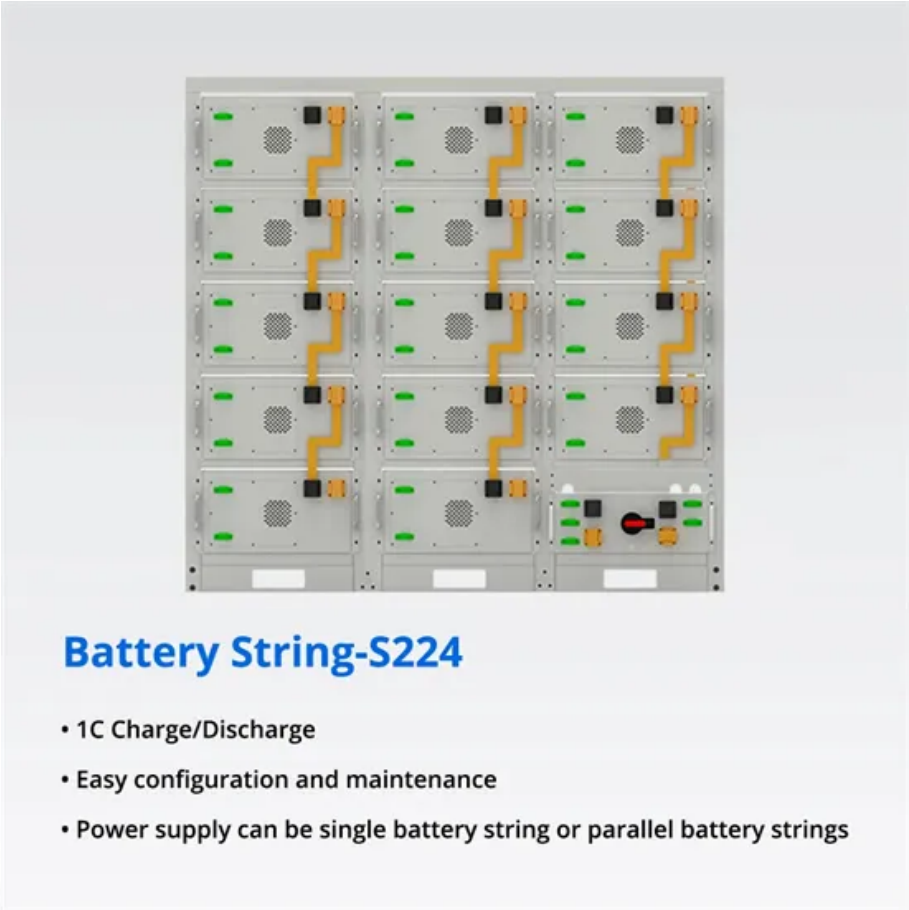
Double-glass photovoltaic module efficiency improvement



Overview

Are double-glass PV modules durable?

Double-glass PV modules are emerging as a technology which can deliver excellent performance and excellent durability at a competitive cost. In this paper a glass–glass module technology that uses liquid silicone encapsulation is described. The combination of the glass–glass structure and silicone is shown to lead to exceptional durability.

What is a double glass c-Si PV module?

Recently several double-glass (also called glass–glass or dual-glass modules) c-Si PV modules have been launched on the market, many of them by major PV manufacturers. These modules use a sheet of tempered glass at the rear of the module instead of the conventional polymer-based backsheet. There are several reasons why this structure is appealing.

What is the electrical performance of BYD double-glass modules?

The electrical performance of the BYD double-glass modules was as expected for multicrystalline cells, with power bins ranging from 245W to 265W for 60-cell modules, and from 295W to 315W for 72-cell modules. The modules were subjected to numerous accelerated ageing tests.

Are early PV modules encapsulated with silicone?

Photovoltaics International Early PV modules were often encapsulated with silicone, and have demonstrated outstanding stability in the field, with degradation rates over 20 to 30 years that are much lower than the typical degradation rates for EVA-encapsulated modules [3–5].

What is glass–glass module technology?

In this paper a glass–glass module technology that uses liquid silicone encapsulation is described. The combination of the glass–glass structure and silicone is shown to lead to exceptional durability. The concept enables safe

module operation at a system voltage of 1,500V, as well as innovative, low-cost module mounting through pad bonding.

What encapsulant materials can be used for PV modules?

Various encapsulant materials can be considered. Polyvinyl butyral (PVB) has been used for a long time for glass–glass PV modules, particularly for thin-film modules.

Double-glass photovoltaic module efficiency improvement

The Performance of Double Glass Photovoltaic Modules ...

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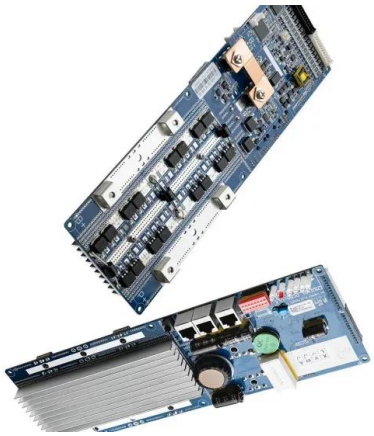

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