

This application note offers three different solutions for providing a heatsink solution for the Ag9000-S Powered Device (PD) module.

The Ag9000-S (Rev.3 boards and above) has a thermal protection circuit to prevent the module from being damaged if operated beyond its power / temperature specification. The Ag9000-S datasheet has an “Operating Temperature Range” section, which details the operating profile of the module with respect to the output power vs. ambient temperature.

The heart of the Ag9000-S is a DC/DC converter, which like any other power supply will generate heat. The amount of heat generated by the module will depend on the load it is required to drive and the input voltage supplied by the Power Sourcing Equipment (PSE). The information shown in the “Operating Temperature Range” section of datasheet is referenced to a nominal 48Vdc input voltage.

Solution 1

Figure 1 shows power plane connected to the +VDC and GND pins of the Ag9000-S, these can be used to draw heat away from the DC/DC converter output via the pins.

These power planes must be on the outer layer of the PCB and the Ag9000-S must not be fitted into a socket.

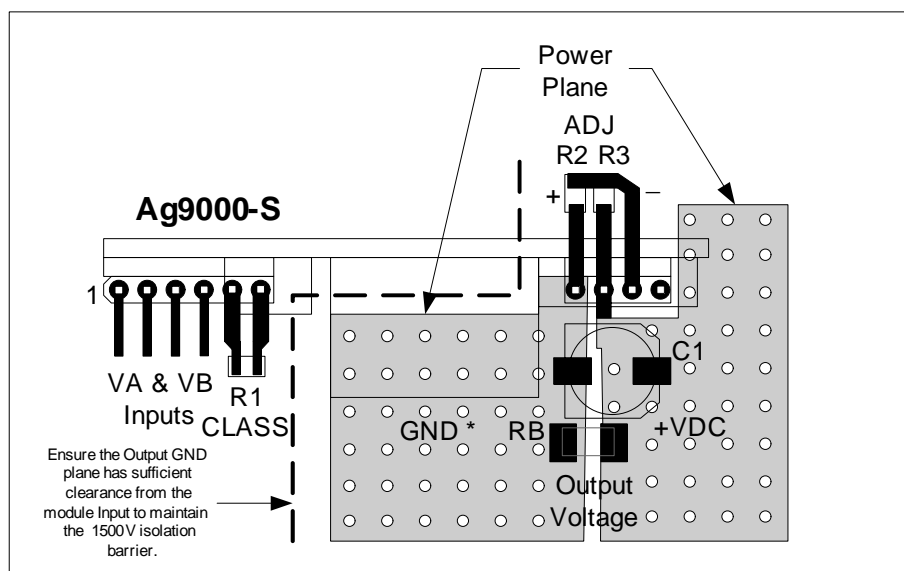


Figure 1: Power Plane

Solution 2

Figure 2 show how to attach a heatsink to the Ag9000-S, in this example a DIP1495 heatsink from [AAVID THERMALLOY](#) has been used.

This can be attached to the rear of the Ag9000-S with thermal epoxy as shown.

