

SolarInnovate Energy Solutions

Heterojunction solar tiles



Overview

What is a heterojunction solar panel?

Heterojunction solar panels are extremely versatile, opening the way for the solar industry to further increase applications for solar power. These are some of the most common applications for this technology. HJT high conversion efficiency makes it great for limited space applications.

What are the advantages of heterojunction solar cells?

Figure 2: A typical Heterojunction solar cell. Manufacturing advantages: The first and foremost advantage of HJT is that it is a less energy intensive process, thanks to the thin film depositions on its either sides. The HJT cells are processed at $< 250^{\circ}\text{C}$ which saves a lot of energy during manufacturing cells.

How are heterojunction solar cells made?

There are several steps involved in the manufacturing process of the heterojunction solar cell. These are the following: The wafer processing involves cutting the c-Si cells with a diamond-based saw. Performing this process with extreme delicacy will result in high-quality c-Si layers, which translates to higher efficiency.

What is heterojunction technology (HJT)?

Heterojunction Technology is a hybrid solar cell structure that combines crystalline silicon (c-Si) with amorphous silicon (a-Si) layers. More specifically, HJT solar cells are composed of:.

Are bifacial solar panels better than heterojunction solar panels?

The structure of bifacial panels is similar to the heterojunction solar panel. Both include passivating coats that reduce resurface combinations, increasing their efficiency. HJT technology holds a high recorded efficiency of 26.7%, but bifacial surpasses this with an efficiency of over 30%.

What is the difference between standard and HJT solar cells?

Standard (homojunction) solar cells are manufactured with c-Si for the n-type and p-type layers of the absorbing layer. HJT technology, instead, combines wafer-based PV technology (standard) with thin-film technology, providing heterojunction solar cells with their best features. Structure of HJT solar cell - Source: De Wolf, S. et al.

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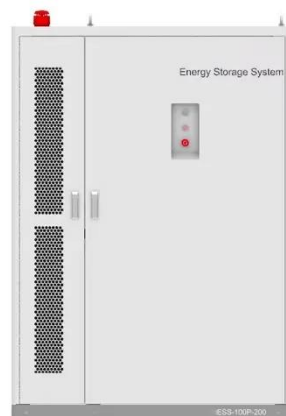
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