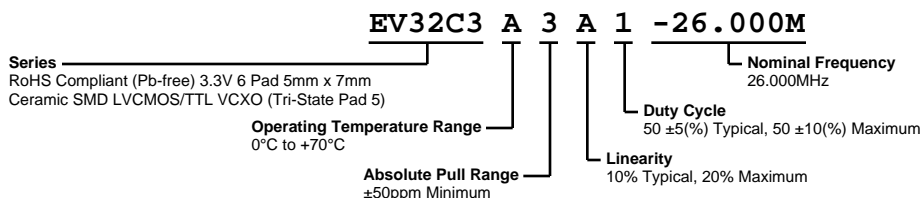


EV32C3A3A1-26.000M



ECLIPTEK
CORPORATION



ELECTRICAL SPECIFICATIONS

| | |
|---------------------------------------|--|
| Nominal Frequency | 26.000MHz |
| Frequency Tolerance/Stability | ±50ppm Maximum (Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, Shock, and Vibration.) |
| Aging at 25°C | ±2ppm/first year Typical, ±10ppm/10 years Maximum |
| Operating Temperature Range | 0°C to +70°C |
| Supply Voltage | 3.3Vdc ±10% |
| Input Current | 15mA Maximum |
| Output Voltage Logic High (Voh) | 90% of Vdd Minimum (IOH = -4mA) |
| Output Voltage Logic Low (Vol) | 10% of Vdd Minimum (IOL = +4mA) |
| Rise/Fall Time | 5nSec Maximum (Measured at 20% to 80% of Waveform) |
| Duty Cycle | 50 ±5(%) Typical, 50 ±10(%) Maximum (Measured at 50% of Waveform) |
| Load Drive Capability | 15pF LVCMOS Load Maximum |
| Output Logic Type | CMOS |
| Absolute Pull Range | ±50ppm Minimum (Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, Shock, Vibration, and Aging over the Control Voltage (Vc).) |
| Control Voltage | 0.3Vdc to 3.0Vdc (Test Condition for APR) |
| Control Voltage Range | 0.0Vdc to Vdd |
| Linearity | 10% Typical, 20% Maximum |
| Transfer Function | Positive Transfer Characteristic |
| Modulation Bandwidth | 10kHz Minimum (Measured at -3dB, Vc = 1.65Vdc) |
| Input Impedance | 50kOhms Minimum |
| Input Leakage Current | 10µA Maximum |
| Phase Noise | -70dBc/Hz at offset of 10Hz, -100dBc/Hz at offset of 100Hz, -130dBc/Hz at offset of 1kHz, -147dBc/Hz at offset of 10kHz, -152dBc/Hz at offset of 100kHz, and -155dBc/Hz at offset of 1MHz (Typical Values at Fo = 27MHz) |
| Tri-State Input Voltage (Vih and Vil) | +0.9Vdd Minimum to Enable Output; +0.1Vdd Maximum to Disable Output (High Impedance); No Connect to Enable Output. |
| RMS Phase Jitter | 1pSec Maximum (Fj = 12kHz to 20MHz) |
| Start Up Time | 10mSec Maximum |
| Storage Temperature Range | -55°C to +125°C |

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

| | |
|------------------------------|---|
| 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 |

