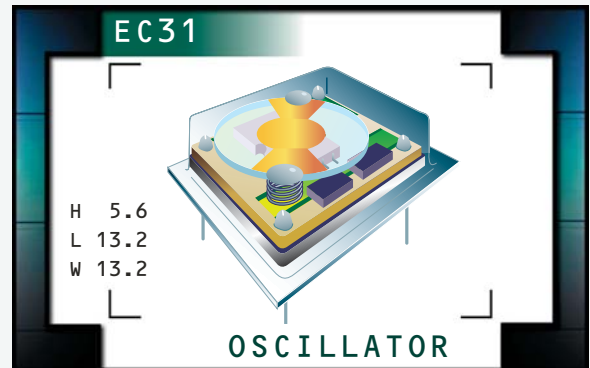


EC31 Series

- Voltage Controlled Crystal Oscillator (VCX0)
- 5.0V Supply Voltage
- HCMOS/TTL output
- 8 pin DIP package
- Stability to 20ppm
- Wide frequency and pull range



NOTES

ELECTRICAL SPECIFICATIONS

| | | |
|--|--|--|
| Frequency Range | | 1.000MHz to 44.736MHz |
| Operating Temperature Range | | 0°C to 70°C or -40°C to 85°C |
| Storage Temperature Range | | -55°C to 125°C |
| Supply Voltage (V_{DD}) | | 5.0V _{DC} ±5% |
| Aging (at 25°C) | | ±5ppm / year Maximum |
| Load Drive Capability | | 10TTL Load or 15pF HCMOS Load Maximum |
| Start Up Time | | 10 mSeconds Maximum |
| Frequency Deviation / Control Voltage | 2.5V _{DC} ±2.0V _{DC} Positive Transfer Characteristic, | ±50ppm Minimum |
| | 2.5V _{DC} ±2.0V _{DC} Positive Transfer Characteristic, | ±100ppm Minimum |
| | 2.5V _{DC} ±2.0V _{DC} Positive Transfer Characteristic, | ±150ppm Minimum |
| Linearity | | ±20%, ±15%, ±10% Maximum, or ±5% Maximum |
| Input Current | 1.000MHz to 20.000MHz | 20mA Maximum |
| | 20.0001MHz to 30.000MHz | 40mA Maximum |
| | 30.001MHz to 44.736MHz | 50mA Maximum |
| Frequency Tolerance / Stability | Inclusive of Operating Temperature Range, Supply Voltage, and Load | ±100ppm, ±50ppm, ±25ppm, or ±20ppm Maximum (0°C to 70°C Only) |
| Output Voltage Logic High (V_{OH}) | w/TTL Load | 2.4V _{DC} Minimum |
| | w/HCMOS Load | V_{DD} -0.5V _{DC} Minimum |
| Output Voltage Logic Low (V_{OL}) | w/TTL Load | 0.4V _{DC} Maximum |
| | w/HCMOS Load | 0.5V _{DC} Maximum |
| Duty Cycle | at 1.4V _{DC} w/TTL Load; at 50% of Waveform w/HCMOS Load | 50 ±10% (Standard) |
| | at 1.4V _{DC} w/TTL Load and HCMOS Load | 50 ±5% (Optional) |
| Rise Time / Fall Time | 0.4V _{DC} to 2.4V _{DC} w/TTL Load; 20% to 80% of Waveform w/HCMOS Load | 5 nSeconds Maximum |
| Period Jitter: Absolute | | ±100pSeconds Maximum |
| Period Jitter: One Sigma | | ±25pSeconds Maximum |

| | | | | | | |
|--------------------------------|------------------------|----------------|----------------------|-----------------|---------------|--------------------|
| MANUFACTURER ECLIPTEK CORP. | CATEGORY OSCILLATOR | SERIES EC31 | PACKAGE 8 pin DIP | VOLTAGE 5.0V | CLASS OS18 | REV. DATE 03/02 |
|--------------------------------|------------------------|----------------|----------------------|-----------------|---------------|--------------------|

PART NUMBERING GUIDE

EC31 00 HST A 15 ET - 24.000M - G TR

FREQUENCY TOLERANCE / STABILITY

00=±100ppm Maximum (Standard)
 45=±50ppm Maximum, 25=±25ppm Maximum
 20=±20ppm Maximum

PACKAGE

HS=Half Size 8 Pin DIP

DUTY CYCLE

Blank=50 ±10(%) (Standard), T=50 ±5(%)

FREQUENCY DEVIATION

Blank=±50ppm Minimum (Standard)
 A=±100ppm Minimum
 B=±150ppm Minimum

PACKAGING OPTIONS

Blank=Bulk (Standard)
 TR=Tape & Reel (only offered with
 Half Size G and Half Size G2 Options)

