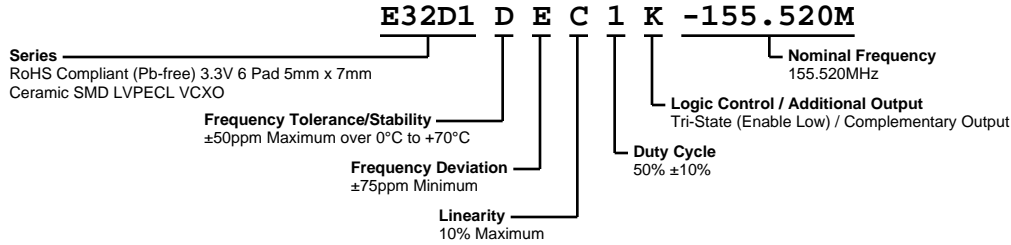


E32D1DEC1K-155.520M



ELECTRICAL SPECIFICATIONS

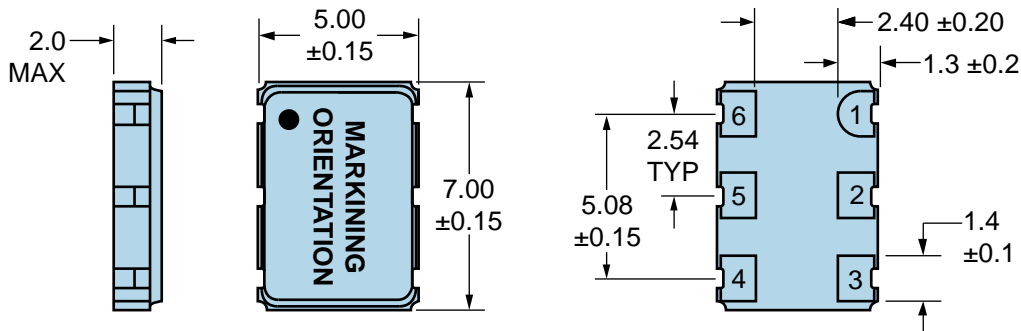
| | |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal Frequency | 155.520MHz |
| Frequency Tolerance/Stability | ± 50 ppm Maximum over 0°C to +70°C (Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, 1st Year Aging at 25°C, Shock, and Vibration.) |
| Supply Voltage | 3.3Vdc \pm 5% |
| Input Current | 100mA Maximum (with Load) |
| Output Voltage Logic High (Voh) | Vcc-1.025Vdc Minimum |
| Output Voltage Logic Low (Vol) | Vcc-1.620Vdc Maximum |
| Rise/Fall Time | 1.5nSec Maximum (Measured over 20% to 80% of waveform) |
| Duty Cycle | 50% \pm 10% (Measured at 50% of waveform) |
| Load Drive Capability | 50 Ohms into Vcc-2.0Vdc |
| Output Logic Type | LVPECL |
| Control Voltage | 1.65Vdc \pm 1.65Vdc (Test Conditions for Frequency Deviation) |
| Control Voltage Range | 0.0Vdc to Vcc +0.5Vdc |
| Frequency Deviation | ± 75 ppm Minimum (Inclusive of Operating Temperature Range, Supply Voltage, and Load) |
| Linearity | 10% Maximum |
| Transfer Function | Positive Transfer Characteristic |
| Modulation Bandwidth | 10kHz Minimum (Measured at -3dB with a control voltage of +1.65Vdc) |
| Input Impedance | 50kOhms Typical |
| Phase Noise | -55dBc/Hz at 10Hz offset, -90dBc/Hz at 100Hz offset, -120dBc/Hz at 1kHz offset, -140dBc/Hz at 10kHz offset, -145dBc/Hz at 100kHz offset, -148dBc/Hz at 1MHz (Typical Values, Fo=155.520MHz) |
| Logic Control / Additional Output | Tri-State (Enable Low) / Complementary Output |
| Tri-State Input Voltage (Vih and Vil) | Vih of 70% of Vcc Minimum to Disable Outputs (High Impedance), Vil of 30% of Vcc Maximum or No Connect to Enable Outputs |
| RMS Phase Jitter | 0.4pSec Typical, 1pSec Maximum (Fj=12kHz to 20MHz) |
| Accumulated Period Jitter (tacc) | 4pSec Typical, 5pSec Maximum Sigma of Total Jitter Distribution |
| Period Jitter (trj) | 3pSec Typical, 5pSec Maximum Sigma of Random Jitter |
| Period Jitter (trms) | 3pSec Typical, 5pSec Maximum Sigma of Total Jitter Distribution |
| Period Jitter (tdj) | 4pSec Typical, 10pSec Maximum Deterministic Jitter |
| Period Jitter (tp-p) | 27pSec Typical, 40pSec Maximum Peak to Peak of Jitter Distribution |
| Start Up Time | 10mSec Maximum |
| Storage Temperature Range | -55°C to +125°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 |

