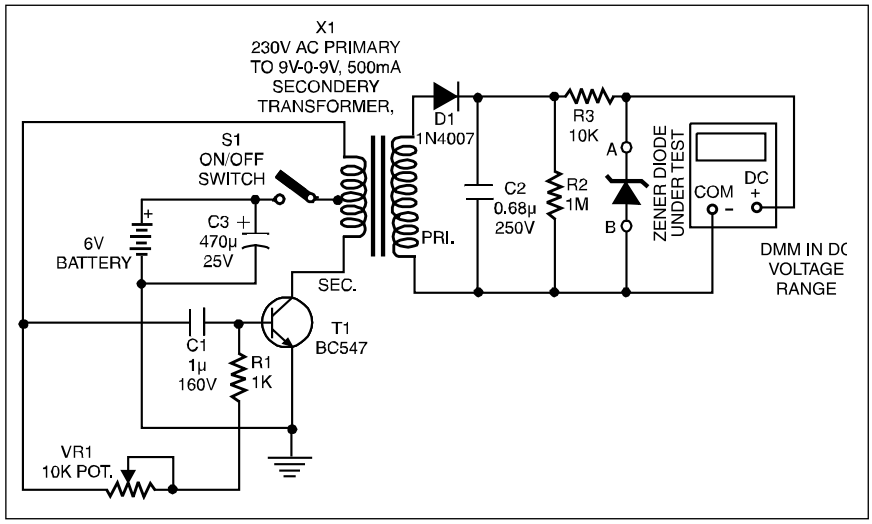
HANDY ZENER DIODE TESTER

Here is a handy zener diode tester which tests zener diodes with breakdown voltages extending up to 120 volts. The main advantage of this circuit is that it works with a voltage as low as 6V DC and consumes less than 8 mA current.

The circuit can be fitted in a 9V battery box. Two-third of the box may be used for four 1.5V batteries and the remaining one-third is sufficient for accommodating this circuit. In this circuit a commonly available transformer with 230V AC primary to 9-0-9V, 500mA secondary is used in reverse to achieve higher AC voltage across 230V AC terminals.

Transistor T1 (BC547) is configured as an oscillator and driver to obtain required AC voltage across transformer's 230V AC terminals. This AC voltage is converted to DC by diode D1 and filter capacitor C2 and is used to test the zener diodes. R3 is used as a series current limiting resistor.



After assembling the circuit, check DC voltage across points A and B without connecting any zener diode. Now switch S1 on. The DC voltage across A-B should vary from 10V to 120V by adjusting potmeter VR1 (10k). If every thing is all right, the circuit is ready for use.

For testing a zener diode of unknown value, connect it across points A and B with cathode towards A. Adjust potmeter VR1 so as to obtain the maximum DC voltage across A and B. Note down this zener value corresponding to DC voltage reading on the digital multimeter.

When testing zener diode of value less than 3.3V, the meter shows less voltage instead of the actual zener value. However, correct reading is obtained for zener diodes of value above 5.8V with a tolerance of ±10 per cent. In case zener diode shorts, the multimeter shows 0 volts.