

The Source Sink Transistor (SST) is a unique transistor configuration originally designed to be used as the output stage of a new generation of Open Sourcemeters. The SST can be configured to source a constant voltage or current into a load or Device Under Test, or sink a constant voltage or current from a load or Device Under Test. The present prototype is built on a 2 sided PCB using standard off the shelf components. It is a 6 pin device.

### Pin Description

Name	Type	Description
Vcc	Power	Positive power supply with respect to Ground
Ground		Ground
SOSI		Source Out Sink In – When the SST is configured in <i>source mode</i> , SOSI supplies voltage and current to an external circuit. When the SST is configured in <i>sink mode</i> , SOSI regulates a voltage or current supplied by an external circuit.
Vin	Analog Signal	Connects to the output of an error amplifier to regulate voltage or current. Similar to the base terminal of a transistor.
Control	TTL Logic Input	With Enable low, setting Control low configures the SST in <i>source mode</i> . Setting Control logic high configures the SST in <i>sink mode</i> .
Enable		Logic low enables the SST. Logic high disables all functionality, and sets the SOSI pin to a high impedance state.

### About the Revs

Rev 4 is currently being tested in the Open Sourcemeter prototype. Rev 6, which has yet to be tested, simplifies the control logic, and replaces the MBRB1635 diodes with PMEG100V080 diodes. The diodes in Rev 6 are smaller and have a specified current leakage spec of around 500nA. The diodes in Rev 4 have a lower forward voltage spec, but leakage current is not even specified.

### About the PCB Design Files

These PCB's were designed using Advanced Circuits' PCB Artist software. ( <https://www.4pcb.com/free-pcb-layout-software/> ) This CAD software includes schematic capture and PCB layout, but the manufacturing files are proprietary to Advanced Circuits. They are an excellent company, but future versions will be released in KiCAD for open source compatibility.