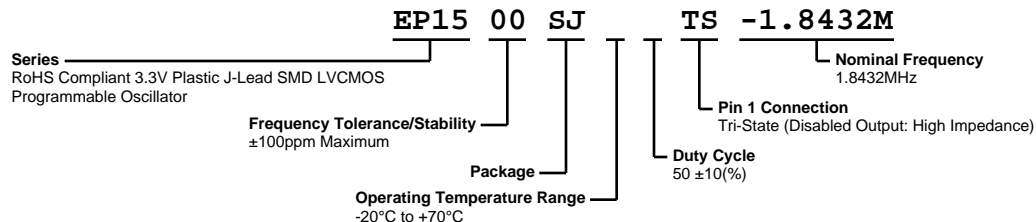


# EP1500SJTS-1.8432M



## ELECTRICAL SPECIFICATIONS

|                                   |   |
|-----------------------------------|---|
| Nominal Frequency                 | 1.8432MHz   |
| Frequency Tolerance/Stability     | $\pm 100$ ppm Maximum (Inclusive of all conditions: Calibration Tolerance at $25^{\circ}\text{C}$ , Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, First Year Aging at $25^{\circ}\text{C}$ , Shock, and Vibration) |
| Aging at $25^{\circ}\text{C}$     | $\pm 5$ ppm/year Maximum  |
| Operating Temperature Range       | $-20^{\circ}\text{C}$ to $+70^{\circ}\text{C}$  |
| Supply Voltage                    | 3.3Vdc $\pm 0.3$ Vdc  |
| Input Current                     | 28mA Maximum (Unloaded)   |
| Output Voltage Logic High (Voh)   | Vdd-0.4Vdc Minimum, IOH = -8mA  |
| Output Voltage Logic Low (Vol)    | 0.4Vdc Maximum, IOL +8mA  |
| Rise/Fall Time                    | 4nSec Maximum (Measured at 20% to 80% of waveform)  |
| Duty Cycle                        | $50 \pm 10\%$ (Measured at 50% of waveform)   |
| Load Drive Capability             | 30pF Maximum  |
| Output Logic Type                 | CMOS  |
| Pin 1 Connection                  | Tri-State (Disabled Output: High Impedance)   |
| Pin 1 Input Voltage (Vih and Vil) | 70% of Vdd Minimum to enable output, 20% of Vdd Maximum to disable output, No Connect to enable output.   |
| Standby Current                   | 20 $\mu$ A Maximum (Pin 1 = Ground)   |
| Disable Current                   | 16mA Maximum (Pin 1 = Ground)   |
| Absolute Clock Jitter             | $\pm 250$ pSec Maximum, $\pm 100$ pSec Typical  |
| One Sigma Clock Period Jitter     | $\pm 50$ pSec Maximum   |
| Start Up Time                     | 10mSec Maximum  |
| Storage Temperature Range         | $-55^{\circ}\text{C}$ to $+125^{\circ}\text{C}$   |

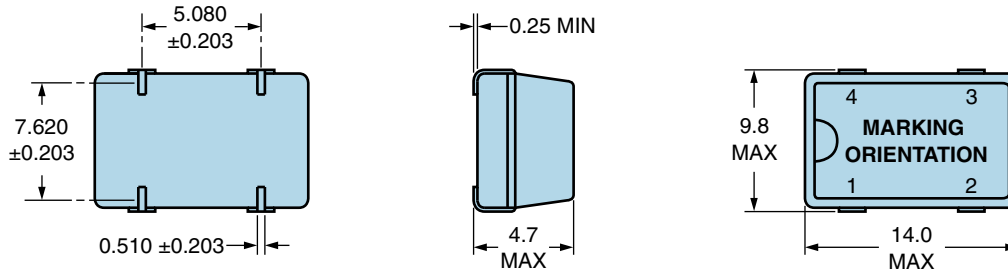
## ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

|                              |                                       |
|------------------------------|---------------------------------------|
| 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  |
| Resistance to Soldering Heat | MIL-STD-202, Method 210               |
| Resistance to Solvents       | MIL-STD-202, Method 215               |
| Solderability                | MIL-STD-883, Method 2003              |
| Temperature Cycling          | MIL-STD-883, Method 1010              |
| Vibration                    | MIL-STD-883, Method 2007, Condition A |

# EP1500SJTS-1.8432M



## MECHANICAL DIMENSIONS (all dimensions in millimeters)



| PIN | CONNECTION                 |
|-----|----------------------------|
| 1   | Tri-State (High Impedance) |
| 2   | Ground                     |
| 3   | Output                     |
| 4   | Supply Voltage             |

| LINE | MARKING  |
|------|--|
| 1    | <b>ECLIPTEK</b>  |
| 2    | <b>1.8432M</b>   |
| 3    | <b>PXXYZZ</b><br><i>P=Configuration Designator</i><br><i>XX=Ecliptek Manufacturing Code</i><br><i>Y=Last Digit of the Year</i><br><i>ZZ=Week of the Year</i> |

## Suggested Solder Pad Layout

All Dimensions in Millimeters



All Tolerances are  $\pm 0.1$

# EP1500SJTS-1.8432M

## OUTPUT WAVEFORM & TIMING DIAGRAM



### Test Circuit for CMOS Output



Note 1: An external 0.1 $\mu$ F low frequency tantalum bypass capacitor in parallel with a 0.01 $\mu$ F high frequency ceramic bypass capacitor close to the package ground and  $V_{DD}$  pin is required.

Note 2: A low capacitance (<12pF), 10X attenuation factor, high impedance (>10Mohms), and high bandwidth (>300MHz) passive probe is recommended.

Note 3: Capacitance value  $C_L$  includes sum of all probe and fixture capacitance.

## Recommended Solder Reflow Methods



### Low Temperature Infrared/Convection 240°C

|  |  |
|--|--|
| <b>T<sub>s</sub> MAX to T<sub>L</sub> (Ramp-up Rate)</b> | 5°C/second Maximum                                     |
| <b>Preheat</b>   |  |
| - Temperature Minimum (T <sub>s</sub> MIN)               | N/A  |
| - Temperature Typical (T <sub>s</sub> TYP)               | 150°C  |
| - Temperature Maximum (T <sub>s</sub> MAX)               | N/A  |
| - Time (t <sub>s</sub> MIN)                              | 60 - 120 Seconds                                       |
| <b>Ramp-up Rate (T<sub>L</sub> to T<sub>P</sub>)</b>     | 5°C/second Maximum                                     |
| <b>Time Maintained Above:</b>                            |  |
| - Temperature (T <sub>L</sub> )                          | 150°C  |
| - Time (t <sub>L</sub> )                                 | 200 Seconds Maximum                                    |
| <b>Peak Temperature (T<sub>P</sub>)</b>                  | 240°C Maximum  |
| <b>Target Peak Temperature (T<sub>P</sub> Target)</b>    | 240°C Maximum 1 Time / 230°C Maximum 2 Times           |
| <b>Time within 5°C of actual peak (t<sub>p</sub>)</b>    | 10 seconds Maximum 2 Times / 80 seconds Maximum 1 Time |
| <b>Ramp-down Rate</b>                                    | 5°C/second Maximum                                     |
| <b>Time 25°C to Peak Temperature (t)</b>                 | N/A  |
| <b>Moisture Sensitivity Level</b>                        | Level 1  |

### Low Temperature Manual Soldering

185°C Maximum for 10 seconds Maximum, 2 times Maximum.

### High Temperature Manual Soldering

260°C Maximum for 5 seconds Maximum, 2 times Maximum.