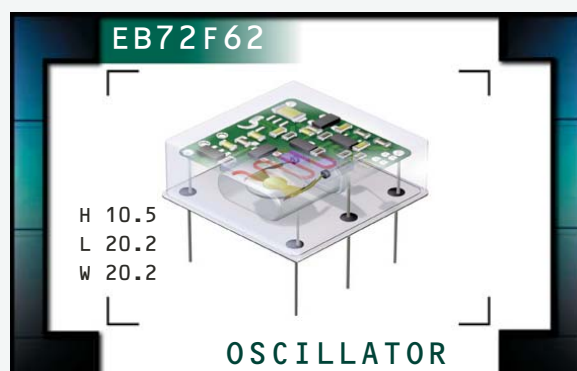


# EB72F62 Series

- Oven Controlled Crystal Oscillator (OCXO)
- SC-Cut Crystal
- HCMOS output
- 3.3V supply voltage
- 5 pin DIP package
- External control voltage
- Stability to  $\pm 30\text{ppb}$



## 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 (<math>V_{DD}</math>)</b>	3.3V <sub>DC</sub> $\pm 5\%$	
<b>Frequency Tolerance / Stability</b>		
vs. Initial Tolerance	at Nominal $V_{DD}$ and $V_C$ , at 25°C	$\pm 500\text{ppb}$ or $\pm 300\text{ppb}$ Maximum
vs. Temperature Stability	at Nominal $V_{DD}$ and $V_C$	$\pm 30\text{ppb}$ , $\pm 50\text{ppb}$ , $\pm 80\text{ppb}$ , $\pm 100\text{ppb}$ , $\pm 200\text{ppb}$ , or $\pm 280\text{ppb}$ 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	2.0ppb Maximum
vs. Aging (1 Year)	after 72 Hours of Operation	$\pm 100\text{ppb}$ Maximum
vs. Aging (10 Years)	after 72 Hours of Operation	$\pm 500\text{ppb}$ Maximum
<b>Crystal Cut</b>	SC-Cut	
<b>Warm Up Time</b>	to $\pm 100\text{ppb}$ of Final Frequency at 1 Hour at 25°C	3 Minute Maximum
<b>Power Consumption</b>	at Steady State, at 25°C	1.2 Watts Maximum
	During Warm Up, at 25°C	3.6 Watts Maximum
<b>Output Voltage Logic High (<math>V_{OH}</math>)</b>	$I_{OH} = -4\text{mA}$	2.6V <sub>DC</sub> Minimum
<b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>	$I_{OL} = +4\text{mA}$	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 $\pm 5\%$
<b>Load Drive Capability</b>	15pF HCMOS Load Maximum	
<b>Frequency Deviation</b>	Referenced to $F_0$ at $V_C = 1.65V_{DC}$ ; $V_{DD} = 5.0V_{DC}$ over OTR	$\pm 1.0\text{ppm}$ Minimum
<b>Control Voltage Range</b>	0.0V <sub>DC</sub> to $V_{DD}$	
<b>Control Voltage (<math>V_C</math>)</b>	1.65V <sub>DC</sub> $\pm 1.65V_{DC}$	
<b>Transfer Function</b>	Positive Transfer Characteristic	
<b>Reference Voltage Output</b>	2.8V <sub>DC</sub> $\pm 0.2V_{DC}$ (Pin 5)	
<b>Linearity</b>	$\pm 10\%$ Maximum	
<b>Input Impedance</b>	10kOhms Typical	
<b>Typical Phase Noise (at 12.800MHz)</b>	1Hz Offset	-90dBc/Hz
	10Hz Offset	-100dBc/Hz
	100Hz Offset	-130dBc/Hz
	1kHz Offset	-145dBc/Hz
	10kHz Offset	-150dBc/Hz

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EB72F62	PACKAGE 5 pin DIP	VOLTAGE 3.3V	CLASS OS2K	REV. DATE 05/07
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## PART NUMBERING GUIDE

**EB72F62 D 10 B V 2 - 20.000M**

### INITIAL TOLERANCE

D=±500ppb  
E=±300ppb

### 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

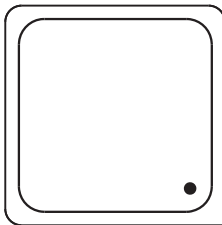
V=Voltage Control on Pin 4 and Reference  
Voltage Output on Pin 5

**TABLE 1: PART NUMBERING CODES**

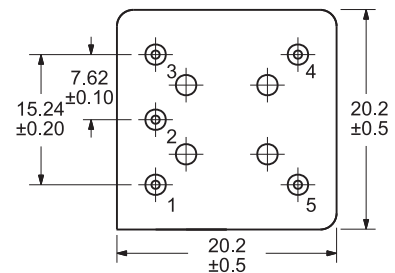
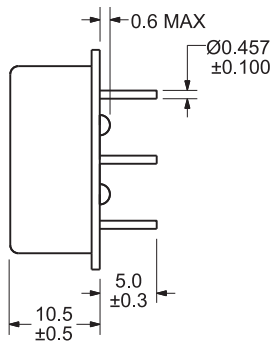
Operating Temperature Range	Code	FREQUENCY STABILITY X Denotes availability					
		±30ppb	±50ppb	±80ppb	±100ppb	±200ppb	±280ppb
		03	05	08	10	20	28
0°C to +50°C	A	X	X	X	X	X	X
0°C to +70°C	B		X	X	X	X	X
-20°C to +70°C	C			X	X	X	X

## 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  
EB72F62

PACKAGE  
5 pin DIP

VOLTAGE  
3.3V

CLASS  
OS2K

REV. DATE  
05/07