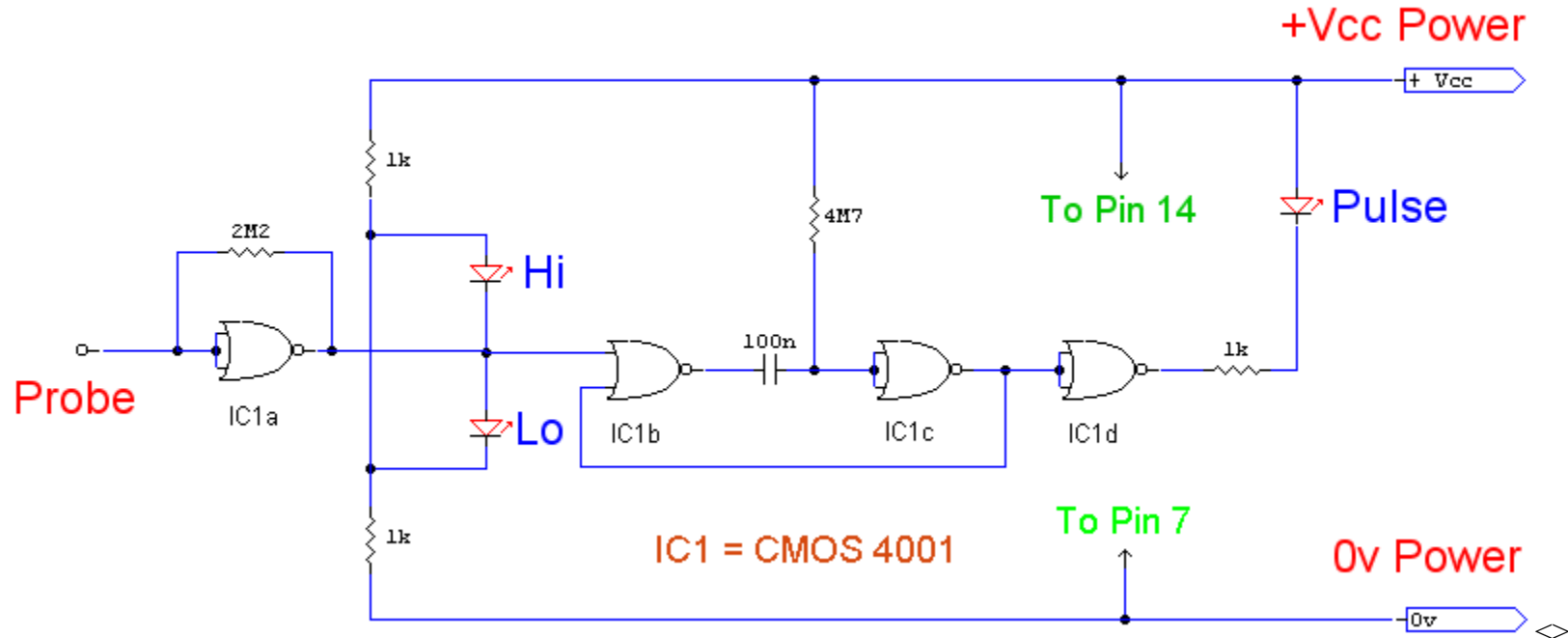


# Logic Probe



## Notes:

This logic probe uses a single CMOS IC and shows three logic conditions, High, Low and Pulsing. In addition if the probe input is neither hi or low (the high impedance state of tri-output logic ic's) then no LED's will light. Power from the logic probe is taken from the logic circuit under test; using a CMOS IC enables logic circuits to be tested using voltages from 3 to 15 volts. IC1a is arranged as a buffer with a difference. Under no input, i.e. probe not connected to circuit the gate will oscillate due to feedback from the 2M2

resistor. Output voltage at IC1a is approximately half supply voltage. The Hi and Lo logic indicator LED's are also connected to a potential divider consisting of the two 1k resistors. Voltage at the junction is half supply voltage hence with no input, or high impedance no LED's will light. A Hi or Lo logic condition will cause IC1a to rest in a permanent state indicated by either the Hi or Lo LED illuminating. With a fast oscillator or clock signal both Hi and Lo LED's will light but will be quite dim. This is the reason for IC1b and IC1c. These two gates form a monostable oscillator, time constant determined by the 100nF capacitor and 4M7 resistor. With a clock signal this is effectively slowed as the monostable is continually triggered and retriggered. IC1d acts as a buffer to drive the pulsing LED.

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