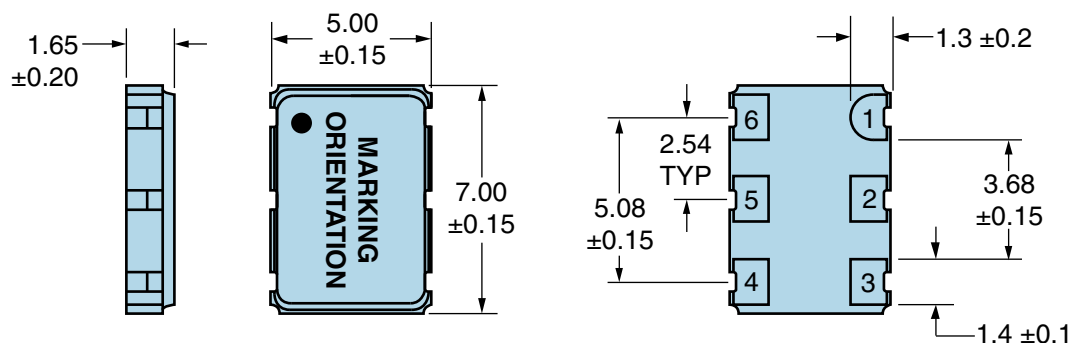
EV32C3A3A1-26.000M

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

Vibration

MIL-STD-883, Method 2007, Condition A

MECHANICAL DIMENSIONS (all dimensions in millimeters)

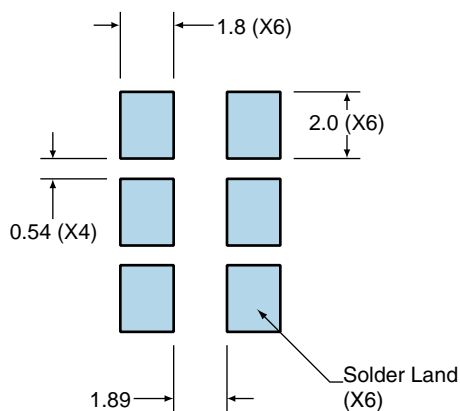


| PIN | CONNECTION |
|-----|-----------------|
| 1 | Control Voltage |
| 2 | No Connect |
| 3 | Case Ground |
| 4 | Output |
| 5 | Tri-State |
| 6 | Supply Voltage |

| LINE | MARKING |
|------|--|
| 1 | ECLIPTEK |
| 2 | 26.000M |
| 3 | XXYYZZ XX=Ecliptek Manufacturing Code Y=Last Digit of Year ZZ=Week of Year |

