



# Ztj solar cells Liechtenstein

What is a ztj solar cell?

The ZTJ from Rocket Lab is a Satellite Solar Cell that is designed for a multitude of LEO, GEO, and interplanetary missions. It has an open circuit voltage of 2.726 V and a BOL efficiency of 29.5 % at maximum power point. This space-qualified solar cell has a voltage at a maximum power of 2.41 V and is capable of delivering power of up to 4 MW.

What is a 3rd generation Triple-Junction (ztj) solar cell?

features >3rd generation triple-junction (ZTJ) InGaP/InGaAs/ Ge Solar Cells with n-on-p polarity >Solar cell mass of 84 mg/cm<sup>2</sup>; >Extensive flight heritage with more than 1 MW delivered to multitude of LEO, GEO and interplanetary missions >Compatible with corner-mounted silicon bypass diode for individual cell reverse bias protection

What makes a ztj cell unique?

>ZTJ cell optimized for LEO missions in environments dominated primarily by charged protons >Extensive flight heritage with more than 600 kW delivered to multitude of LEO missions >Compatible with corner-mounted silicon bypass diode for individual cell reverse bias protection

Can ztj solar cells be used to a Kapton?

1 Test Configuration A vessel substrate using ZTJ solar cells to a Kapton of robustness coupons were then subjected of three different silicones/PSAs they may aid in manufacturing a cell-to-Kapton being evaluated to as options as conventional is to outgassing described demonstr

How efficient are IMM solar cells compared to ztj solar cells?

These cells have the potential to achieve exceptionally high efficiencies; and during the Base Phase of the program they already attained an efficiency of 33.7% under standard test conditions. In addition to high efficiency, the IMM cell with its carrier is 40% lighter than the SolAero state of the art ZTJ solar cell.

Are ztj solar panels a AIAA-S-111 or AIAA-S-112 standard?

The ZTJ cells, CICs (Coverglass-Interconnected-Cell) and solar panels have also been characterized and qualified to both the AIAA-S-111 and AIAA-S-112 standards.

ZTJ-O Space Solar Cell is a triple-junction solar cell optimized for LEO environment. Part of ZTJ family of solar cells optimized for all space missions. Up to 30.2% Minimum Average BOL Efficiency. About 1000 kW of ZTJ Family Flight Cells manufactured to date. Powering more than 200 separate satellites.

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the IMM cell with its carrier is 40% lighter than the SolAero state of the art ZTJ solar cell. Figure 3 is a schematic of an IMM6 solar cell. The cell is grown inverted, as shown, with lattice matched high band gap junctions grown first, followed by metamorphic buffers ...

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> Triple-Junction, n-on-p solar cell lattice matched on germanium substrate > Radiation hardened design @1-MeV, 1E15 e-/cm<sup>2</sup>; fluence P/Po = 0.87 (ECSS post- radiation annealing) > Compatible with corner-mounted silicon bypass diode for individual cell reverse bias protection > Excellent mechanical strength for reduced

During the Base period, we evaluated two device architectures for the solar cell component: the inverted metamorphic four-junction cell (IMM4) as the primary concept; and the lattice- matched triple junction (ZTJ) as the back-up.

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Abstract: Emcore's latest generation InGaP/InGaAs/Ge ZTJ triple-junction space-grade high-efficiency solar cells have been in volume production since 2009, with over 300,000 flight cells produced to power more than 35 separate satellites. The ZTJ cells, CICs (Coverglass-Interconnected-Cell) and solar panels have also been characterized and ...

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Individual SolAero ZTJ solar cells were bonded to a Kapton film substrate using three different



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silicones/PSAs to evaluate the bonding procedures. The bonded coupons were then subjected to repeat thermal cycling to demonstrate

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