

1: Simple V AA battery Solar charger circuit | www.enganchecubano.com

The solar charger circuit board comes with a USB port, DC jack for the solar panel, and two JST ports already attached to the board. The battery comes with a JST plug and will attach to the JST port labeled BATT.

Kids offers a variety of day camps and classes where kids can build solar-powered toys and gadgets. Camps are offered at a variety of times, prices and locations throughout Minnesota, giving parents and campers many options for summer. Elementary school students Varies Making Electricity With Solar Power Made Simple The sun produces heat and light, so how do we turn energy from the sun into electricity that people can use? These particles of sunlight bump into solar panels. Panel Panel When photons reach a solar panel, the panel converts them into electrons that flow through the panel and become electricity. Solar panels are often called photovoltaic PV panels because they use the process of turning photons into electricity, or voltage. Energy Consumption Energy Consumption Some devices can use the power that comes straight from a solar panel as long as the panel gets enough light. Others use rechargeable batteries to store the solar electricity and discharge it when needed. Solar ovens and simple solar cellphone chargers are two popular projects that teenagers can do inexpensively on their own. Solar Ovens for Teens Solar ovens really work for cooking food on sunny days. Plus, you can make a solar oven in an afternoon with materials found around the house or easily obtained from the grocery store. Instructions vary by project, but most call for a box, aluminum foil, clear plastic wrap, a box cutter and tape. Follow a pizza box solar oven tutorial. Solar Phone Charger for Teens A solar-curious teen looking for something a bit more advanced might be interested in building a solar cellphone charger. Browse by grade level to find appropriate solar projects, games, worksheets and videos. Florida Solar Energy Center: National Renewable Energy Laboratory: The NREL provides renewable-energy lesson plans and teaching resources appropriate for elementary, middle and high school students and for teacher development. Access more than 30 hands-on solar-energy science projects appropriate for students in fourth through 12th grade. Origin Energy â€” Energy Savers: This Australian site provides useful solar-related lessons and activities that extend beyond science and into other subjects. Kâ€™12 teachers can find energy-related lesson plans, activities, science fair experiments, field trip ideas and additional resources. Read, watch videos and make projects to learn about solar energy and other ways to protect the earth. Kids can play games, conduct experiments and learn about energy and its different sources on this site presented by the U. Energy Star Kids is packed with information on renewable energy resources, environmental responsibility and how kids can help save energy. Games, lessons and short educational videos help kids learn about different aspects of solar energy. Fun animations, videos and activities guide kids through solar-power and electricity basics.

2: Solar Battery Chargers - Industrial, RV & Marine Use | BatteryStuff

Solar LED When we are using a device as efficient as a solar panel, we would also want to use a load that's equally efficient. Lights are the prime necessity of every house, and today no form of light can be more efficient than an LED lamp in terms of light intensity and consumption.

What is the best portable solar charger? Portable solar battery chargers are perfect for maintaining and extending the life of 12V power systems for cars, trucks, tractors, motorcycles, boats, ATVs, RVs, and mowers. Additionally, solar panel charging systems can be set up for 24 and 48 volt DC systems and can be used to supply your cabin with electricity. We have a variety of solar battery charger power supplies, from small trickle car charger solar unit to large solar RV and auto battery chargers. The best thing about our solar battery charger is that they are maintenance free and easy to use. How does a solar-powered battery charger work? Using solar panel power is easy and environmentally friendly. How does it work? The solar panel plates are exposed to daylight. Through clear medium, the solar-powered battery charger converts the sun's rays into low voltage DC electricity, providing power that can be stored or used. Solar battery chargers are the best solution for your portable solar power needs because they have various power levels to suit every requirement. We also have solar battery charger controllers to cover solar panel systems up to watts. We have a variety of portable and stationary 12 volt solar cell battery chargers. Featured solar panel brand names include P3 Solar and Samlex, which are flexible and foldables. We also have a trickle solar car battery charger unit, as well as RV and marine chargers. If you require more than 5 solar panels, please contact us directly as freight pricing might be less than online pricing. How do I charge a car battery with a solar panel? You can use solar car battery chargers to harness energy to manage your power needs for your automobiles. Typically you can run the solar car battery charger through your cigarette lighter to charge your battery. If you have any questions, call our tech team at to discuss your solar car battery charger needs. Simply place it on the dashboard of your automobile and plug it into the cigarette lighter. It will then utilize sunlight to generate the power you need for your vehicle. Check out our products above to find the solar car charger that fits your needs.

