1. A zener diode is always operated in its reversed biased condition. As such a simple voltage regulator circuit can be designed using a zener diode to maintain a constant dc output voltage across the load in spite of variations in the input voltage or changes in the load current.

 


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1. MAXIMUM CURRENT=MAX POWER/VOLTAGE=5w/v=0.5A

V2=10 VOLTS

MAXIMUM RESISTANCE=VS-VZ/IZ

Vdc=0.637XMAX

 =0.637\*20

 =12.74Vdc

Minimum resistance=12.74-10/0.5

 =5.48Ω

II)Load current IL=VZ/RL =

 =10/500

 =0.02A or 20Ma

 IZ=IS-IL

 =500-20

=480mA