182-N-Type 10BB Mono TOPCon Bifacial Solar Cell

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 .

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 efficient are N-Topcon solar cells?

Cells with J0,n+?5 fA/cm 2 (50 nm) and Jo,metal,n++?73.8 fA/cm 2 (110 nm) exhibited the efficiency gain of 0.12%. A pilot efficiency >25.4%of cells treated with optimized passivation process. Improving the conversion efficiency of n-TOPCon solar cell is still a hot topic.

What is the SIO x /n +-poly-Si process of N-Topcon solar cells?

Therefore,this study focuses on the SiO x /n +-poly-Si process of n-TOPCon solar cells,which consisted of screen-printed metallic contactson both sides fabricated from 182 mm × 182 mm × 0.14 mm Cz-Si wafers through an industrial-type process with the fixed Ag/Al and Ag pastes.

What is the Topcon structure?

The TOPCon structure consists of an ultrathin silicon oxide (SiOx) film and an n (+) doped polysilicon (poly-Si) layer,which uses the concept of tunnel selectivity engineering. By employing thin SiOx layer,it was possible to obtain the tunneling selectivity which allows electron transmission from Si to n+-poly-Si layer while holes are repelled.

Is gpocl3 suitable for the rear of a solar cell?

On the contrary,it is suitablefor the rear of solar cell. The R increased by decreasing GPOCl3 from 2400 to 1200 sccm,which has a high free carrier absorption (FCA) loss probably due to high doping,it is consistent with ECV profiles (Fig. 7 a).

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