

Solar Energy South Africa

The igt of the photovoltaic inverter will explode when it encounters dust



Overview

What is the difference between IGBT and inverter?

The IGBT is the CPU of the power electronic device and plays a decisive role in power electronic converter and control. In the inverter, the IGBT module is more important. However, IGBT modules often explode. Below, Xiaobian will analyze the case in detail.

How much damage does a photovoltaic inverter cause?

When the optimal PV system capacity ratio and power limit value are taken, the annual damage of the IGBT in the photovoltaic inverter is 0.847% and the net increase of power generation is 8.31%, realizing the increase of photovoltaic power generation while the annual damage of IGBT and power generation loss due to power limit is relatively low.

Which module is most vulnerable in photovoltaic (PV) systems?

The inverter is the most vulnerable module of photovoltaic (PV) systems. The insulated gate bipolar transistor (IGBT) is the core part of inverters and the root.

Do IGBT modules explode?

However, IGBT modules often explode. Below, Xiaobian will analyze the case in detail. First, the IGBT explosion: For some reasons, the loss of the module is very large, the heat can not be dissipated, resulting in extremely high internal temperature, generating gas, breaking the shell, this is the so-called IGBT explosion.

What causes IGBT explosion?

For some reason, the loss of the module is very large, and the heat cannot be dissipated, resulting in extremely high internal temperature, gas is generated, and the shell breaks through. This is the so-called IGBT explosion. 2. Analysis of IGBT Explosion Causes 1.

Are insulated-gate bipolar transistors a good choice for solar inverter applications?

For solar inverter applications, it is well known that insulated-gate bipolar transistors (IGBTs) offer benefits compared to other types of power devices, like high-current-carrying capability, gate control using voltage instead of current and the ability to match the co-pack diode with the IGBT.

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IGBT power modules lifetime in 2-level pv-inverters under harsh

In the last decades, the interest in solar photovoltaic (PV) energy has increased considerable around the world. That are many publications that focus on the temperature assessment of PV ...

Overview of fault detection approaches for grid connected photovoltaic ...

Further, it is identified that for a solar photovoltaic (PV) inverter the power module construction intricacy and the complex operating conditions may degrade the reliability of ...



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