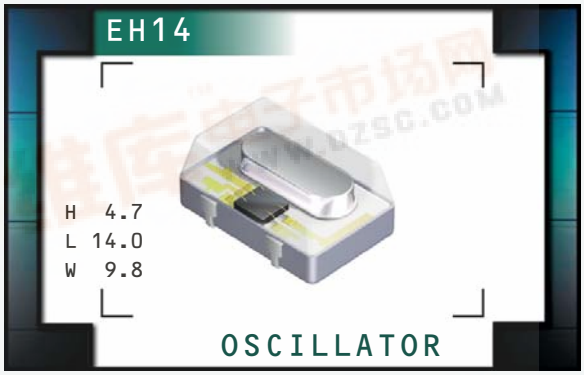
# EH14 Series

- Plastic surface mount package
- 5.0V supply voltage
- HCMOS/TTL output
- Stability to 20ppm
- Available in tube or tape and reel




## ELECTRICAL SPECIFICATIONS

| | | | |
|---|---|---|---|
| **Frequency Range** | | 1.000MHz to 155.520MHz | |
| **Operating Temperature Range** | | 0°C to 70°C or -40°C to 85°C | |
| **Storage Temperature Range** | | -55°C to 125°C | |
| **Supply Voltage ($V_{DD}$)** | | 5.0$V_{DC}$ ±10% | |
| **Input Current** | | 50mA Maximum (Unloaded) | |
| **Frequency Tolerance / Stability** | Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, First Year Aging at 25°C, Shock, and Vibration | ±100ppm, ±50ppm, ±25ppm, or ±20ppm Maximum | |
| **Output Voltage Logic High ($V_{OH}$)** | w/TTL Load | 2.4$V_{DC}$ Minimum | $I_{OH}$ =-16mA |
| | w/HCMOS Load | $V_{DD}$-0.4$V_{DC}$ Minimum | $I_{OH}$ =-16mA |
| **Output Voltage Logic Low ($V_{OL}$)** | w/TTL Load | 0.4$V_{DC}$ Maximum | $I_{OL}$ =+16mA |
| | w/HCMOS Load | 0.5$V_{DC}$ Maximum | $I_{OL}$ =+16mA |
| **Duty Cycle ($V_{DD}$=5.0$V_{DC}$)** | at 1.4$V_{DC}$ w/TTL Load; at 50% of waveform w/HCMOS Load (≤70.000MHz) | 50 ±10(%) (Standard) | |
| | at 50% of waveform w/ TTL Load or w/HCMOS Load (>70.000MHz) | 50 ±10(%) (Standard) | |
| | at 50% of waveform w/TTL Load or w/HCMOS Load | 50 ±5(%) (Optional) | |
| **Rise Time / Fall Time** | 0.8$V_{DC}$ to 2.0$V_{DC}$ w/TTL Load or 20% to 80% of Waveform w/HCMOS Load (≤70.000MHz) | 6 nSeconds Maximum | |
| | 0.8$V_{DC}$ to 2.0$V_{DC}$ w/TTL Load or 20% to 80% of Waveform w/HCMOS Load (>70.000MHz) | 4 nSeconds Maximum | |
| **Tri-State Input Voltage** | $V_{IH}$ :No Connection | Enables Output | |
| | $V_{IH}$ :≥2.2$V_{DC}$ | Enables Output | |
| | $V_{IL}$ :≤0.8$V_{DC}$ | Disables Output: High Impedance | |
| **Aging (at 25°C)** | | ±5ppm / year Maximum | |
| **Start Up Time** | | 10 mSeconds Maximum | |
| **Load Drive Capability** | ≤70.000MHz | 10TTL Load or 50pF HCMOS Load Maximum | |
| | >70.000MHz | 5TTL Load or 15pF HCMOS Load Maximum | |
| **Period Jitter: Absolute** | | ±250pSec Maximum, ±100pSec Typical | |
| **Period Jitter: One Sigma** | | ±50pSec Maximum, ±30pSec Typical | |



| MANUFACTURER | CATEGORY | SERIES | PACKAGE | VOLTAGE | CLASS | REV. DATE |
|---|---|---|---|---|---|---|
| ECLIPTEK CORP. | OSCILLATOR | EH14 | PLASTIC | 5.0V | OS49 | 02/04 |