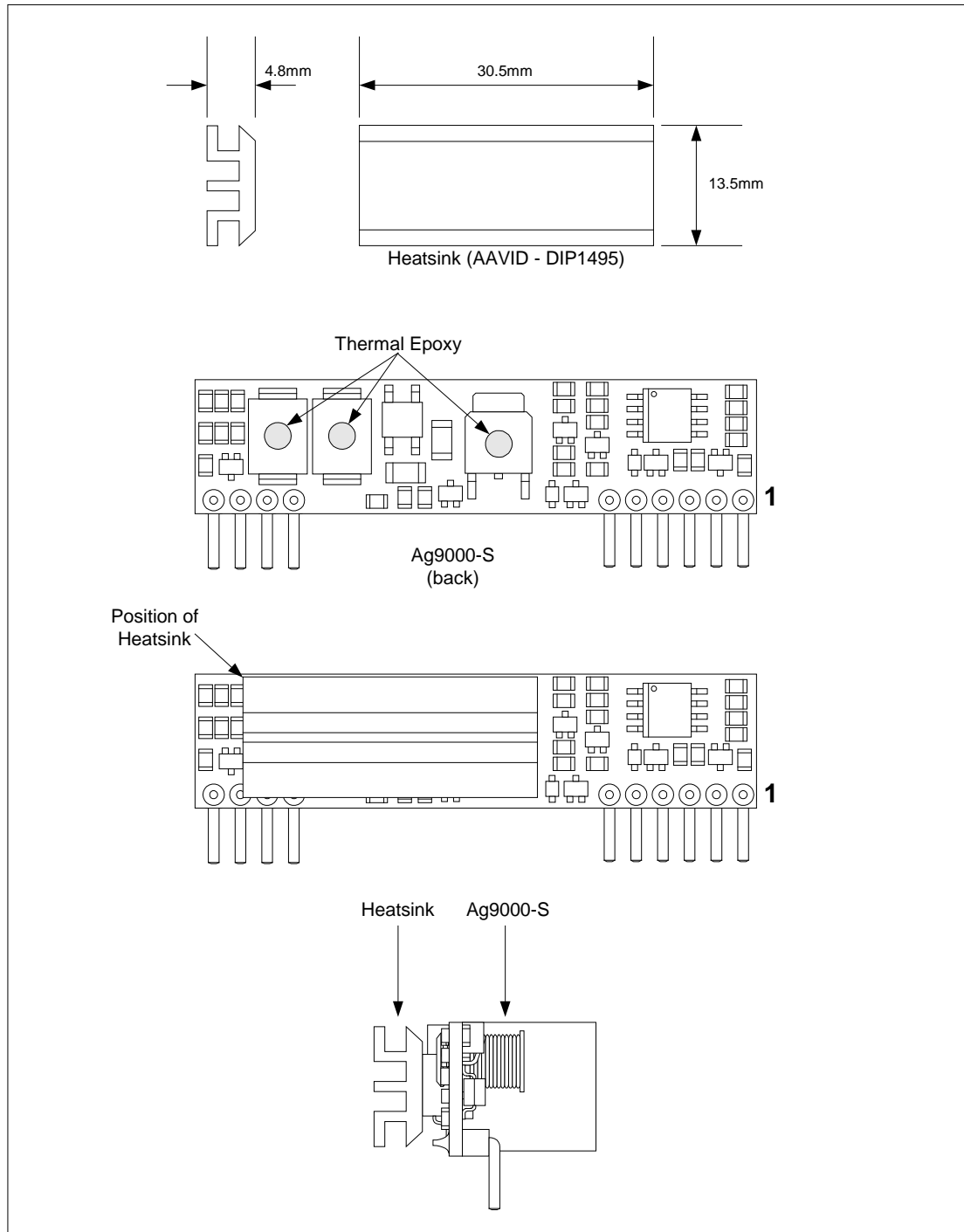


Figure 2: Heatsink

Solution 3

Figure 3 show how to use the enclosure itself as a heatsink for the Ag9000-S. In this example the heat is transferred from the Ag9000-S to the enclosure via thermally conductive material “GAP PAD V0 Soft” from [BERGQUIST](#).

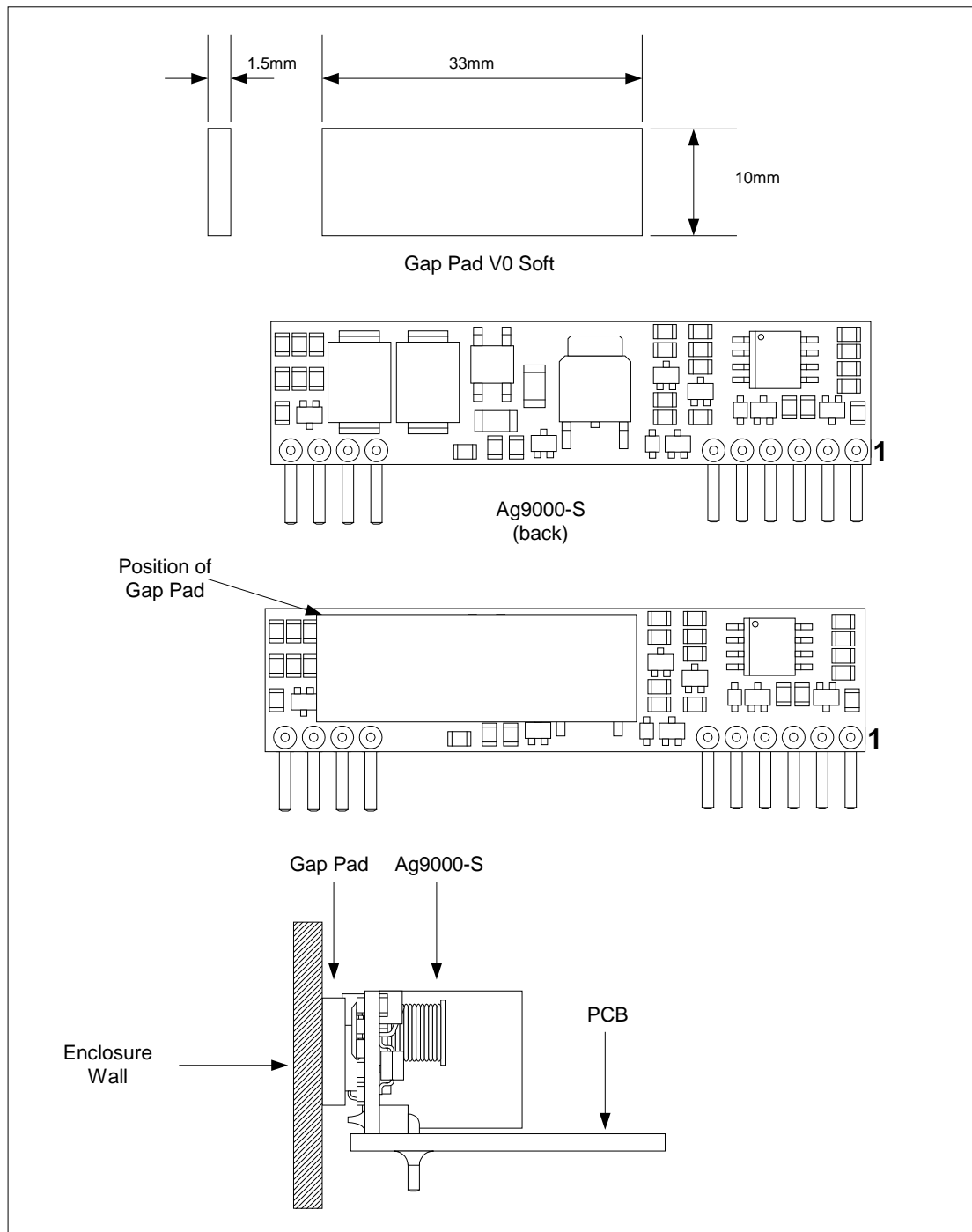


Figure 3: Connecting Ag9000-S to Enclosure

Comments

It is important that any enclosure used has sufficient ventilation for the Ag9000-S and a direct airflow if possible.

Because each application will be different it is impossible to give a fixed and absolute solution. The solutions shown in this application note are general guidelines and offer possible solutions to drawing heat away from the Ag9000-S.

Because the Ag9000-S is a power component, it will generate heat, so it is important that this be taken into consideration at the design stage.