

Single LED Indicates Two Power States

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The circuit in Fig. 1 uses a single bicolor LED to indicate both power-on and blown-fuse conditions. Regardless of the condition of the fuse, the green side of the LED is always on for each positive half-cycle of the ac input. With a 120Vrms ac input the average diode current is a little more than 10mA. If the fuse is good, current cannot flow through the red side because the good fuse shorts out this side.

If the fuse is blown, the ac mains voltage is across the fuse terminals. This condition allows current to flow through the red side of the LED during the negative half cycle of the ac input. The result is a yellow LED. There are some losses in the transformer, but you can adjust the current setting resistor on the red side of the LED for best color.

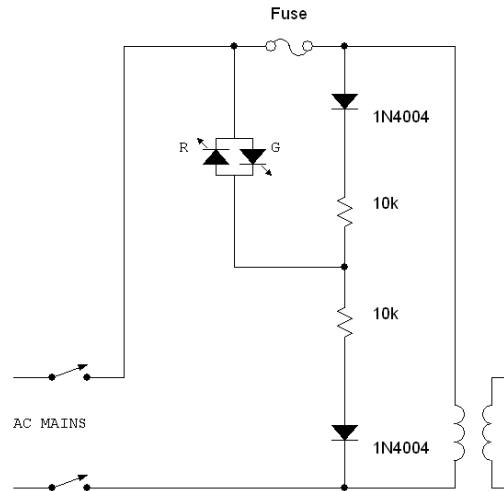


Fig. 1. This bicolor LED glows green with power-on but yellow with a blown fuse.