

Keywords: Parallel-gap resistance welding; Solar cells; Experiment design; Reliability. Preliminary Analysis of Solar Cell Interconnections Welding Parameters Using Design of Experiments for Future Optimization
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?????,?????50 um??????? Sunpower ??????,????????????????? ??? ???? ?????????????? ?????????? ...

interconnects to 200-um (8-mil) thick silicon solar cells by PGRW. Solar-cell welds, made using three different weld schedules, were examined by optical and scanning electron microscopies. ...

One of the processes that determine the reliability of solar panels used in space applications is the welding of interconnections between two adjacent solar cells. This process has various technologies, sequences and activities that have various characteristics, factors and parameters.

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Monocrystalline silicon solar cells with thicknesses below 50um manufactured by the transfer layer process at ipe reach efficiencies as high as 17.0%. We present a thin film solar cell, which is ...

To enhance the thermal reliability of solar cell joints in intricate space conditions, this study delved into the influence of thermal cycle on mechanical properties and ...

A 2D thermal-electrical-mechanical coupled axisymmetric model was established to simulate the behavior of the parallel gap resistance welding (PGRW) process ...

The commercially available first and second generation PV cells using semiconductor materials are mostly based on silicon (monocrystalline, polycrystalline, amorphous, thin films) modules as well as cadmium telluride (CdTe), copper indium gallium selenide (CIGS) and gallium arsenide (GaAs) cells whereas GaAs has ...

The inverted metamorphic multi-junction solar cell is anticipated to be widely applied in stratospheric flight because of its exceptional properties of flexibility and light weight. We propose an ipsilateral welding technology based on Ti/Au electrodes to simplify the fabrication process of GaInP/GaAs/InGaAs solar cells and encapsulate large-sized flexible solar cells. ...

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