E32D1DEC1K-155.520M

MECHANICAL DIMENSIONS (all dimensions in millimeters)

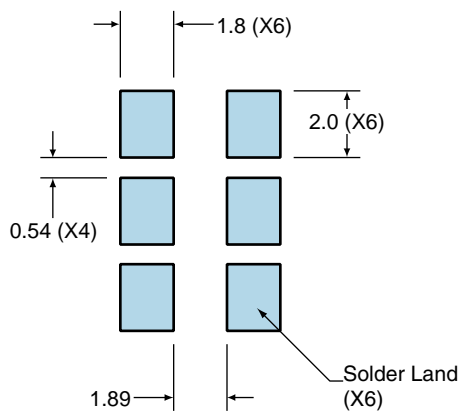


| PIN | CONNECTION |
|-----|----------------------|
| 1 | Voltage Control |
| 2 | Tri-State |
| 3 | Case/Ground |
| 4 | Output |
| 5 | Complementary Output |
| 6 | Supply Voltage |

| LINE | MARKING |
|------|---------------------------------------------------------------------------------------------------|
| 1 | ECLIPTEK |
| 2 | 155.52M |
| 3 | XXYZZ XX=Ecliptek Manufacturing Code Y=Last Digit of the Year ZZ=Week of the Year |

Suggested Solder Pad Layout

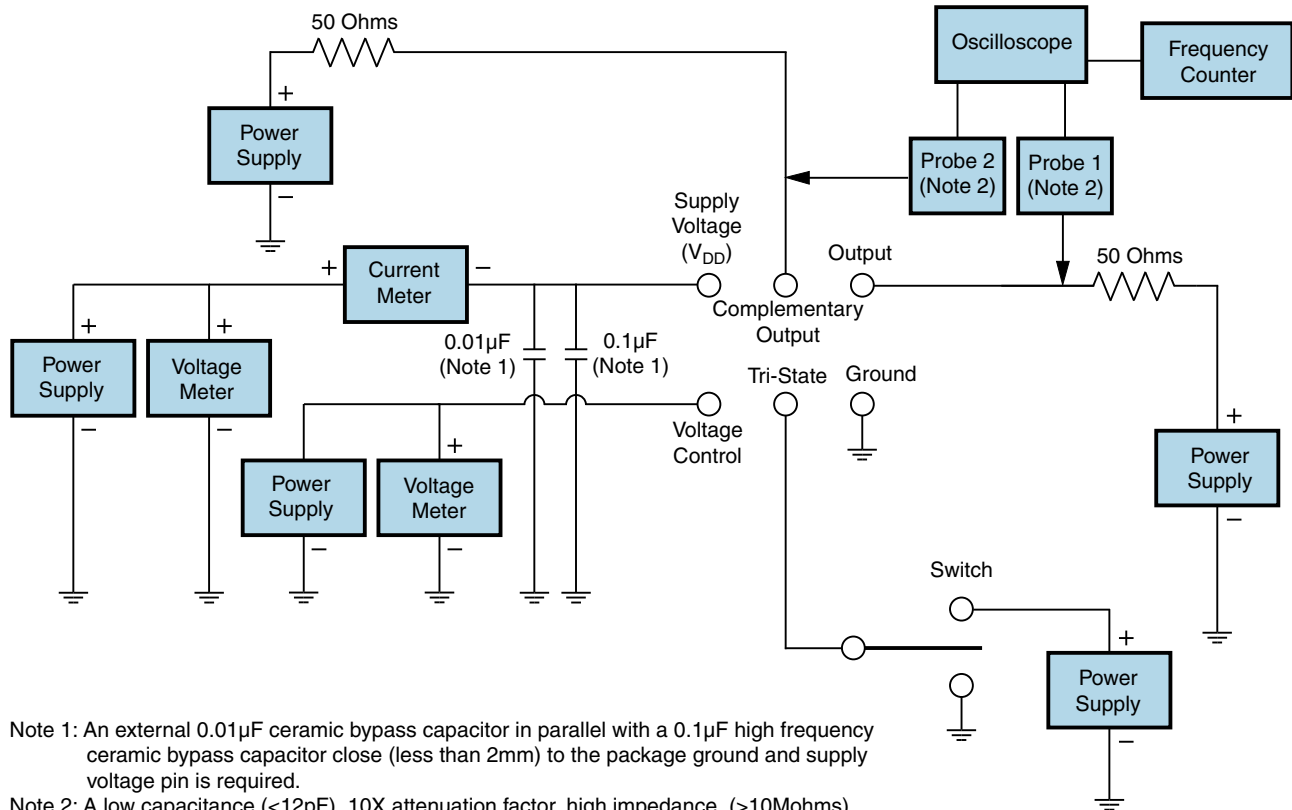
All Dimensions in Millimeters



All Tolerances are ±0.1

E32D1DEC1K-155.520M

Test Circuit for Tri-State and Complementary Output



Note 1: An external $0.01\mu\text{F}$ ceramic bypass capacitor in parallel with a $0.1\mu\text{F}$ high frequency ceramic bypass capacitor close (less than 2mm) to the package ground and supply voltage pin is required.

