



Board Mounting Instructions and Heat Sink Selection Guide

All Signal controller boards must be mounted on a large metal surface to operate at the rated current levels. Proper mounting hardware is provided with each board to facilitate this task. The large metal surface acts as a heat sink and removes internally generated heat and keeps the PC board at the rated temperature range (35 to 75 degrees Centigrade). It is important to keep the thermal resistance between the power FET and the metal surface to a minimum. Use Silicon Thermal Grease to achieve a good thermal contact. We recommend thermal grease by Wakefield Engineering (Part Number: 120-SA), order from www.digikey.com, (use Digi-Key Part Number: 345-1006-ND).

If a large surface is not available or it is not an appropriate solution, then we recommend that you use one of the methods listed below:

For medium power level operations, with a typical current range of **10A to 20A**, use a small (3.3 in. x 4.0 in. x 0.065 in.) Aluminum Plate Heat Sink, such as the [Si600APHS1](#). This plate is capable to dissipate approximately **4W** of heat power, when exposed to 25 degree Centigrade ambient air. This inexpensive plate can be “piggyback” mounted onto a larger surface or a larger heat sink without disturbing the board and plate interface. This “piggyback” method considerably extends the current and power range of the board. This method is particularly effective when thermal grease is used between the mounting surfaces.

For higher current levels (**20A to 32A**) use a **15W to 20W** Finned Heat Sink [Si15WFHS1](#), or use the [Si20MEIDbox1](#), metal enclosure (5.9 in. x 4.1 in. x 2.25 in. box). This metal box acts as a **15W to 20W** Heat-Sink and in addition, it protects the circuit board. It is intended for indoor use. For even higher current levels (**32A to 50A**), we recommend that you use **40W to 60W** Heat Sinks. Technical information on high-power Extruded Heat Sinks is provided on the Wakefield Engineering WEB sight, www.wakefield.com.