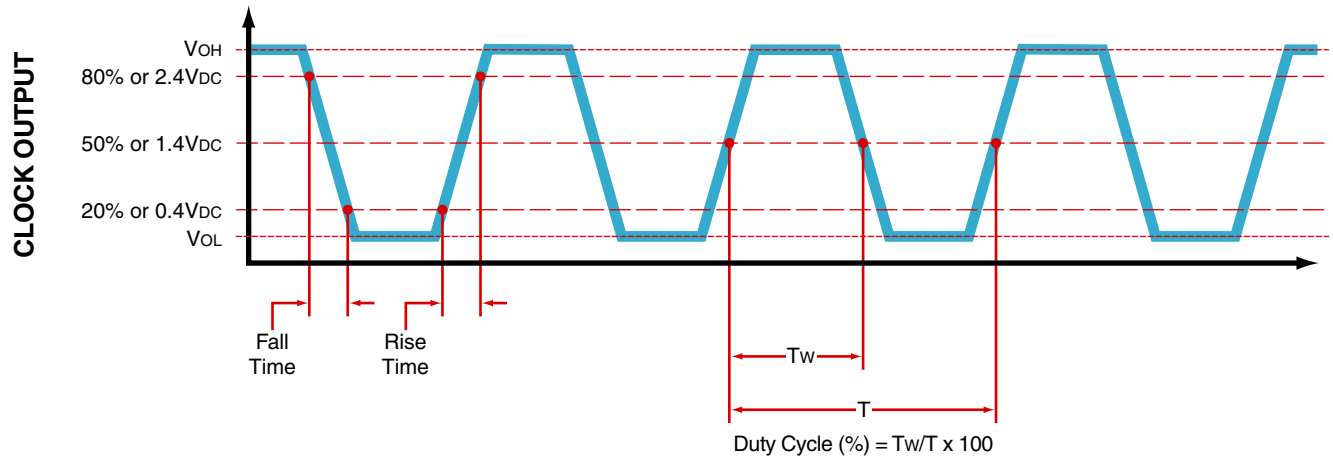
Suggested Solder Pad Layout

All Dimensions in Millimeters

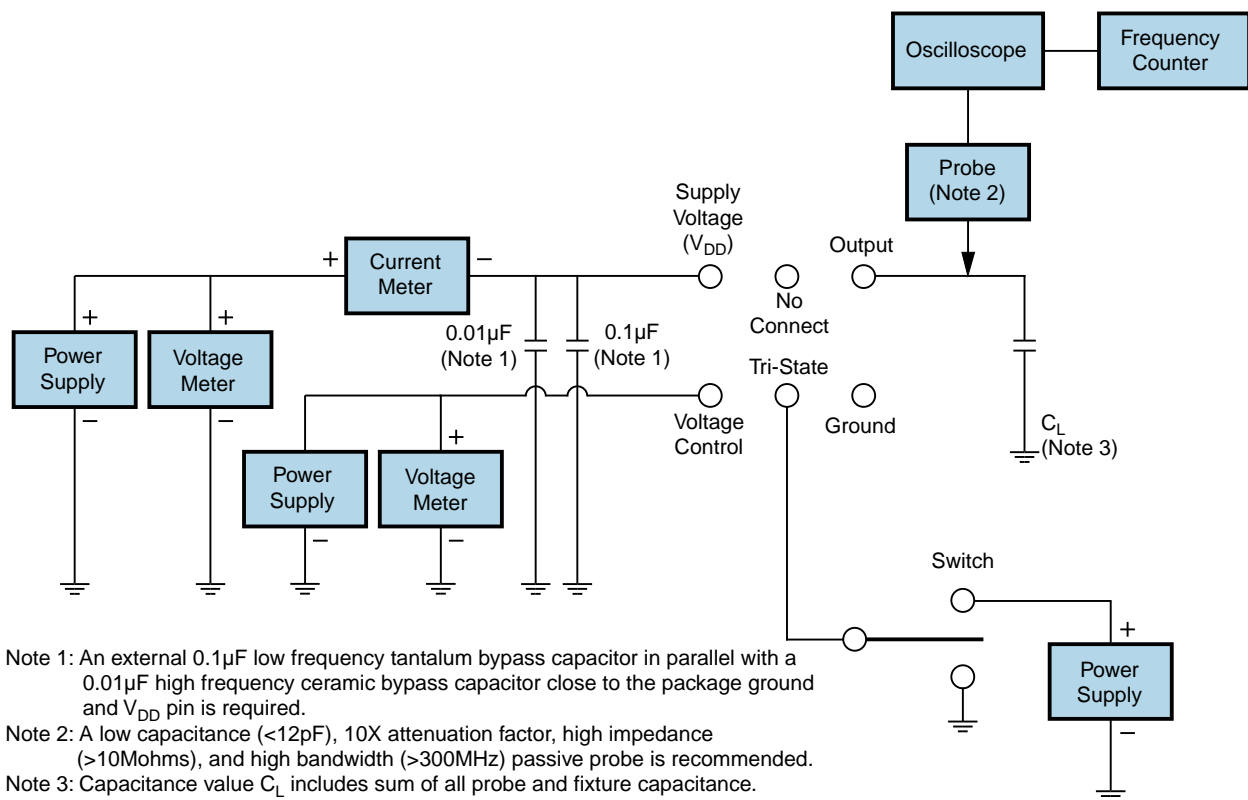


All Tolerances are ± 0.1

OUTPUT WAVEFORM



Test Circuit for CMOS Output

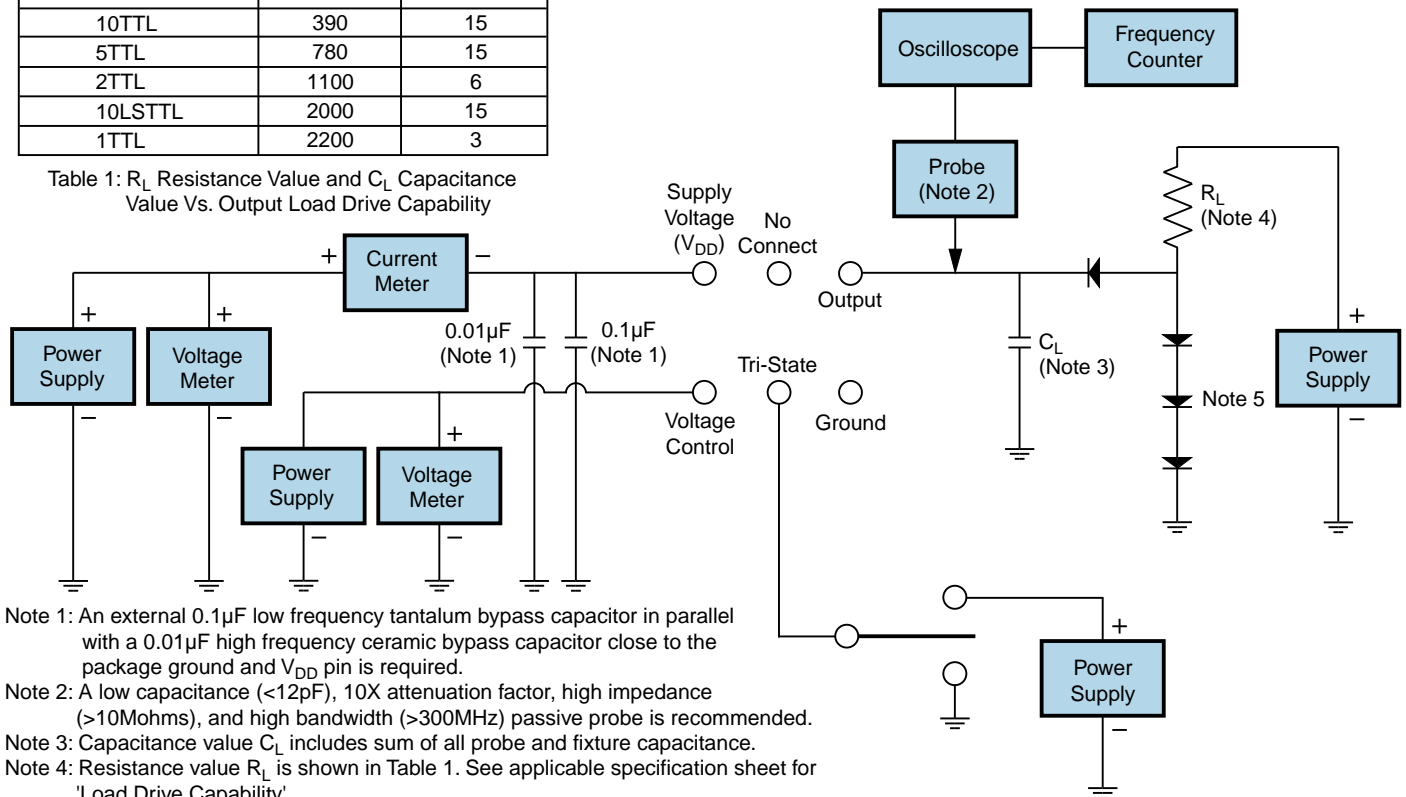


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Test Circuit for TTL Output

| Output Load Drive Capability | R_L Value (Ohms) | C_L Value (pF) |
|------------------------------|--------------------|------------------|
| 10TTL | 390 | 15 |
| 5TTL | 780 | 15 |
| 2TTL | 1100 | 6 |
| 10LSTTL | 2000 | 15 |
| 1TTL | 2200 | 3 |

Table 1: R_L Resistance Value and C_L Capacitance Value Vs. Output Load Drive Capability



Note 1: An external 0.1 μ F low frequency tantalum bypass capacitor in parallel with a 0.01 μ 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.

Note 4: Resistance value R_L is shown in Table 1. See applicable specification sheet for 'Load Drive Capability'.

Note 5: All diodes are MMBD7000, MMBD914, or equivalent.

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.