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Ultra-thin solar glass tonnage

Overview

How are ultra-thin GaAs solar cells made?

Ultra-thin GaAs solar cells were anodically bonded to the D263 T eco glass, creating a strong, hermetic seal, free from adhesives. The GaAs growth substrate was removed and the epitaxial layers were then processed into solar cells off the growth wafer. These devices can be operated with the glass as a substrate or superstrate.

What are ultra-thin GaAs photovoltaics?

For extended space missions in hostile radiation environments. Ultra-thin GaAs photovoltaics with light management offer flexible form factors, higher specific power, a route to low material cost, and inherent resilience to damaging radiation environments in space, compared to conventional on-wafer architectures with thick absorbers.

How can JSC be improved in ultra-thin III-V solar cells?

Further gains to Jsc might be achieved with more complex and efficient light scattering layers such as quasi-random patterning in III-V materials which could be employed after the ultra-thin III-V solar cells are securely bonded to the new host glass superstrate by anodic bonding , . 5. Conclusions.

Do ultra-thin GaAs solar cells have intrinsic radiation tolerance?

Consistent with prior studies showing intrinsic radiation tolerance of ultra-thin GaAs solar cells, no degradation of the Jsc is observed for both 500 keV electron exposure in both glass-as-superstrate and glass-as-substrate orientations , . The EOL performance of the Jsc is even slightly improved compared with the BOL performance.

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Here we demonstrated an adhesive-free method of bonding ultra-thin GaAs solar cells to borosilicate glass by anodic bonding. This off-wafer processing method replaces the III ...

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Ultra-thin solar glass is a specialized high-transparency glass used primarily in the production of solar panels. It has an extremely thin thickness typically ranging from 0.1-0.3 ...

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