TOPCon Series NSEZC Ultra-Efficient Bifacial URE

Does bifacial Topcon solar cell lose optical efficiency?

As we predicted,the optical loss of full-area bifacial TOPCon solar cell severely limits device performance,with a theoretical efficiency of only 26.12 %. The device with local front poly passivation is demonstrated to get comprehensive advantage in potential and shows a simulated result of 26.42 % efficiency.

What is bifacial Topcon?

The selectivity is defined as membranes that block minority carriers and provide a high conductivity for transporting majority carriers . In Brendel 's prediction, calculated by selectivity, the bifacial TOPCon is considered to be the potential structure with the highest theoretical efficiency [31, 32] for single-junction silicon solar cell.

How efficient are Topcon bifacial cells?

After optimizing the passivation process,the industrial-grade TOPCon bifacial cells reached an efficiency (Eff),Voc,Jsc,and FF values as high as 25.4%,721 mV,42.2 mA/cm 2,and 83.5%,respectively. 1. Introduction

How bifacial and traditional Topcon solar cells improve Fela performance?

The FELA of bifacial and traditional TOPCon solar cells is analyzed by simulation. The optimization strategy of front poly-finger is explored to improve performance. Contact mapping of device is investigated with bulk dopant and band bending. The outlook and upgrade strategy of poly-Si (p) finger, ALD and LECO technology.

How efficient are Topcon solar cells?

Due to the potential for high theoretical limit efficiency as high as 28.7%and low cost ,TOPCon solar cells have become one of the prospective technologies in the photovoltaic (PV) market . At present,the highest efficiency for n-TOPCon has achieved 26.4% on an area of 330.15 cm 2 at JinkoSolar .

Which bifacial Topcon cells have high quality passivation?

In bifacial TOPCon cells,n -poly/SiN x and AlO x /SiN xfeature high quality passivation corresponding to J0 of 3 fA/cm 2 and 1.5 fA/cm 2 respectively,while the passivation contact property of poly/metal is superior to Si/metal [21,36,37].

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