Charge Controllers Why use a charge controller? We recommend that you use a solar charge controller on any photovoltaic system when the total watt output of your panels is 5 watts or higher. This prevents the panels from overcharging your battery or batteries when they reach full charge. The controller measures the voltage in the battery and shuts off when fully charged, and turns back on when the battery voltage drops. This allows your panel to act as a smart battery charger, giving you worry free solar battery charging.

Helpful Hints Controllers are typically rated in amps, with the ratings meaning how high an amp current it can safely pass. Solar panels are rated in watts. A typical 15 watt solar panel will produce about 1 amp-hour per hour of solar power. Keep in mind that when testing your solar charge controller, that it will NOT allow power to pass when not connected to a battery. Please read our Solar Tutorial , or use our Solar Calculator for further info. If you get stuck, or need more info, give our friendly tech guys a call. The pages listed above are designed to give a better understanding of the particular uses that the panels are most often used in. There are other more unique applications that are not shown and may be perfectly fine for use with one of the panels listed there. On the Other hand, if you simply want to browse our complete collection of solar products, you can find them here.

3: Make your own Solar Mobile Charger

Solar chargers projects and circuits with their schematics. See the collection of solar charger schematics.

October 22, Simple Solar Circuits: How to get started adding solar power to your small electronics projects. Use the sun to power small solar and battery powered night lights, garden lights, and decorations for halloween. The first part of a solar circuit is a device for collecting sunlight. This is a monolithic copper indium diselenide solar panel, apparently printed on a 60mm square of glass and epoxy coated for toughness. On the back of the panel are two thin solderable terminals, with marked polarity. While you can solder directly to the terminals, be sure to stress-relieve the connections, e. In full sunlight the panel is specified to produce 4. These are small simple circuits. In building these, we will quite intentionally gloss over a number of minor details and issues that are unimportant at these low powers, but could become critical if you were to try to scale up. The most obvious way to use power from a solar panel is to connect your load directly to the output leads of the solar panel. Here are a couple of examples of this in practice: When you set it out in the sunlight or bring it close to a lamp, the motor starts to spin. They provide no energy storage, and so are quite vulnerable to blinking out when a bird or cloud passes overhead. For some applications, like running a small fan or pump, that may be perfectly acceptable. For other cases, like powering a microcontroller or other computer, a brief power interruption can be disruptive. To get around this limitation, we used two of the caps in series, for which the voltage ratings add, giving us a barely-okay total rating of 5. When first exposed to the light, this circuit takes about 30 s to 1 minute to charge the capacitors enough that the LED can turn on. Adding a battery While interruption resistance is nice, a capacitor generally does not provide sufficient energy storage to power a solar circuit for extended periods of time in the dark. A rechargeable battery can of course provide that function, and also provides a fairly consistent output voltage that a capacitor cannot. In this next circuit, we use the solar panel to charge up a NiMH rechargeable battery and also LED off of the power, which will stay on when it gets dark out. In this circuit the solar panel charges up a 3-cell NiMH battery 3. This one-way valve allows current to flow from the solar panel to the battery, but does not allow current to flow backwards out of the battery through the solar panel. The LED is on all the time, whenever the battery is at least slightly charged up. That means that even while the circuit is in bright sunlight it is wasting energy by running the LED: Detecting Darkness We have written recently about how to make a useful dark-detecting LED driver circuit. That circuit used an infrared phototransistor. To perform the switching, we use a PNP transistor that is controlled by the voltage output from the solar panel. This circuit works very well and is a joy to use it would make a good upgrade to the dark detecting pumpkin to make it go solar with this circuit. A solar garden light circuit While the last circuit works well for driving a yellow or red LED, it runs at 2. So, we can add to that circuit the simple Joule Thief voltage booster to get a good design for a solar garden light: A mason jar comes to mind! This circuit is actually very close to how many solar garden lights work, although there are many different circuits that they use. Adding a microcontroller Our last circuit examples extend the previous designs by adding a small AVR microcontroller. We use the voltage output from the solar panel again to perform darkness detection, but instead take it to an analog input of the microcontroller. This is one of many, many different working designs for this sort of boosting circuits. To finish it up, we carved a beautiful white pumpkin and added this circuit to make our microcontroller-driven, dark-detecting, solar-powered programmable pumpkin, which faded its eyes in and out one at a time. Note the long leads on the solar panel and wires to the LEDs to reach. February 4, at 2: I have 2 panels that are 4. Do you think I am correct? Any help would be great. Hello, I have a question about "A solar garden light circuit". My solar panel generates 7V , 1. What should I change in that circuit? I am talking about circuit without micro-controller.