Note 2: A low capacitance ($<12\text{pF}$), 10X attenuation factor, high impedance ($>10\text{Mohms}$), and high bandwidth ($>500\text{MHz}$) passive probe is recommended.

Note 3: Test circuit PCB traces need to be designed for a characteristic line impedance of 50 ohms.

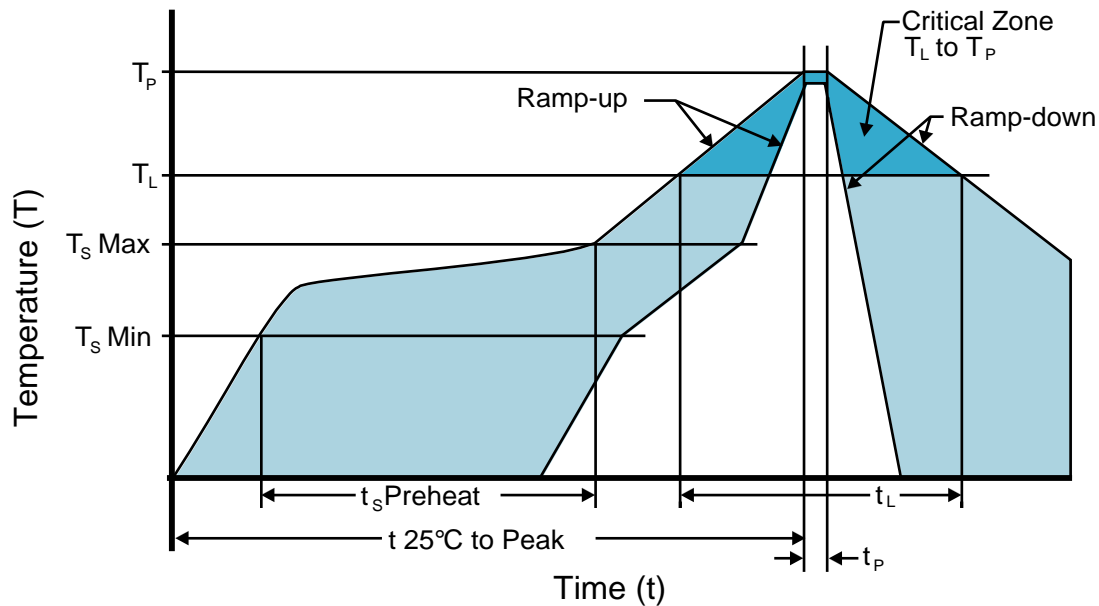
Recommended Solder Reflow Methods



High Temperature Infrared/Convection

| | |
|----------------------------------------------------------------|--------------------------------------|
| T_s MAX to T_L (Ramp-up Rate) | 3°C/second Maximum |
| Preheat | |
| - Temperature Minimum (T_s MIN) | 150°C |
| - Temperature Typical (T_s TYP) | 175°C |
| - Temperature Maximum (T_s MAX) | 200°C |
| - Time (t_s MIN) | 60 - 180 Seconds |
| Ramp-up Rate (T_L to T_p) | 3°C/second Maximum |
| Time Maintained Above: | |
| - Temperature (T_L) | 217°C |
| - Time (t_L) | 60 - 150 Seconds |
| Peak Temperature (T_p) | 260°C Maximum for 10 Seconds Maximum |
| Target Peak Temperature (T_p Target) | 250°C +0/-5°C |
| Time within 5°C of actual peak (t_p) | 20 - 40 seconds |
| Ramp-down Rate | 6°C/second Maximum |
| Time 25°C to Peak Temperature (t) | 8 minutes Maximum |
| Moisture Sensitivity Level | Level 1 |

Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 240°C

| | |
|----------------------------------------------------------------|--------------------------------------------------------|
| T_S MAX to T_L (Ramp-up Rate) | 5°C/second Maximum |
| Preheat | |
| - Temperature Minimum (T_S MIN) | N/A |
| - Temperature Typical (T_S TYP) | 150°C |
| - Temperature Maximum (T_S MAX) | N/A |
| - Time (t_S MIN) | 60 - 120 Seconds |
| Ramp-up Rate (T_L to T_P) | 5°C/second Maximum |
| Time Maintained Above: | |
| - Temperature (T_L) | 150°C |
| - Time (t_L) | 200 Seconds Maximum |
| Peak Temperature (T_P) | 240°C Maximum |
| Target Peak Temperature (T_P Target) | 240°C Maximum 1 Time / 230°C Maximum 2 Times |
| Time within 5°C of actual peak (t_p) | 10 seconds Maximum 2 Times / 80 seconds Maximum 1 Time |
| Ramp-down Rate | 5°C/second Maximum |
| Time 25°C to Peak Temperature (t) | N/A |
| Moisture Sensitivity Level | 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.