

Fleapower circuit detects short circuits

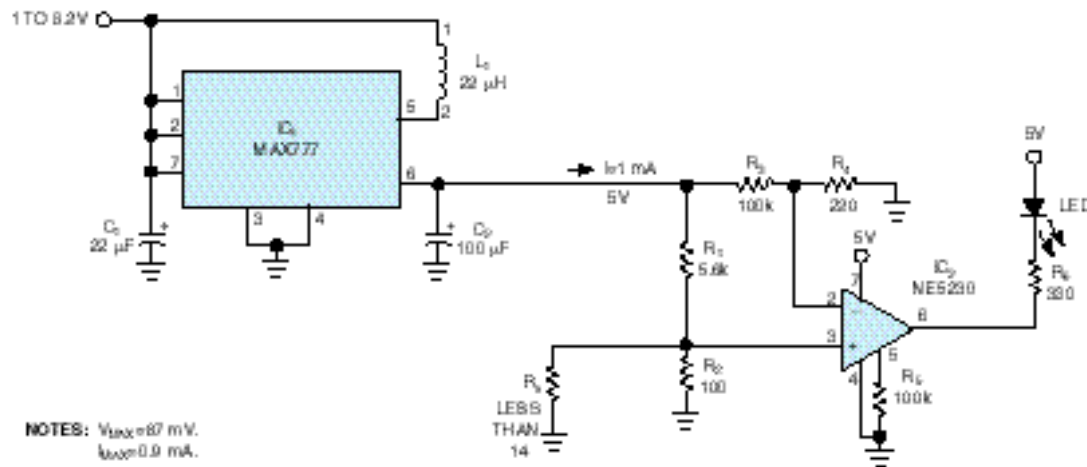
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Sometimes, the need arises for a short-circuit tester that supplies a low current to the device under test (DUT) and also uses voltages lower than 100 mV to prevent conduction of semiconductors. The circuit in **Figure 1** meets these requirements. R_1 limits the current in the DUT to 0.9 mA. The voltage on the DUT can not exceed the value set by the ratio $R_2/(R_1+R_2)$. The NE5230 micropower op amp compares the voltage on R_x (representing the DUT) with the voltage at the

junction of R_3 and R_4 . You can adjust the op amp's supply current by trimming R_5 ; in this circuit, the current is 0.1 mA. If the value of R_x falls below 14Ω , the output of the op amp switches low and the LED illuminates. The circuit derives its power from a 1.5V battery. IC_1 converts the battery voltage to 5V. (DI #2216) EDN

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FIGURE 1



This short-circuit detector uses little power, and provides low currents and voltages to avoid damage to the device under