WINPOWER CORPORATION

BULLETIN NO. #48

SUBJECT: Procedure for Testing Diode & Rectifier

DATE: 11-12-76

ENGINEERING TECHNICAL BULLETIN

Diode is a semi-conductor device that will allow current to flow through itself in one direction only. Symbols for a single diode and a four-diode bridge are shown in Figures 1 and 2, respectively.

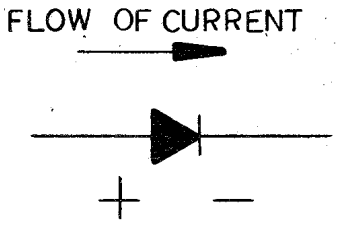

Figure 1 Diode

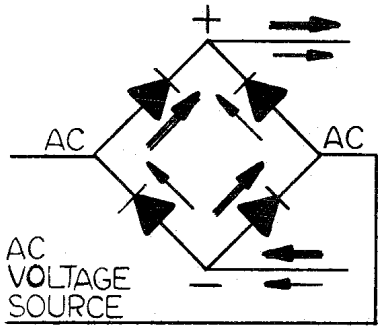

Figure 2. 4 Diode Bridge

When used as a rectifier, diode is connected in series with the AC voltage source and the load.

Diode has a very low resistance to current in one direction (called forward resistance) and a very high (almost infinite) resistance to current in the opposite direction.

Figure 3 shows a bridge rectifier used for full wave rectification.

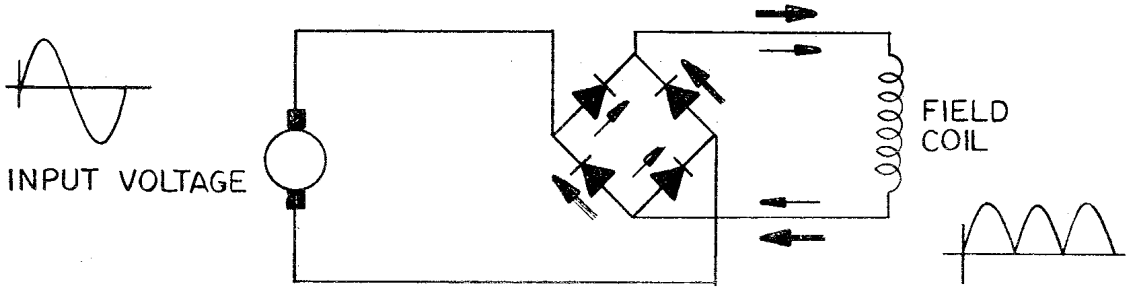

Figure 3
4 Diode Bridge Rectifier
Circuit For Full Wave Rectification

Testing Of A Single Diode

1. Connect red lead to positive terminal of diode and black lead to negative terminal of a diode.
   a. Good diode will read between 7 and 15 Ohm.
   b. An infinite reading shows an open diode.
   c. A zero reading shows a short diode.
2. In the absence of B & C reverse the leads on diode, a good diode should read open circuit i.e. infinite reading.

Testing Of Rectifier Assembly

Remove the lead from the positive terminal and one of the leads going to AC terminal of the bridge, when testing a bridge installed in the generator.

1. Connect black lead of meter to positive (+) terminal of bridge and red lead to one of the AC terminals of bridge - meter should read about 25 Ohm.
2. Now, reverse the leads on bridge terminals - meter should read open circuit or infinite resistance.
3. Connect black lead of meter to positive (+) terminal and red lead to other AC terminal of bridge. Meter should read about 25 Ohm.
4. Now reverse the leads on bridge terminals - meter should read open circuit or infinite resistance.
5. Connect red lead of meter to negative (-) terminal of bridge and black lead to one of the AC terminals of the bridge. Meter should read about 25 Ohm.
6. Reverse the leads and you should read infinite resistance.
7. Connect red lead of meter to negative (-) terminal of the bridge and black lead of meter to other AC terminal of the bridge. Meter should read about 25 Ohm.
8. Now reverse the leads and you should observe infinite reading on your meter.

All eight steps are described for a good bridge.

A shorted diode will give zero resistance reading in both directions.

A low resistance reading of 2 Ohm or so will show leakage current and diode should be replaced.

An open diode will give a high resistance (infinite) reading in both directions.