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Discussion DIY charge cut out for A123 batteries

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LVBoost
Low voltage step-up
regulator

Perfect for Solar and 1-cell power projects!
Input: 0.5V - 5V
Output: Adjustable 2.1V - 5V
Quiescent Draw: < 0.4mA

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Jan 02, 2008, 05:23 PM

#1

Dan Baldwin
Registered User

DIY charge cut out for A123 batteries

This is a DIY adjustable charge cut out device intended to be used with A123 battery packs. It can be used with Lipo chargers, nicad chargers, or a voltage source and current limiting. It's range is from about 9 volts to about 25 volts, so it can be used with A123 packs from 3 cells to 6 cells. It has been tested to 20 amps. A heat sink will be needed for the FET for high charge currents (over about 5 amps). The device will turn on as soon as a battery pack is connected as long as the pack voltage is under the cut out voltage. When the pack voltage reaches the set cut out voltage, the pack is disconnected from the charger. If the pack voltage drops far enough, the device will turn back on. The LED is on when the device is turned on, so the battery is being charged.

Dan

Code:



Join Date: Apr 2004
Location: Norwalk, CA
Posts: 2,422

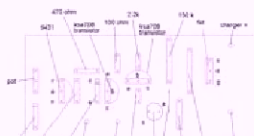
PART NUMBERS FROM MOUSER ELECTRONICS

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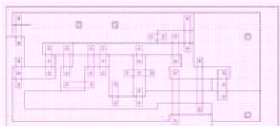
2      512-KSA708YTA PNP 60 VOLT SIGNAL TRANSISTOR
(alternate transistors-512-KSA539YBU, 512-KSA539OTA, and 512-PN4249)
1      511-TL431ACZ ADJUSTABLE SHUNT REGULATOR
1      78-1N5239B 9.1 VOLT .5 W ZENER DIODES
1      511-STP80PF55 P CHANNEL 55 VOLT FET
1      604-WP7104SYC YELLOW LED T1
(alternate LED 696-SSL-LX3044SYC )
1      652-3352T-1-103LF 10K PC MOUNTED TRIM POT
(for panel mount pot use 31VA401-F)
1      660-CF1/4C101J 100 OHM RESISTOR
1      660-CF1/4C471J 470 OHM RESISTOR
1      660-CF1/4C363J 36K OHM RESISTOR
1      660-CF1/4C432J 4.3K OHM RESISTOR
1      660-CF1/4C154J 150K OHM RESISTOR
1      660-CF1/4C103J 10K OHM 1/4 W RESISTOR
3      660-CF1/2C222J 2.2K OHM 1/2 W RESISTORS

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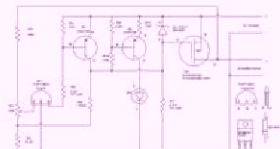
Attached Thumbnails



parts placement/top side'83.6 KB · Views: 2857



foil side of PC board. 99.8 KB · Views: 2250



58.6 KB · Views: 3923

Last edited by Dan Baldwin; May 06, 2008 at 10:21 AM.



Jan 02, 2008, 06:48 PM

jrb

Member



Join Date: Oct 1999

Location: Edina, MN, USA

Posts: 9,030

Wow, Very cool Dan!

1st to ask, but others will ask for more too.

The DeWalt packs are 10S, some of us use them straight out of the plastic only adding leads; does 36volts change the whole schematic and list of components?

TIA,

Jim

Quote

#2



Jan 02, 2008, 07:17 PM

birdofplay

American since 47



Join Date: Dec 2005

Location: Cathlamet WA

Posts: 3,966

I saw you here Dan !

Thanks again :-)

Quote

#3

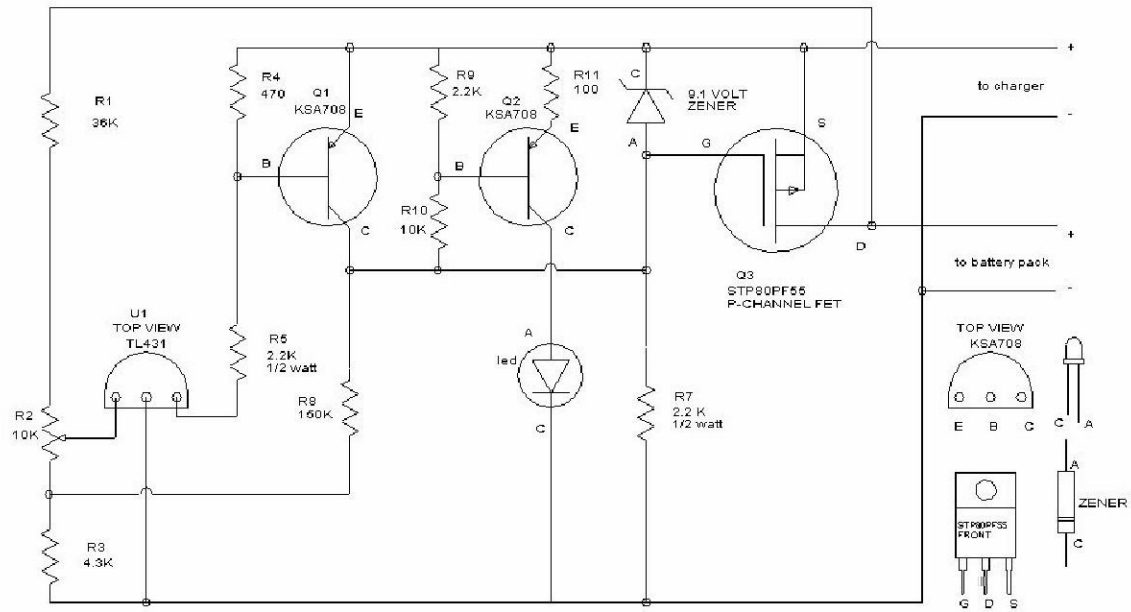


Jan 02, 2008, 09:44 PM

Quote

#4

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