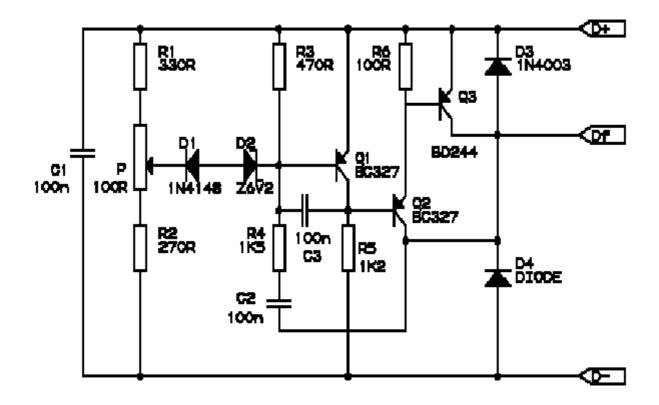
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R-Bike Regulator Schematic



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

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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, mjb@hazmat.com, 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