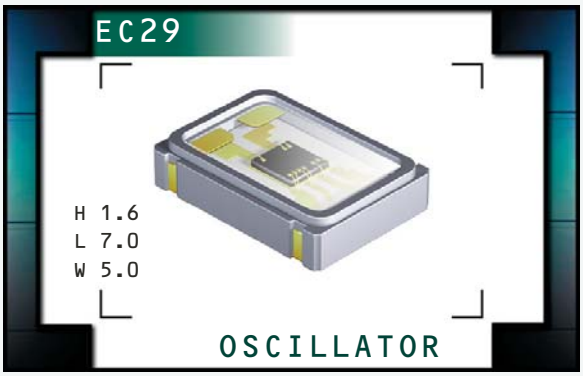
# EC29 Series

- Crystal Clock Oscillators
- LVCMOS Output
- +1.8V Supply Voltage
- Tri-State Output Function
- 4 Pad Ceramic SMD Package
- Low Stand-by Current
- RoHS Compliant (Pb-Free)




## ELECTRICAL SPECIFICATIONS

| | | |
|---|---|---|
| **Frequency Range ($F_O$)** | | 1.000MHz to 125.000MHz |
| **Operating Temperature Range (OTR)** | | -10°C to +70°C |
| | | -40°C to +85°C |
| **Storage Temperature Range (STR)** | | -55°C to +125°C |
| **Supply Voltage ($V_{DD}$)** | | 1.8$V_{DC}$ ±5% |
| **Input Current ($I_{DD}$)** | 1.000MHz to 9.999MHz | 3mA Maximum |
| | 10.000MHz to 34.999MHz | 4mA Maximum |
| | 35.000MHz to 49.999MHz | 8mA Maximum |
| | 50.000MHz to 69.999MHz | 9mA Maximum |
| | 70.000MHz to 89.999MHz | 11mA Maximum |
| | 90.000MHz to 109.999MHz | 12mA Maximum |
| | 110.000MHz to 125.000MHz | 25mA Maximum |
| **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 |
| **Output Voltage Logic High ($V_{OH}$)** | $I_{OH}$ = -4mA | 90% of $V_{DD}$ Minimum |
| **Output Voltage Logic Low ($V_{OL}$)** | $I_{OL}$ = +4mA | 10% of $V_{DD}$ Maximum |
| **Rise Time / Fall Time ($T_R$/$T_F$)** | 1.000MHz to 39.999MHz, 10% to 90% of Waveform | 6nSeconds Maximum |
| | 40.000MHz to 79.999MHz, 10% to 90% of Waveform | 4nSeconds Maximum |
| | 80.000MHz to 125.000MHz, 10% to 90% of Waveform | 3nSeconds Maximum |
| **Duty Cycle (SYM)** | at 50% of Waveform | 50 ±10(%) (Standard) |
| | at 50% of Waveform | 50 ±5(%) (Optional) |
| **Load Drive Capability ($C_{LOAD}$)** | | 15pF Maximum |
| **Tri-State Input Voltage** | No Connection | Enables Output |
| | $V_{IH}$: ≥90% of $V_{DD}$ | Enables Output |
| | $V_{IL}$: ≤10% of $V_{DD}$ | Disables Output: High Impedance |
| **Standby Current** | Disabled Output: High Impedance | 10µA Maximum |
| **Start Up Time ($T_S$)** | | 10mSeconds Maximum |
| **RMS Phase Jitter** | 12kHz to 20MHz offset frequency | 1pSeconds Maximum |

| MANUFACTURER | CATEGORY | SERIES | PACKAGE | VOLTAGE | CLASS | REV. DATE |
|---|---|---|---|---|---|---|
| ECLIPTEK CORP. | OSCILLATOR | EC29 | CERAMIC | 1.8V | OS1B | 11/10 |

# PART NUMBERING GUIDE

**EC29 00 ET T TS - 30.000M TR**

**FREQUENCY TOLERANCE / STABILITY**
00 = ±100ppm Maximum
45 = ±50ppm Maximum
25 = ±25ppm Maximum
20 = ±20ppm Maximum

**OPERATING TEMPERATURE RANGE**
Blank = -10°C to +70°C
ET = -40°C to +85°C

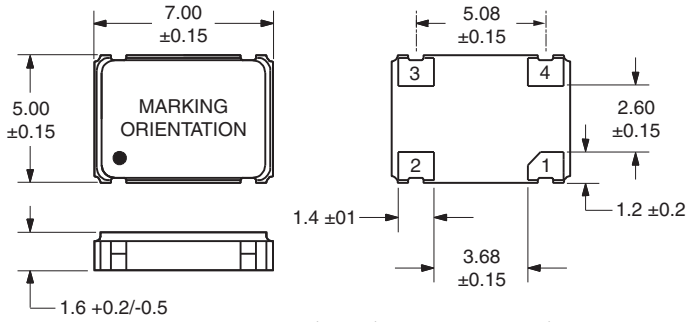
**PACKAGING OPTIONS**
Blank = Bulk
TR = Tape & Reel

**FREQUENCY**

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

## MECHANICAL DIMENSIONS

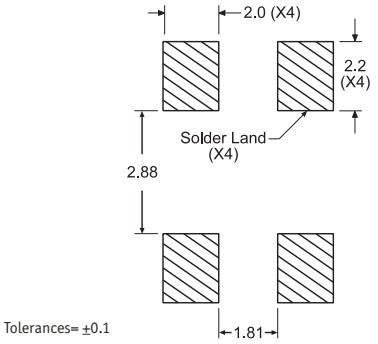
ALL DIMENSIONS IN MILLIMETERS




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

## SUGGESTED SOLDER PAD LAYOUT

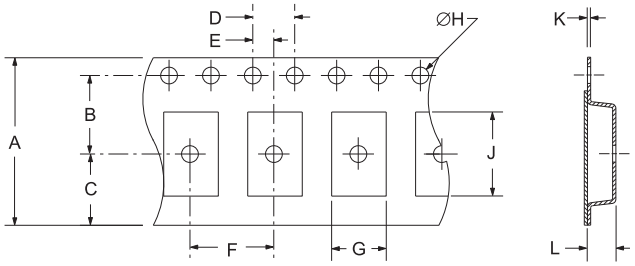
ALL DIMENSIONS IN MILLIMETERS

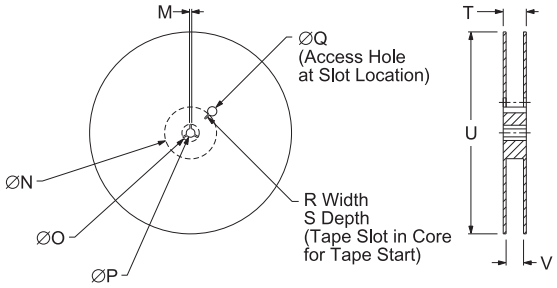



Tolerances= ±0.1

## TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS




| TAPE | A | B | C | D | E |
|---|---|---|---|---|---|
| | 16±.3-.1 | 7.5±.1 | 6.75±.1 | 4 ±.1 | 2±.1 |
| F | G | H | J | K | L |
| 8±.1 | B0* | 1.5 +.1-0 | A0* | .3 ±.05 | 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 | 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: XX Y ZZ
- Week of Year
- Last Digit of Year
- Ecliptek Manufacturing Identifier

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