

SBT3000 - Power Line Smart AC Switch Controller Evaluation Module

1.1 - Introduction & Background

The purpose of this user's guide is to provide background information and how-to-use guide for the SBT3000 evaluation board. Please refer to the SBT3000 datasheet for further product information and technical details.

The SBT3000 is a patent-pending, high voltage AC switch controller device, which monitors incoming line voltage to ensure that the downstream load only operates within its safe maximum continuous voltage ratings. In the event of an over-voltage line conditions, the SBT3000 will automatically disable the AC switch to protect and isolate the load and minimize the potential of catastrophic failure modes. To avoid any excessive in-rush currents or inductive "kick-back" spikes, the AC switch 'connect/disconnect' is always synchronized to when voltage across the AC switch is zero (i.e., zero-volt Line to Load condition). The SBT3000 Evaluation Module (EVB), is an engineering circuit board designed for testing the operation of the SBT3000 integrated circuit. The SBT3000 EVB contains an SO8 IC socket and all the necessary support components to be able to apply an input voltage and a moderate load in order to evaluate the overvoltage protection features of the device.*



Figure 1: Top View of SBT3000 EVB

The input power is applied to the top terminal on one of the two terminal blocks on the left-side of the board, labeled as IN while the switched output power is taken from the center screw terminal, OUT. Both terminal blocks are connected in parallel. The IC operation can be monitored via the test pins on the right-side terminal strips where the signal names are the same as the pin outs of the SBT3000 IC. All voltage measurements are referenced to the COM pin of the IC, which is not isolated from the line power. The SBT3000 EVB includes a red LED (bottom left) and a green LED (bottom right) to show input and output voltages, respectively.

*Caution: When the SBT3000 is energized, it may contain dangerous, or potentially lethal voltages.

Full EVB User's Guide document is available upon request to info@siliconbrite.com