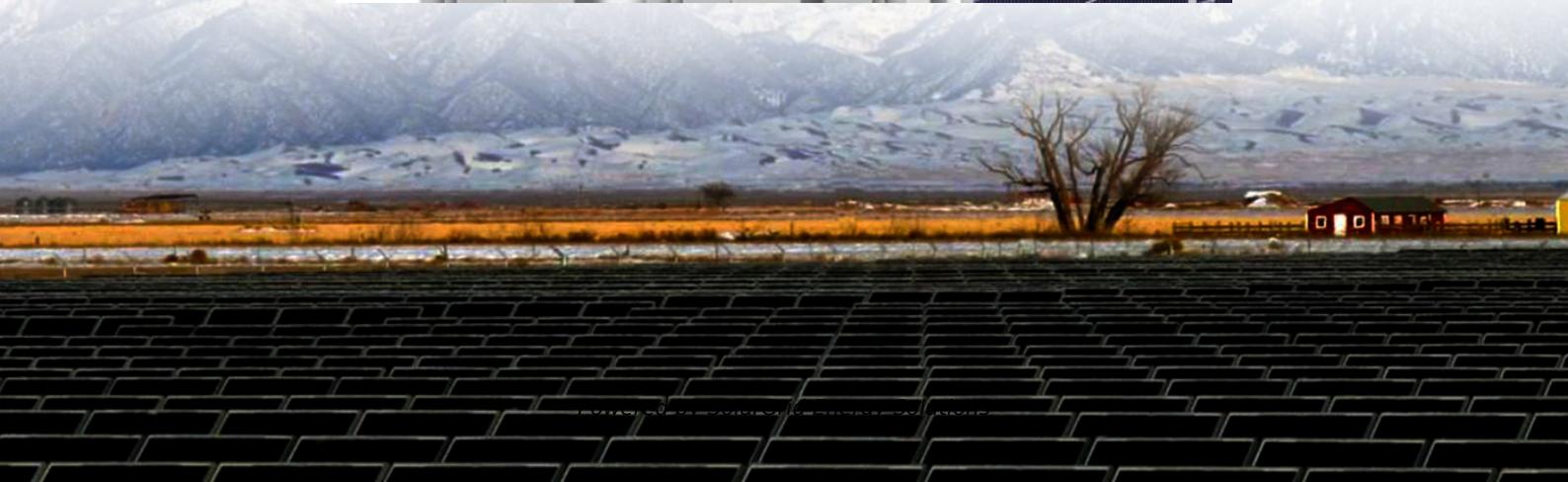




SolarGrid Energy Solutions

How to install the heat sink of a high-power communication base station



Overview

What is a heat sink?

low, especially when used in conjunction with fans. Heat sinks provide a base level of heat dissipation that forms the backbone of any effective thermal management system. Regardless of the specific layout, thermal management components should be selected early in the electronics.

Why is a heat sink important?

Since air is a good thermal insulator, it is important that a heat sink is used to increase the overall heat transfer area to the ambient, i.e., the overall thermal performance, $R \theta$ heat sink-ambient, as shown in Figure 1. This is especially true for power device packages.

How does a heat sink work?

electronics at a sustainable operating temperature. A passive component made from metals with high thermal conductivity, heat sinks disperse heat by drawing it away from sensitive circuitry. Heat sinks may be cooled by liquids or simple air flow to remove heat more effectively from the system. They may also incorporate fins to direct air.

How do I choose a heat sink insulator?

washer slightly increases the thermal resistance. Choose an insulating material between the package and heat sink for optimal thermal performance. PowerSite is a trademark of Parker Hannifin Corporation. Sil Pad is a trademark of the Bergquist Company. Clip mounting is a more stable and safer method than screw mounting.

How do you fill a gap between a base plate and heat sink?

A thermal sheet or thermal grease is used commonly to fill the gap between the base plate and heat sink surface. This would be necessary, even if there were no gap at room temperature, as the baseplate shape changes with the

temperature.

What causes a gap between base plate and heat sink?

The height differences reach around $40\mu\text{m}$. This induces gaps at the interface of module base plate and heat sink, deteriorating the heat dissipation, and as a result, the chip temperatures may exceed maximal allowed chip temperature. A thermal sheet or thermal grease is used commonly to fill the gap between the base plate and heat sink surface.

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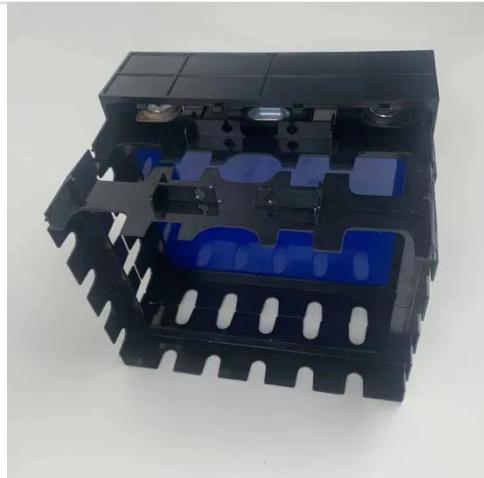
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tips, and DIY solutions for optimal thermal ...

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AND9859

describes heat-sink mounting methods, considerations, contact thermal resistance, and mounting torque for various packages. Figure 1. Thermal Resistance Model of an Package Assembly ...



High Heat-Flux Heat Sink Design , Celsia

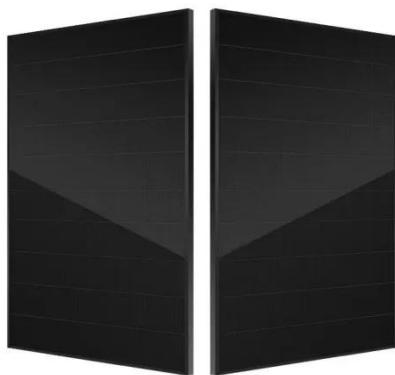
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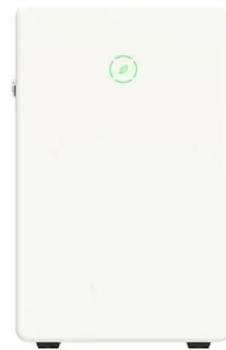


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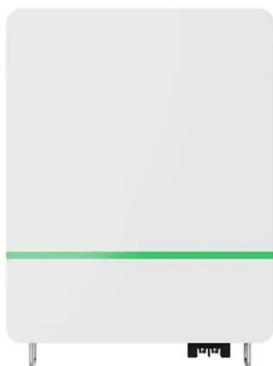
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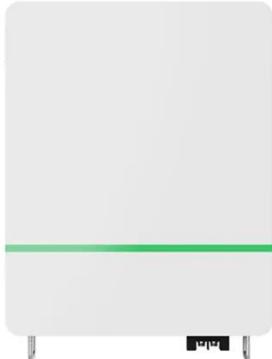
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Energy storage(KWh)
102.4kWh
Nominal voltage(Vdc)
512V
—
Outdoor All-in-one ESS cabinet



Heat sinks, Part 1: Thermal principles

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