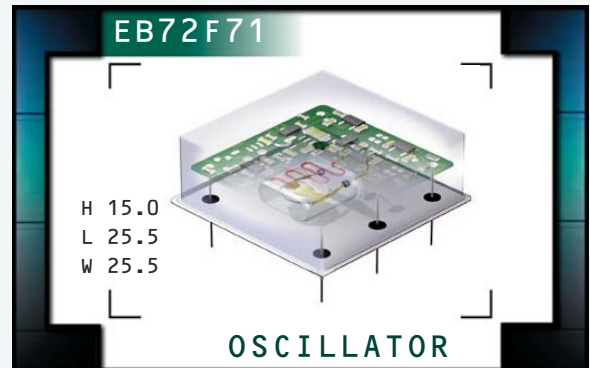


EB72F71 Series

- Oven Controlled Crystal Oscillator (OCXO)
- AT-Cut Crystal
- HCMOS output
- 3.3V supply voltage
- 5 pin DIP package
- External control voltage
- Stability to $\pm 80\text{ppb}$



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})	3.3V _{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	$\pm 80\text{ppb}$, $\pm 100\text{ppb}$, $\pm 200\text{ppb}$, $\pm 280\text{ppb}$, 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})	$I_{OH} = -4\text{mA}$	2.6V _{DC} Minimum
Output Voltage Logic Low (V_{OL})	$I_{OL} = +4\text{mA}$	0.4V _{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 $V_C = 1.65V_{DC}$; $V_{DD} = 5.0V_{DC}$ over OTR	
	$\pm 5\text{ppm}$ Minimum	
Control Voltage Range	0.0V _{DC} to V_{DD}	
Control Voltage (V_C)	1.65V _{DC} $\pm 1.65V_{DC}$	
Transfer Function	Positive Transfer Characteristic	
Reference Voltage Output	2.8V _{DC} $\pm 0.2V_{DC}$ (Pin 4)	
Linearity	$\pm 10\%$ Maximum	
Input Impedance	10kOhms Typical	
Typical Phase Noise (at 12.800MHz)	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 EB72F71	PACKAGE 5 pin DIP	VOLTAGE 3.3V	CLASS OS2E	REV. DATE 05/07
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PART NUMBERING GUIDE

EB72F71 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

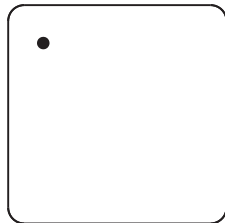
V=Voltage Control on Pin 3 and Reference Voltage Output on Pin 4

TABLE 1: PART NUMBERING CODES

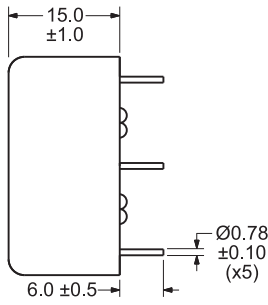
Operating Temperature Range	FREQUENCY STABILITY X Denotes availability					
	Code	±80ppb	±100ppb	±200ppb	±280ppb	±500ppb
		08	10	20	28	50
0°C to +50°C	A	X	X	X	X	X
0°C to +70°C	B		X	X	X	X
-20°C to +70°C	C				X	X

MECHANICAL DIMENSIONS

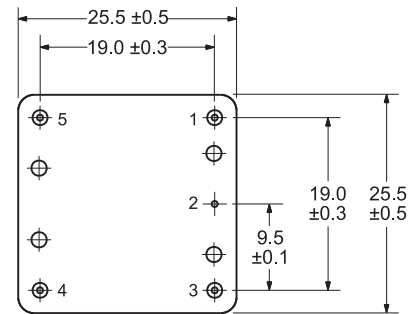
ALL DIMENSIONS IN MILLIMETERS



Pin 1: Output
Pin 2: Case/Ground
Pin 3: Voltage Control



Pin 4: Reference Voltage Output
Pin 5: 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
EB72F71

PACKAGE
5 pin DIP

VOLTAGE
3.3V

CLASS
OS2E

REV. # DATE
05/07