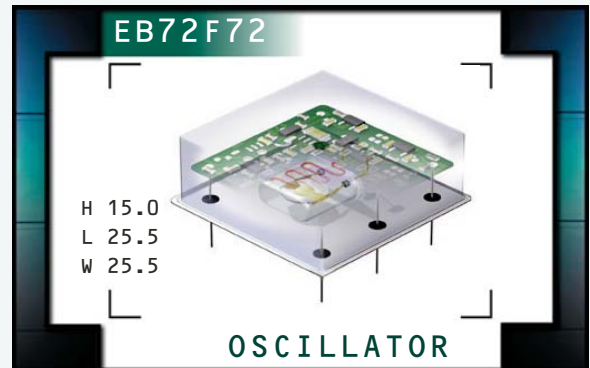


EB72F72 Series

- 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

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	$\pm 500\text{ppb}$ 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. V _{DD}	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
Crystal Cut	SC-Cut	
Warm Up Time	to $\pm 50\text{ppb}$ of Final Frequency at 1 Hour at 25°C	3 Minute 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} = -4mA	2.6V _{DC} Minimum
Output Voltage Logic Low (V_{OL})	I _{OL} = +4mA	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	$\pm 0.5\text{ppm}$ Minimum
Control Voltage Range	0.0V _{DC} to V _{DD}	
Control Voltage (V_C)	1.65V _{DC} $\pm 1.65\text{V}_{DC}$	
Transfer Function	Positive Transfer Characteristic	
Reference Voltage Output	2.8V _{DC} $\pm 0.2\text{V}_{DC}$ (Pin 4)	
Linearity	$\pm 10\%$ Maximum	
Input Impedance	10kOhms Typical	
Typical Phase Noise (at 12.800MHz)	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 EB72F72	PACKAGE 5 pin DIP	VOLTAGE 3.3V	CLASS OS2M	REV. DATE 05/07
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PART NUMBERING GUIDE

EB72F72 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%

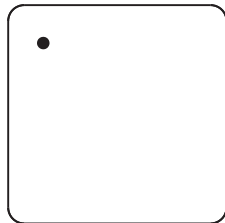
VOLTAGE CONTROL OPTION

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

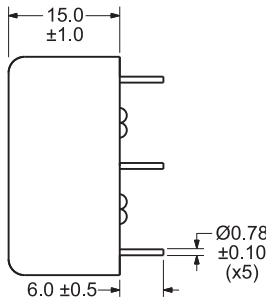
TABLE 1: PART NUMBERING CODES

Operating Temperature Range	FREQUENCY STABILITY X Denotes availability						
		±30ppb	±50ppb	±80ppb	±100ppb	±200ppb	±280ppb
	Code	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

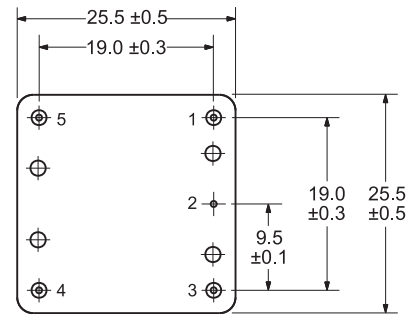
MECHANICAL DIMENSIONS
ALL DIMENSIONS IN MILLIMETERS



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



Pin 4: Reference Voltage Output
Pin 5: Supply Voltage



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
Line 3: XX Y ZZ

Frequency in MHz (5 Digits Maximum + Decimal)
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 EB72F72	PACKAGE 5 pin DIP	VOLTAGE 3.3V	CLASS OS2M	REV. DATE 05/07
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