4: Solar Charger for 10W/20W/30W/50W White High Power SMD LED

Hobest Solar Charger mAh, Water-Resistant Outdoor Solar Power Bank LED Flashlight, Dual USB Portable Charger Solar Smartphones, GoPro Camera, GPS Emergency Travel (Orange) by HOBEST \$ \$ 21 99 Prime (days).

The idea was requested by Mr. Technical Specifications I am grateful for your help. Please keep in your mind that I am in 64 and just started taking interest in electronics just to have good time in this old age. Basically I am certified mechanical engineer from Germany 35 years ago and worked overseas for many years and left many years ago due to personal problems back home. Sorry to bother you but I know about your capabilities and expertise in electronics and sincerity to help and guide the beginnings like me. I have seen this circuit some where for 12 vdc. I have attached to SMD ,12v 10 watt, cap uf,16 volt and a bridge rectifier you can see the part number on that. When I turn the lights on the rectifier starts to heat up and the both SMDs as well. I am afraid if these lights are left on for a long time it may damage the SMDs and rectifier. You may help me. I have a light in car porch which turns on at disk and off at dawn. Unfortunately due to load shedding when there is no electricity this light remains off till the electricity is back. I want to additional two similar light elsewhere in the car porch to keep the entire are lighted. Of course it will put additional load on UPS battery which is hardly fully charged due to frequent load shedding. The other best solution is to install 12 volt solar panel and attach all these four SMD lights with it. This solar panel should be capable to keeps these lights all the night and will turn OFF at dawn. You may take your time to figure out how to do that. The two LM stages are configured in standard current regulator modes with using the respective current sensing resistances for ensuring a current controlled output for the relevant connected load. The load for the left LM is the battery which is charged from this LM stage and a solar panel input source. The resistor Rx is calculated such that the battery receives the stipulated amount of current and is not over driven or over charged. The right side LM is loaded with the LED module and here too the Ry makes sure that module is supplied with the correct specified amount of current in order to safeguard the devices from a thermal runaway situation. The solar panel voltage specs may be anywhere between 18V and 24V. As long as the solar voltage is available, the relay stays energized isolating the LED module from the battery and ensuring that the 40 watt LED module remains shut off during day time and while the battery is being charged. The LED module can be seen attached with a heatsink which must be sufficiently large in order to achieve an optimal outcome from the module and for ensuring longer life and brightness from the device. Calculating the Resistor Values The indicated limiting resistors may be calculated from the given formulas: Assuming the battery to be a 40 AH lead acid battery, the preferred charging current should be 4 amps. Limiting resistors are not employed for the 10 watt LEDs since the input voltage from the battery is on par with the specified 12V limit of the LED module and therefore cannot exceed the safe limits. The above explanation reveals how the IC LM can be simply used for making an useful solar LED light circuit with an automatic charger. Please send your queries through Comments for quick replies!

5: Solar Energy Charger | eBay

Solar Charger for 10W/20W/30W/50W White High Power SMD LED In this post we learn how to build a simple solar LED with battery charger circuit for illuminating high power LED (SMD) lights in the order of 10 watt to 50 watt.

6: Sun King PRO 2 LED Solar Light and Dual USB Phone / Mobile Device Charger | DIY Solar Projects

Make: Projects \$3 Solar-Powered Cell Phone Charger. Build a Solar Powered Cell Phone Charger from a few dollar store items and a few parts.

7: \$3 Solar-Powered Cell Phone Charger | Make:

SOLAR LE CHARGER PROJECT pdf

The Solar Charger is a good companion for my Atmospheric Disturbance Monitor (weather station). The screw driver is handy to adjust the Solar Radiation Monitor.

8: Unite to Light - Solar USB Charger LED Light | Indiegogo

This project is very easy and cheapest because we use a solar cell 3V mA and I measure voltage about V as Figure 1 so enough for charging.. And I will use AA V mAh Rechargeable Nickel metal Hydride Battery.

9: Solar Power & Projects for Kids & Teens | www.enganchecubano.com

Make your projects to go green this summer with our specialized USB/Solar Lithium Ion Polymer Battery charger! This charger is a very unique design, perfect for outdoor projects, or DIY iPod chargers.

*Gynecology and abdominal surgery 7. The Road Traveled in Colombia by Sandra Rincon, Translated by Joel Klassen
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