

Circuit is

Make your description of a new circuit concise and say how it is an improvement over previously-published circuits, preferably in the first sentence. We pay £5 for published circuits.

Simple breakdown voltage meter

The circuit will test the V_{CBO} , V_{CEO} and V_{EBO} breakdown voltage of most types of transistors, small signal or power; V_Z of zener diodes and the reverse breakdown voltage of small power diodes. It should fit easily into most instruments which lack this facility with little modification.

Power is supplied by two small 90-V batteries in series. Resistor R_1 biases the upper transistor into conduction and voltage is applied to the junction under test.

As this breaks down current flows in R_2 causing the lower transistor to conduct, with a consequent drop in base voltage of the upper one. Thus R_2 may be used to set I_{BR} over a fairly wide range, enabling the user to study the effects of different current (on V_{CEO} breakdown in particular). The voltmeter reads V_{BR} plus the drop across R_2 which is small and can be neglected. Transistors of type BD115 are used but other high voltage types, e.g. MJE340 could be used.

J. W. Brown,
Gateshead, Co. Durham.

