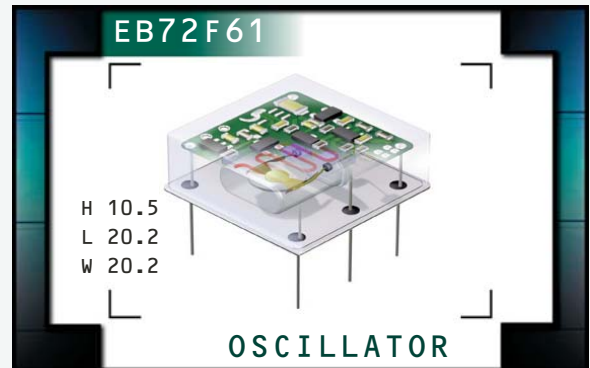


EB72F61 Series

- Oven Controlled Crystal Oscillator (OCXO)
- AT-Cut Crystal
- HCMOS output
- 3.3V supply voltage
- 5 pin DIP package
- External control voltage
- Stability to ± 80 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 | ± 1.0 ppm or ± 500 ppb Maximum |
| vs. Temperature Stability | at Nominal V _{DD} and V _C | ± 80 ppb, ± 100 ppb, ± 200 ppb, ± 280 ppb, or ± 500 ppb Maximum |
| vs. V _{DD} | V _{DD} $\pm 5\%$ | ± 20 ppb Maximum |
| vs. Load | V _{load} $\pm 5\%$ | ± 20 ppb Maximum |
| vs. Aging (1 Day) | after 72 Hours of Operation | ± 3.0 ppb Maximum |
| vs. Aging (1 Year) | after 72 Hours of Operation | ± 500 ppb Maximum |
| vs. Aging (10 Years) | after 72 Hours of Operation | ± 3.0 ppm Maximum |
| Crystal Cut | AT-Cut | |
| Warm Up Time | to ± 500 ppb of Final Frequency at 1 Hour at 25°C | 3 Minutes Maximum |
| Power Consumption | at Steady State, at 25°C | 1.2Watts Maximum |
| | During Warm Up, at 25°C | 3.6Watts 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 ± 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 | ± 5 ppm Minimum |
| Control Voltage Range | 0.0V _{DC} to V _{DD} | |
| Control Voltage (V_C) | 1.65V _{DC} ± 1.65 V _{DC} | |
| Transfer Function | Positive Transfer Characteristic | |
| Reference Voltage Output | 2.8V _{DC} ± 0.2 V _{DC} (Pin 5) | |
| 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 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

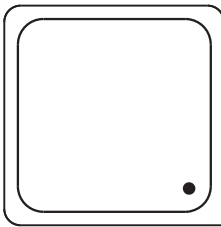
2=50% ±5%

VOLTAGE CONTROL OPTION

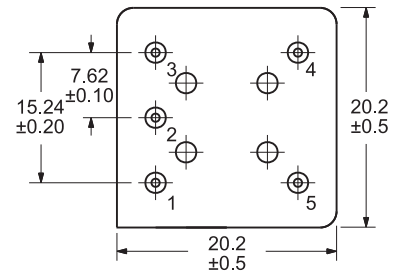
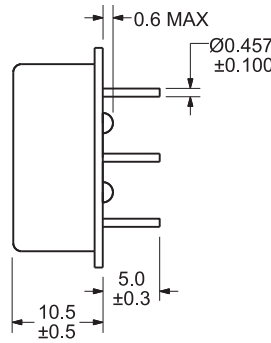
V=Voltage Control on Pin 4 and Reference Voltage Output on Pin 5

| 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 |
|--------------------------------|------------------------|-------------------|----------------------|-----------------|---------------|--------------------|