

Webcasts. Application Notes. Tutorials. Design Tools.

ANALOG DEVICES
click here to view

PartFinder™ by **GLOBALSPEC** Search Over **30 Million Parts.** FIND:

Web **DiscoverCircuits.com**



DiscoverCircuits.com, has **30,000+** **electronic circuits**, cross-referenced into 500+ categories. We have searched the web to help you find quick design ideas. We make every effort to link to material posted by the designer. Please let us if you would like us to link to or post your design.

HOME Schematics Discover Forum Hobby Corner Dave's Circuits Electronic Resources Book Corner Contact Info
 Imagineering Ezine [Discover Solar Energy](#) Dave Johnson & Associates Faraday Touch Switches

Circuit Solutions Notebook

Last Updated On: Saturday October 23, 2010

DC/DC Converter Custom and Standard DC/DC solutions Specification and Selection Guide www.calex.com

Voltage Regulator Module SIMPLE SWITCHER® Power Modules Easy to use, highly efficient National.com/switcher_powe

Allied Electronics Over 1.2 Million Electronics Parts, Components and Equipment. www.AlliedElec.com

Ads by Google

[Latest Technical Challenge](#)

[Previous Circuits Solutions](#)

[Circuit Solutions in Progress](#)

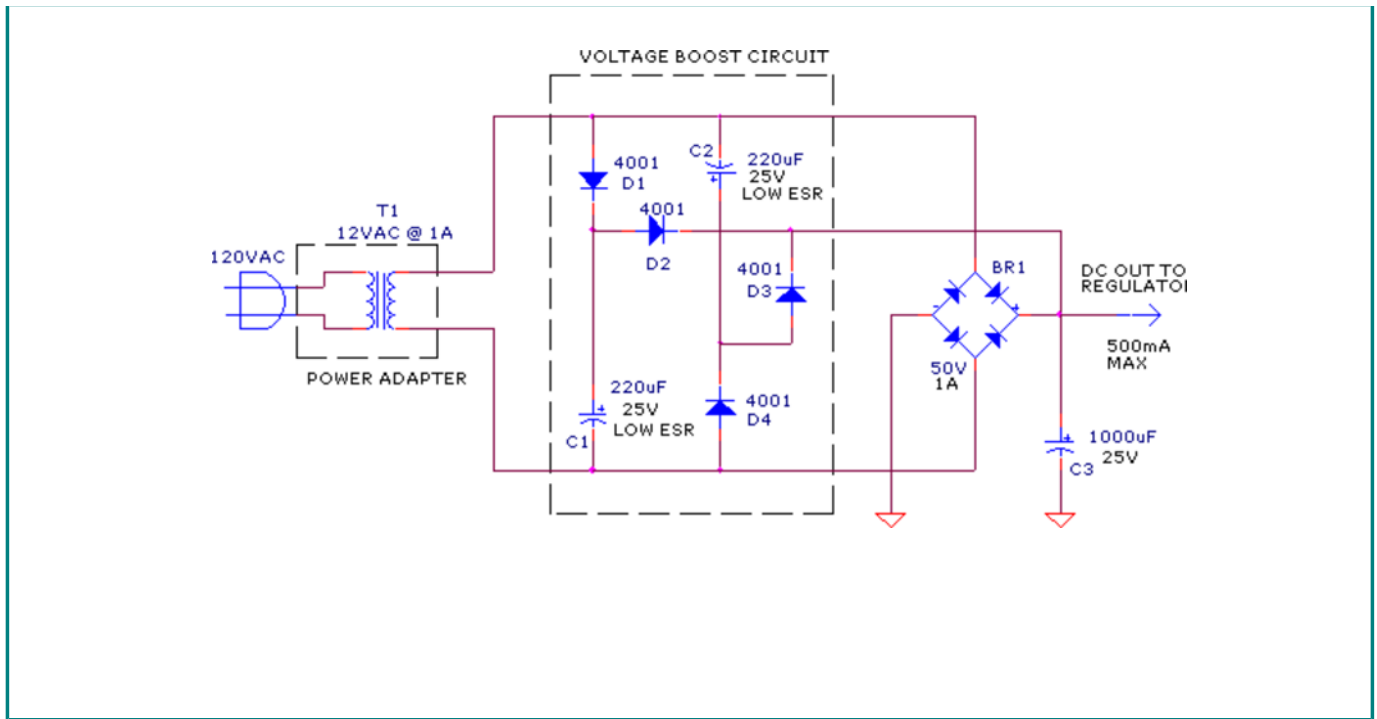
Voltage Boost Circuit

Challenge:

Design a circuit that will give a marginal AC to DC linear power supply a voltage boost, so it can maintain regulation at low line voltages.

Solution:

I solved this problem many years ago with the circuit shown below. The added components are wired at the AC input and the + DC output of an existing bridge rectifier circuit. The components act as a full wave "charge pump" which will boost the DC output voltage across the main filter capacitor C3. Without the boost circuit, when the AC line voltage drops to 105vac, the DC output voltage only reaches 11.5 volts, too low for a 12v voltage regulator. With the parts added, the output voltage increases by about 2 volts, boosting the voltage to 13.5 volts. This is just enough for many low voltage drop 12 volt regulators. Since a fair amount of current is pumped in and out of the 220uF caps, they should be the type rated for high ripple current or low equivalent series resistance (ESR).



Industry's First SuperSpeed USB (3.0) Transceiver

- Receiver sensitivity of < 50mV differential peak-to-peak
- Integrated spread-spectrum clocking reduces BOM costs
- Enables USB 3.0 end-to-end

Order samples now

USB 3.0 Transceiver TUSB1310

[HOME](#)
 [Schematics](#)
 [Discover Forum](#)
 [Hobby Corner](#)
 [Dave's Circuits](#)
 [Electronic Resources](#)
 [Book Corner](#)
 [Contact Info](#)
[Discover Solar Energy](#)
 [Imagineering Ezine](#)
 [Dave Johnson & Associates](#)
 [Faraday Touch Switches](#)

Linking is welcomed but COPYING any content or graphics to your web site is expressly prohibited.

[About Us](#) |
 [Advertise on DiscoverCircuits.com](#) |
 [Report Broken Links](#) |
 [Link to DiscoverCircuits.com](#) |
 [Privacy Policy](#)