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# fuse indicator

In this circuit, the neon indicator lamp shows whether or not the power is on and whether or not the fuse is blown.

As long as the power is on and the fuse is intact, the neon lamp will draw current through the fuse, D2 and the built-in series resistor. It will burn brightly to indicate that all is well.

If the fuse is blown, however, current can only flow through D1 and R1. This current will charge C1 until the ignition voltage of the neon lamp is reached. The lamp will light up. It will now draw enough current to discharge C1 until the extinction voltage is reached, whereupon the lamp will go out again. C1 recharges through R1, and the cycle repeats. The result is that the neon lamp will flash continuously as long as the power is on.

The only critical points in this circuit are the resistors. The value of R1 must be so large that current flowing through this resistor into the neon lamp is insufficient to keep it ignited. On the other hand, the built-in resistor should be small enough to discharge C1 fairly rapidly but not so small that the lamp will 'burn out' when fed directly through D2 (actually, a neon lamp doesn't burn out - it can progressively darken as the electrode material 'migrates' to the inside of the glass envelope).

