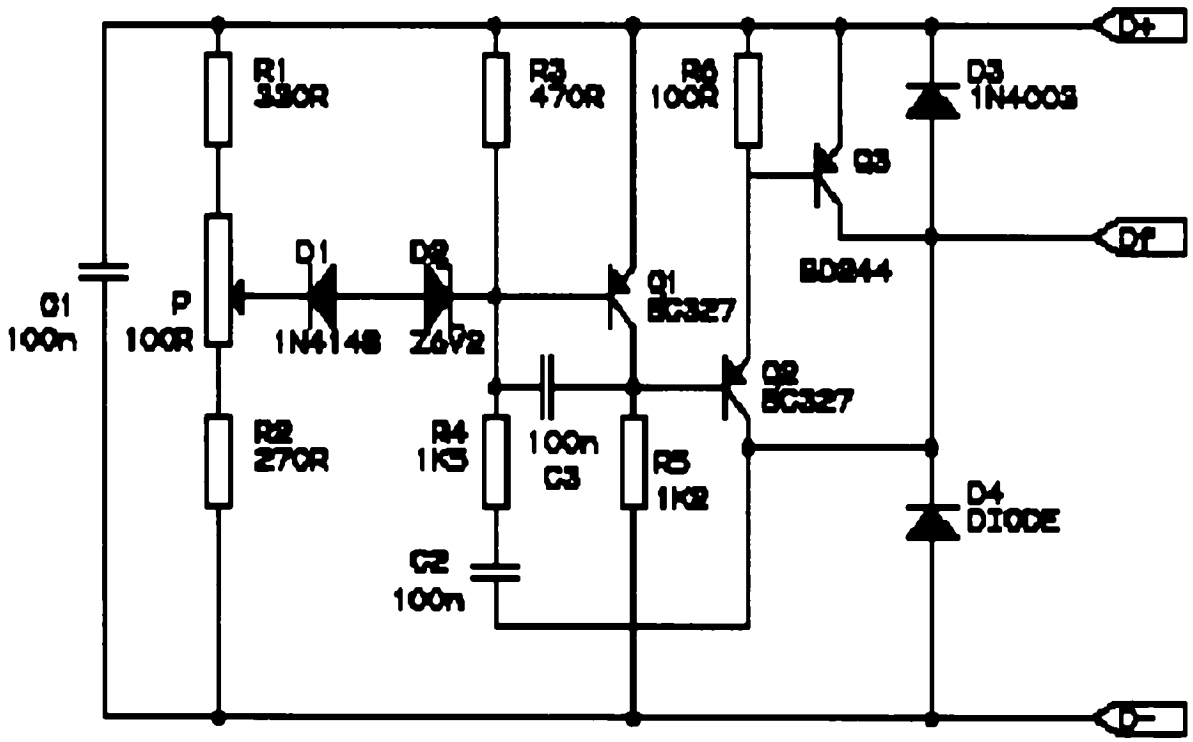
BMW R Series Motorcycle Regulator Schematic



PARTS:

R1 330
R2 270
R3 470
R4 1.5K
R5 1.2K
R6 100
P 100 ohm pot
C1, C2, C3 100nF ceramic
Q1,Q2 BC327
Q3 BD244A
D1 1N4148
D2 BZX6V2 zener, 6.2V
D3 1N4003
D4 no markings, but a 10A, 50V schottky should do the job here. Strangely enough, the diodes in my Siemens databooks that use this package go up to about 3A, which I consider a little low for this application (BY245, BY246).

From the wiring diagram in my manual:

D+

Goes to output of diode board and alternator telltale.

Df

Goes to one end of alternator rotor.

D –

Goes to the other end of the alternator rotor, and it may also go to bike ground through the case of the regulator.

Description:

Correctly adjusted, the voltage on the pot wiper is slightly less than half D+ (appx. 0.47*D+) and Q1 will conduct if (D+)-(Vp)>6.2+0.7+0.7, or 0.53*(D+) > 7.6V, (D+) > 14.3V. If D+ is lower than 13.7V, Q1 will not conduct, Q2 will get driven via R5, and Q3 will conduct. Df will carry a voltage. When D+ rises, Q1 will start conducting, Q2 will get pinched gradually, and so will Q3. Voltage on Df will drop.

This was originally investigated by Matt Bennett, but the diagram, functional description, and many corrections were done by Rik Steenwinkel, rsteenw@ibm.net or rik@apd.dec.com.

Revised on 10/3/95 by Matt Bennett