of Waveform	50 ±5(%)
<b>Load Drive Capability</b>	15pF Maximum	
<b>Frequency Deviation</b>	Referenced to F <sub>0</sub> at V <sub>C</sub> = 1.65V <sub>DC</sub> ; V <sub>DD</sub> = 5.0V <sub>DC</sub> over OTR	±5ppm Minimum
<b>Control Voltage Range</b>	0.0V <sub>DC</sub> to V <sub>DD</sub>	
<b>Control Voltage (V<sub>C</sub>)</b>	1.65V <sub>DC</sub> ±1.65V <sub>DC</sub>	
<b>Transfer Function</b>	Positive Transfer Characteristic	
<b>Reference Voltage Output</b>	2.8V <sub>DC</sub> ±0.2V <sub>DC</sub> (Pin 5)	
<b>Linearity</b>	±10% Maximum	
<b>Input Impedance</b>	10kOhms Typical	
<b>Typical Phase Noise (at 12.800MHz)</b>	1Hz Offset	-70dBc/Hz
	10Hz Offset	-95dBc/Hz
	100Hz Offset	-120dBc/Hz
	1kHz Offset	-135dBc/Hz
	10kHz Offset	-140dBc/Hz

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EB72F61	PACKAGE 5 pin DIP	VOLTAGE 3.3V	CLASS OS2C	REV. DATE 05/07
--------------------------------	------------------------	-------------------	----------------------	-----------------	---------------	--------------------

# PART NUMBERING GUIDE

**EB72F61 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%

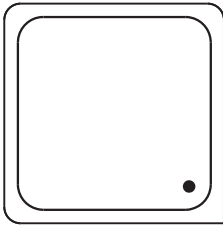
**VOLTAGE CONTROL OPTION**

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

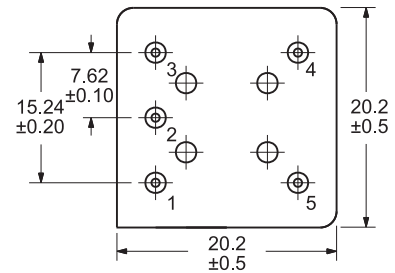
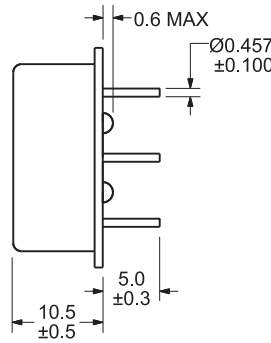
**TABLE 1: PART NUMBERING CODES**

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

**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 EB72F61	PACKAGE 5 pin DIP	VOLTAGE 3.3V	CLASS OS2C	REV. DATE 05/07
--------------------------------	------------------------	-------------------	----------------------	-----------------	---------------	--------------------