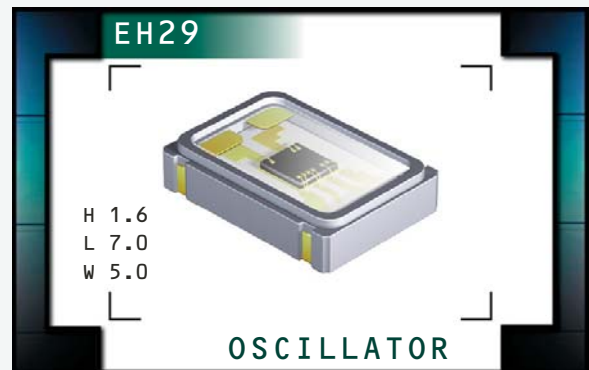


# EH29 Series

- RoHS Compliant (Pb-Free)
- Ceramic SMD package
- 1.8V supply voltage
- LVCMOS output
- Stability to  $\pm 20$ ppm
- Available on tape and reel



**ECLIPTEK**<sup>®</sup>  
CORPORATION



## NOTES

### ELECTRICAL SPECIFICATIONS

|  |  |   |
|--|--|---|
| <b>Frequency Range</b>                                 |  | 2.500MHz to 133.000MHz  |
| <b>Operating Temperature Range</b>                     |  | 0°C to 70°C or -40°C to 85°C  |
| <b>Storage Temperature Range</b>                       |  | -55°C to 125°C  |
| <b>Supply Voltage (<math>V_{DD}</math>)</b>            |  | 1.8V <sub>DC</sub> $\pm 5\%$  |
| <b>Input Current (No Load)</b>                         | 2.500MHz to 25.000MHz  | 3.5mA Maximum   |
|  | 25.001MHz to 75.000MHz   | 4mA Maximum   |
|  | 75.001MHz to 133.000MHz  | 5mA Maximum   |
| <b>Frequency Tolerance / Stability</b>                 | Inclusive of all conditions: Calibration Tolerance at 25°C,<br>Frequency Stability over the Operating Temperature Range,<br>Supply Voltage Change, Output Load Change, First Year Aging<br>at 25°C, 260°C Reflow, Shock, and Vibration | $\pm 100$ ppm Maximum<br>$\pm 50$ ppm Maximum<br>$\pm 25$ ppm Maximum<br>$\pm 20$ ppm Maximum |
| <b>Output Voltage Logic High (<math>V_{OH}</math>)</b> |  | 90% of $V_{DD}$ Minimum $I_{OH} = -8$ mA  |
| <b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>  |  | 10% of $V_{DD}$ Maximum $I_{OL} = +8$ mA  |
| <b>Rise Time / Fall Time</b>                           | 2.500MHz to 50.000MHz 20% to 80% of Waveform   | 6 nSeconds Maximum  |
|  | 50.001MHz to 75.000MHz 20% to 80% of Waveform  | 4 nSeconds Maximum  |
|  | 75.001MHz to 133.000MHz 20% to 80% of Waveform   | 2 nSeconds Maximum  |
| <b>Load Drive Capability</b>                           |  | 15pF Maximum  |
| <b>Duty Cycle</b>                                      | at 50% of Waveform   | 50 $\pm 10$ (%) (Standard) or<br>50 $\pm 5$ (%) (Optional)                                    |
| <b>Tri-State Input Voltage</b>                         | $V_{IH} \geq 90\%$ of $V_{DD}$ or No Connection  | Enables Output  |
|  | $V_{IH} \leq 10\%$ of $V_{DD}$   | Disables Output: High Impedance   |
| <b>Standby Current</b>                                 | Pin 1 = Ground   | 10 $\mu$ A Maximum  |
| <b>Aging (at 25°C)</b>                                 |  | $\pm 5$ ppm / year Maximum  |
| <b>Start Up Time</b>                                   |  | 10mSeconds Maximum  |
| <b>Period Jitter: Absolute</b>                         |  | $\pm 100$ pSec Maximum  |