# PART NUMBERING GUIDE

**EH14 00 SJ ET T TS - 24.000M TR**

**FREQUENCY TOLERANCE / STABILITY**
00=100 ppm Maximum (Standard)
45=±50ppm Maximum, 25=±25ppm Maximum
20=±20ppm Maximum

**OPERATING TEMP. RANGE**
Blank =0ºC to 70ºC, ET=-40°C to 85°C

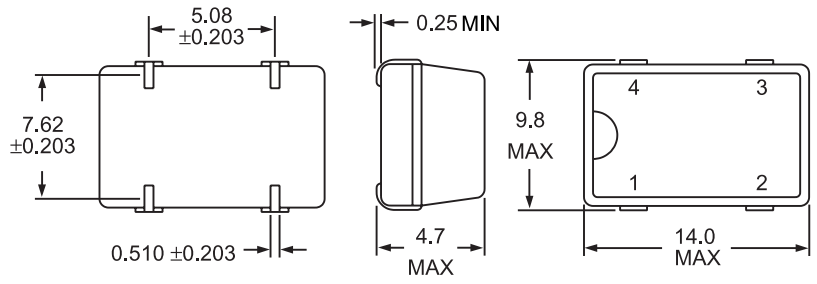
**DUTY CYCLE**
Blank=50 ±10(%) (Standard)
T=50 ±5(%)

**AVAILABLE OPTIONS**
Blank=Bulk (Standard)
TR=Tape and Reel

**FREQUENCY**

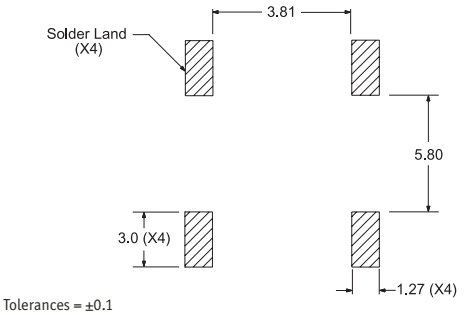
**OUTPUT CONTROL FUNCTION**
TS=Tri-State

## MECHANICAL DIMENSIONS
ALL DIMENSIONS IN MILLIMETERS



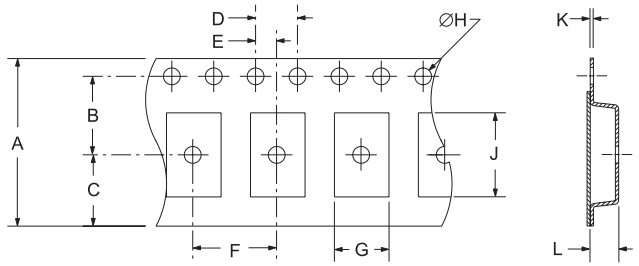

Pin 1: Tri-State
Pin 2: Case Ground
Pin 3: Output
Pin 4: Supply Voltage

## SUGGESTED SOLDER PAD LAYOUT
ALL DIMENSIONS IN MILLIMETERS

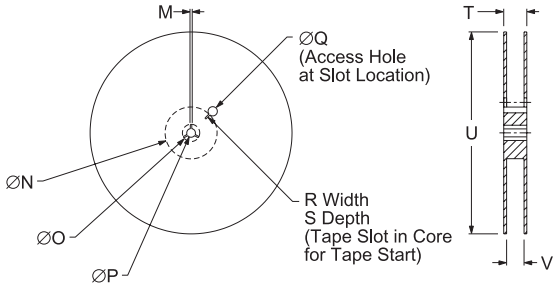



Tolerances = ±0.1

## TAPE AND REEL DIMENSIONS
ALL DIMENSIONS IN MILLIMETERS




| TAPE | A | B | C | D | E |
|---|---|---|---|---|---|
| | 24 ±.3 | 11.5 ±.1 | 10.75 ±.1 | 4 ±.2 | 2±.1 |
| F | G | H | J | K | L |
| 12 ±.2 | B0* | 1.5 +.1-0 | A0* | .3 ±.1 | K0* |




| REEL | M | N | O | P | Q |
|---|---|---|---|---|---|
| | 1.5 MIN | 50 MIN | 20.2 MIN | 13±.2 | 40 MIN |
| R | S | T | U | V | QTY/REEL |
| 2.5 MIN | 10 MIN | 30.4 MAX | 360 MAX | 24.4+2-0 | 1000 |

*Compliant to EIA 481A

## ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

| Characteristic | Specification |
|---|---|
| Fine Leak Test | MIL-STD-883, Method 1014, Condition A |
| 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: P XX Y ZZ
- Week of Year
- Last Digit of Year
- Ecliptek Manufacturing Identifier
- Configuration Designator

| MANUFACTURER | CATEGORY | SERIES | PACKAGE | VOLTAGE | CLASS | REV - DATE |
|---|---|---|---|---|---|---|
| ECLIPTEK CORP. | OSCILLATOR | EH14 | PLASTIC | 5.0V | OS49 | 02/04 |