AVAILABLE OPTIONS

Blank=None (Standard)
 CLXX=Custom Lead Length (See Page 133)
 G=Half Size Gull Wing (See Page 132)
 G2=Alternate Half Size Gull Wing (See Page 132)

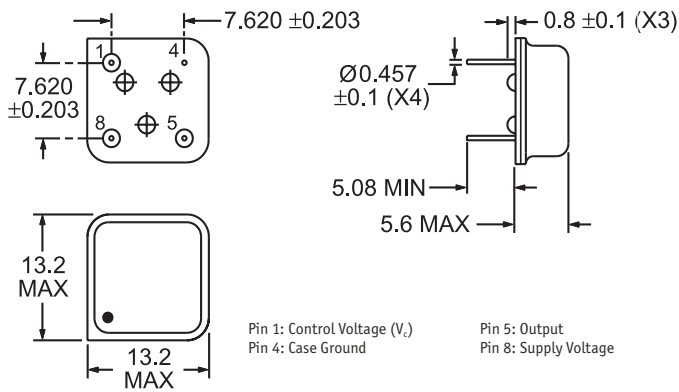
FREQUENCY

OPERATING TEMP. RANGE
 Blank=0°C to 70°C (Standard)
 ET=-40°C to 85°C

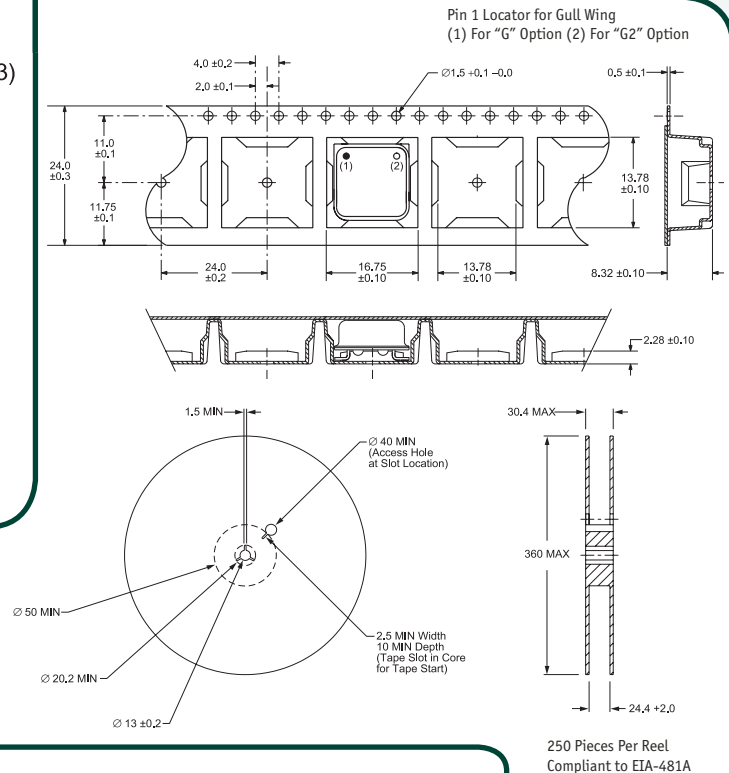
LINEARITY

Blank=20% Maximum (Standard)
 05=5% Maximum, 10=10% Maximum
 15=15% Maximum

MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



MARKING SPECIFICATIONS

Line 1: ECLIPTEK
 Line 2: EC31 Series Designator
 Line 3: XX.XXX M Frequency in MHz (5 Digits Maximum + Decimal)
 Line 4: XX YY ZZ Week of Year, Last Digit of Year, Ecliptek Manufacturing Identifier

Note: Pin 1 shall be designated with a dot

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

| Characteristic | Specification |
|--------------------|--|
| Seal Integrity | Bubble test in Perfluorocarbon at +125°C ±5°C for 60 seconds minimum. |
| Solderability | Sn63 Solder dip at +230°C ±5°C for 5 seconds/95% coverage. |
| Marking Permanency | 10 Strokes with brush after 1 minute soak in solvent, 3 times. |
| Shock | Random drop on hard wooden plate 3 times from a height of 20cm. |
| Vibration | Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours. |

| MANUFACTURER | CATEGORY | SERIES | PACKAGE | VOLTAGE | CLASS | REV. DATE |
|----------------|------------|--------|-----------|---------|-------|-----------|
| ECLIPTEK CORP. | OSCILLATOR | EC31 | 8 pin DIP | 5.0V | OS18 | 03/02 |