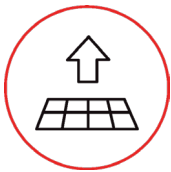
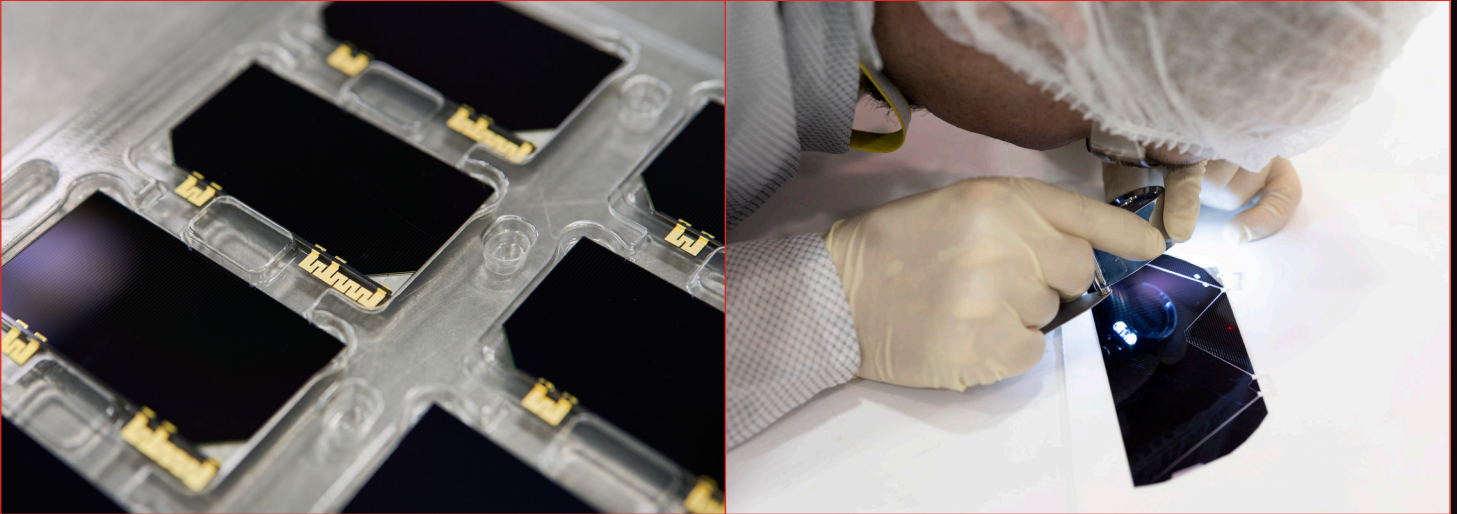


ZTJ+

SPACE SOLAR CELL

Optimized Triple-Junction Solar Cell for High-Radiation Environments



29.4%

Minimum Average Efficiency

Space Qualification and Characterization to the AIAA-S111-2014 Standards.

FEATURES

- › Triple-Junction, n-on-p solar cell lattice matched on germanium substrate
- › Radiation hardened design @1-MeV, $1E15$ e-/cm² 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 attrition during assembly and laydown
- › Weldable or solderable contacts
- › Custom sizes available

ZTJ+ SPACE SOLAR CELL

BOL Performance

Typical Parameters @ AMO (135.3 mW/cm²), 28°C

Typical Values	
BOL Efficiency at Maximum Power Point (%)	29.4
Voc (V)	2.69
Jsc (mA/cm ²)	17.11
Vmp (V)	2.39
Jmp (mA/cm ²)	16.65

EOL Remaining Factors after exposure to 1-MeV Electron Irradiation

Annealed to ECSS-E-ST-20-08C Rev.1 post-radiation annealing procedure

Fluence (e/cm ²)	Voc	Jsc	Vmp	Jmp	Pmp
5E14	0.92	0.99	0.92	0.99	0.91
1E15	0.90	0.97	0.90	0.97	0.87
5E15	0.85	0.90	0.84	0.87	0.73

Temperature Coefficients

BOL & EOL (1-MeV electron irradiation)

Fluence (e/cm ²)	Voc (mV/°C)	Jsc (μA/cm ² /°C)	Vmp (mV/°C)	Jmp (μA/cm ² /°C)
BOL	-6.4	7.8	-7.2	5.7
1E14	-6.6	7.9	-7.0	4.7
1E15	-7.0	9.2	-7.4	5.9
2E16	-7.6	11.8	-7.0	10.8

*Measured from 28°C - 80°C after post-radiation annealing to ECSS-E-ST-20-08C Rev. 1 procedure