Update 09/22/24

1) Schottky diode to prevent reverse current

ChatGPT:

If you plan to **combine sources** (solar, picohydro, and grid) to ensure that the output remains stable even when one source underperforms, managing **reverse current** becomes crucial. Here are effective strategies to prevent reverse current flow in this combined input scenario:

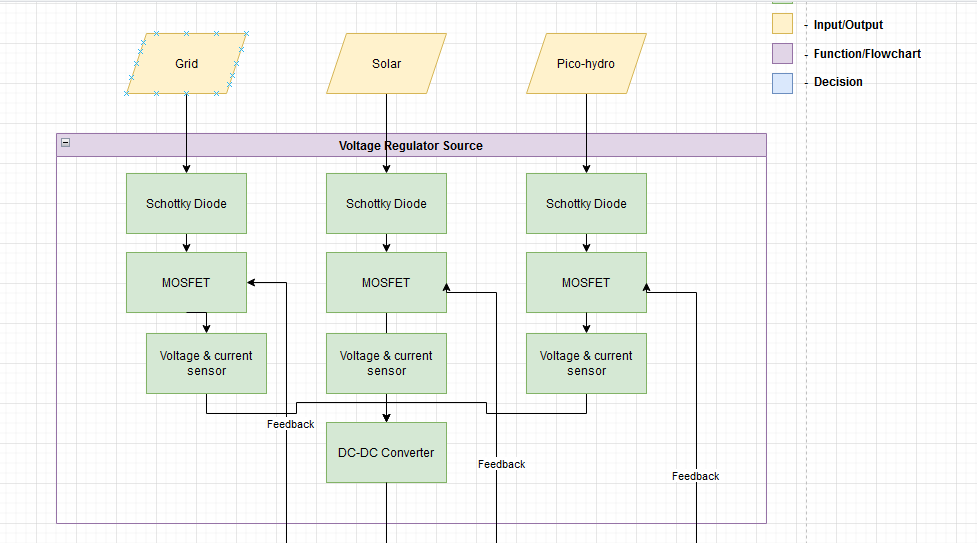
**1. Use Schottky Diodes:**

* **How it works:** Place a Schottky diode in series with each power source before they combine at the input of the DC-DC converter. The diode will allow current to flow from the source into the converter while blocking any reverse current from flowing back into the sources.
* **Advantages:**
  + Simple and easy to implement.
  + Schottky diodes have a low forward voltage drop, minimizing power loss.
* **Disadvantages:**
  + There will still be some power loss due to the diode's forward voltage drop, but it is generally minimal.

**Specifications:**

1. **Current Rating**: The diode should handle at least the maximum current from the solar panel, ideally with some headroom. A diode rated for at least **10A** would be suitable.
2. **Voltage Rating**: The reverse voltage rating should be significantly higher than the maximum voltage from the solar panel to avoid breakdown. A rating of at least **20V** is recommended.
3. **Forward Voltage Drop**: Look for a diode with a low forward voltage drop (typically < 0.5V). Lower forward voltage drop results in higher efficiency and less power loss.
4. **Package Type**: Choose a package suitable for your thermal management requirements. For higher currents, a TO-220 or similar package is often suitable.

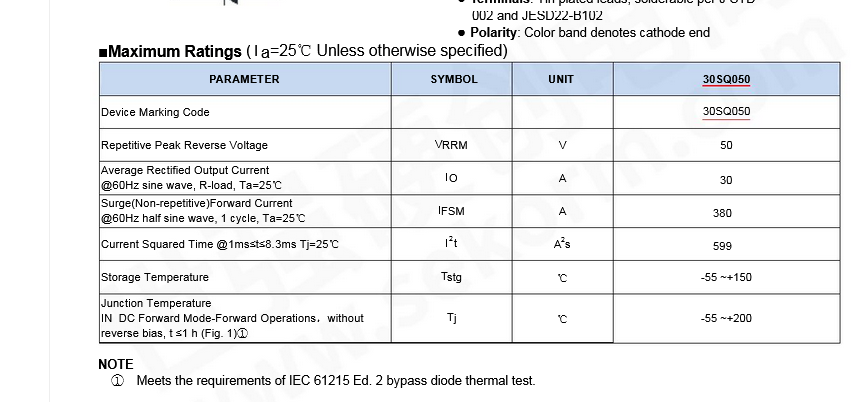
**New Diagram:**

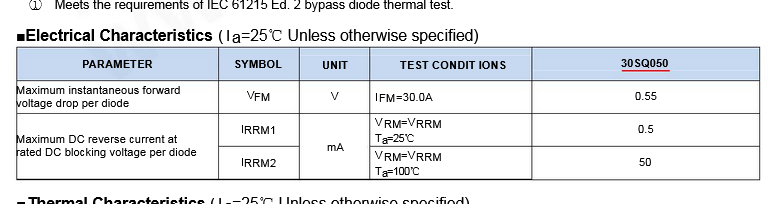


**Schottky (x3 - 30SQ050):**

<https://www.lazada.com.ph/products/1pc-10sq050-20sq050-30sq050-10a-20a-30a-50v-schottky-rectifiers-diode-solar-panel-blocking-diodes-i3289395162-s21636293914.html>?

Specs:





Docs: <https://en.sekorm.com/doc/2178126.html>

Raymund: baka may masuggest kayong ibang Schottky na may lower VFM if ever. Pero do let me know kung okay na to. Ang values natinitgnan natin is VFM, IRRM1&2, VRRM, and IFSM.

Na-consider ko yung pagreverse ng current given na tatlo yung sources at dahil kasi baka malakas yung reverse current ng solar.

2)MOSFET

Raymund: I think okay na yung mosfet din. We can use **STP55NF06L**

3)DC-DC converter

Raymund:Provide ako update soon regarding this.