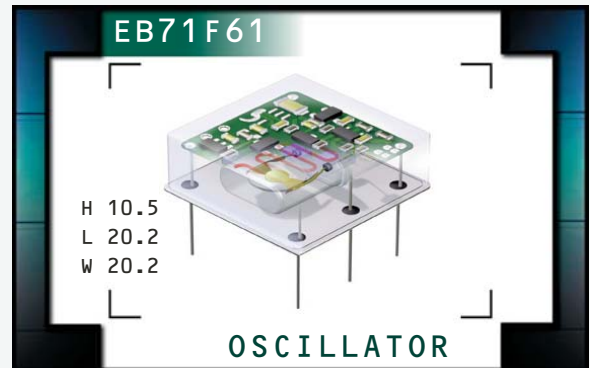


EB71F61 Series

- Oven Controlled Crystal Oscillators (OCXO)
- HCMOS Output
- +5.0V Supply Voltage
- AT-Cut Crystal Used
- External Voltage Control Function
- 5 pin DIP Metal Package



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}) | 5.0V _{DC} ±5% | |
| Frequency Tolerance / Stability | | |
| vs. Initial Tolerance | at Nominal V _{DD} and V _C , at 25°C | ±1.0ppm or ±500ppb Maximum |
| vs. Temperature Stability | at Nominal V _{DD} and V _C | ±50ppb, ±80ppb, ±100ppb, ±200ppb, ±280ppb, or ±500ppb Maximum |
| vs. V _{DD} | V _{DD} ±5% | ±20ppb Maximum |
| vs. Load | V _{load} ±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 |
| Crystal Cut | AT-Cut | |
| Warm Up Time | to ±500ppb 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} = -8mA | V _{DD} -0.5V _{DC} Minimum |
| Output Voltage Logic Low (V_{OL}) | I _{OL} = +8mA | 0.5V _{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 Maximum |
| Frequency Deviation | Referenced to F ₀ at V _C = 2.5V _{DC} ; V _{DD} =5.0V _{DC} over OTR | ±5ppm Minimum |
| Control Voltage Range | | 0.0V _{DC} to V _{DD} |
| Control Voltage (V_C) | | 2.5V _{DC} ±2.5V _{DC} |
| Transfer Function | | Positive Transfer Characteristic |
| Reference Voltage Output | | 4.5V _{DC} ±0.3V _{DC} (Pin 5) |
| Linearity | | ±10% Maximum |
| Input Impedance | | 10kOhms Typical |
| Typical Phase Noise (at 12.800MHz) | 1Hz Offset | -75dBc/Hz |
| | 10Hz Offset | -100dBc/Hz |
| | 100Hz Offset | -130dBc/Hz |
| | 1kHz Offset | -140dBc/Hz |
| | 10kHz Offset | -150dBc/Hz |

| | | | | | | |
|--------------------------------|------------------------|-------------------|----------------------|-----------------|---------------|--------------------|
| MANUFACTURER ECLIPTEK CORP. | CATEGORY OSCILLATOR | SERIES EB71F61 | PACKAGE 5 pin DIP | VOLTAGE 5.0V | CLASS OS2B | REV. DATE 05/07 |
|--------------------------------|------------------------|-------------------|----------------------|-----------------|---------------|--------------------|

PART NUMBERING GUIDE

EB71F61 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%

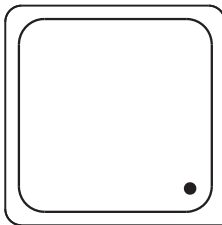
VOLTAGE CONTROL OPTION

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

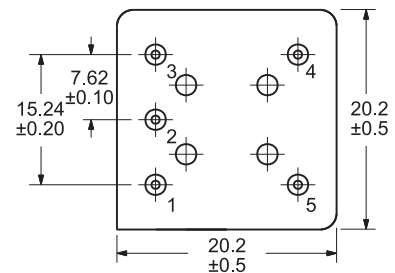
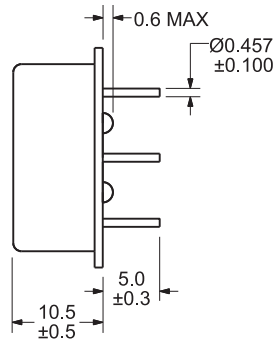
TABLE 1: PART NUMBERING CODES

| Operating Temperature Range | FREQUENCY STABILITY X Denotes availability | | | | | | |
|-----------------------------|---|--------|--------|---------|---------|---------|---------|
| | | ±50ppb | ±80ppb | ±100ppb | ±200ppb | ±280ppb | ±500ppb |
| | Code | 05 | 08 | 10 | 20 | 28 | 50 |
| 0°C to +50°C | A | X | X | X | X | X | X |
| 0°C to +70°C | B | X | X | X | X | X | X |
| -20°C to +70°C | C | | X | 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 | 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 EB71F61 | PACKAGE 5 pin DIP | VOLTAGE 5.0V | CLASS OS2B | REV. DATE 05/07 |
|--------------------------------|------------------------|-------------------|----------------------|-----------------|---------------|--------------------|