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
OSCILLATOR

SERIES  
EH29

PACKAGE  
CERAMIC

VOLTAGE  
1.8V

CLASS  
057B

REV. DATE  
05/09

## PART NUMBERING GUIDE

### EH29 00 ET TS - 24.000M TR

#### FREQUENCY TOLERANCE / STABILITY

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

#### OPERATING TEMP. RANGE

Blank = 0°C to 70°C or  
 ET = -40°C to 85°C

#### DUTY CYCLE

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

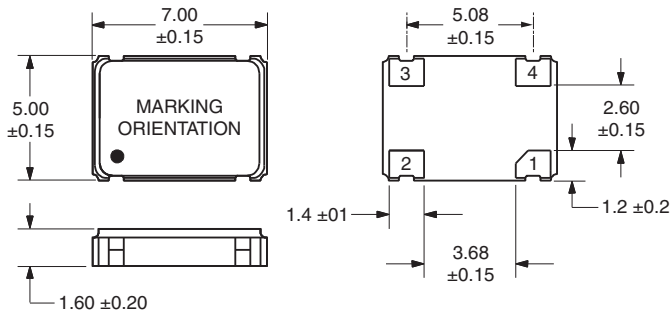
#### AVAILABLE OPTIONS

Blank = Bulk (Standard)  
 TR = Tape and Reel

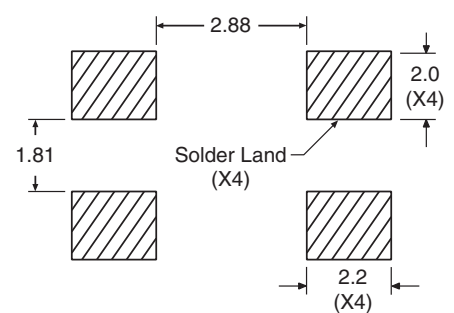
#### FREQUENCY

TS = Tri-State (High Impedance)

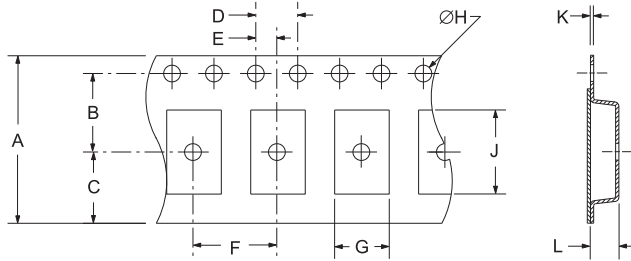
#### MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



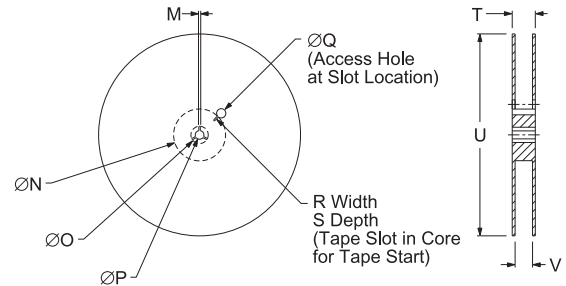
#### SUGGESTED SOLDER PAD LAYOUT ALL DIMENSIONS IN MILLIMETERS



#### TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



| REEL    | A          | B           | C        | D        | E       |
|---------|------------|-------------|----------|----------|---------|
|         | 16+0.3-0.1 | 7.5±0.1     | 6.75±0.1 | 4.0±0.1  | 2.0±0.1 |
| F       | G          | H           | J        | K        | L       |
| 8.0±0.1 | B0*        | 1.5+0.1-0.0 | A0*      | 0.3±0.05 | K0*     |



| REEL    | M       | N        | O        | P        | Q        |
|---------|---------|----------|----------|----------|----------|
|         | 1.5 MIN | 50 MIN   | 20.2 MIN | 13.0±0.2 | 40 MIN   |
| R       | S       | T        | U        | V        | QTY/REEL |
| 2.5 MIN | 10 MIN  | 22.4 MAX | 360 MAX  | 16.4+2-0 | 1,000    |

\*Compliant to EIA 481A

#### ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

| Characteristic               | Specification                                 |
|------------------------------|---|
| ESD Susceptibility           | MIL-STD-883, Method 3015, Class 1, HBM: 1500V |
| Fine Leak Test               | MIL-STD-883, Method 1014, Condition A         |
| Flammability                 | UL94-V0                                       |
| Gross Leak Test              | MIL-STD-883, Method 1014, Condition C         |
| Mechanical Shock             | MIL-STD-883, Method 2002, Condition B         |
| Moisture Resistance          | MIL-STD-883, Method 1004                      |
| Moisture Sensitivity         | J-STD-020, MSL 1                              |
| Resistance to Soldering Heat | MIL-STD-202, Method 210, Condition K          |
| Resistance to Solvents       | MIL-STD-202, Method 215                       |
| Solderability                | MIL-STD-883, Method 2003                      |
| Temperature Cycling          | MIL-STD-883, Method 1010, Condition B         |
| Vibration                    | MIL-STD-883, Method 2007, Condition A         |

#### MARKING SPECIFICATIONS

Line 1: ECLIPTEK  
 Line 2: XX.XXX M  
 Frequency in MHz (5 Digits Maximum + Decimal)  
 Line 3: XXXXXX  
 Ecliptek Manufacturing Identifier

| MANUFACTURER   | CATEGORY   | SERIES | PACKAGE | VOLTAGE | CLASS | REV. DATE |
|----------------|------------|--------|---------|---------|-------|-----------|
| ECLIPTEK CORP. | OSCILLATOR | EH29   | CERAMIC | 1.8V    | OS7B  | 05/09     |