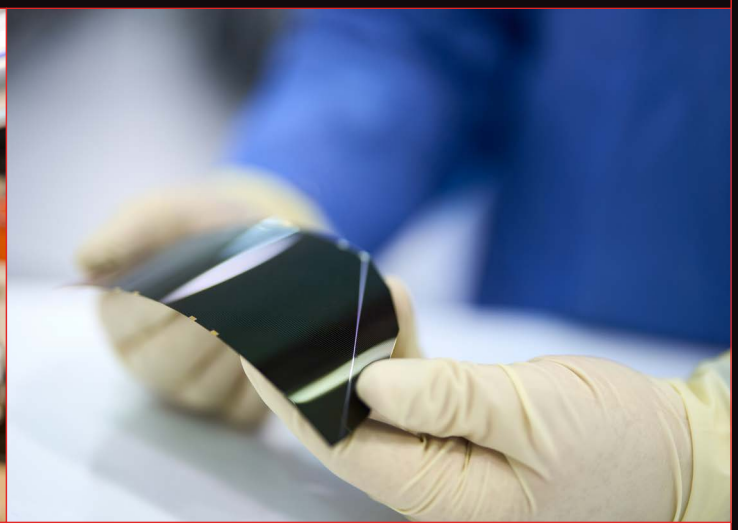
Z4J+
SPACE SOLAR CELL

4-Junction Solar Cell for Space Applications



31.3%

Minimum Average Efficiency

Superior radiation hardness compared to other Germanium-based solar cells.

Tested to the AIAA-S111-2014 space qualification and characterization standard.

FEATURES

- 4-junction n-on-p solar cell on germanium substrate
- Radiation hardened design with P/Po = 0.90 @ 1-MeV electron, 1E15 e/cm² fluence
- For a typical GEO Telecom Mission, Z4J+ produces 12% greater EOL power than ZTJ (1-MeV electron, 1E15e/cm² @ 55°C)
- Compatible with corner-mounted silicon bypass diode for individual cell reverse bias protection
- Weldable or solderable contacts
- Custom sizes available

spacesystems@rocketlabusa.com
rocketlabusa.com

ROCKETLAB

Z4J+ SPACE SOLAR CELL

CIC BOL Performance with 100-µm (4-mil) thick AR-Coated Coverglass

Electrical Parameters @ AM0 (135.3 mW/cm²), 28°C	
BOL Efficiency at Maximum Power Point (%)	31.3
Voc (V)	3.72
Jsc (mA/cm²)	13.4
Vmp (V)	3.31
Jmp (mA/cm²)	12.8

EOL Remaining Factors

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

Fluence (e/cm²)	Voc	Jsc	Vmp	Jmp	Pmp
3e+13	97.9%	100.4%	98.7%	100.1%	98.8%
1e+14	96.4%	99.8%	96.8%	99.8%	96.6%
5e+14	93.3%	99.4%	93.5%	99.1%	92.7%
1e+15	91.5%	98.6%	92.0%	97.2%	89.4%
5e+15	89.5%	97.3%	89.2%	95.0%	84.8%
5e+16	86.1%	94.2%	85.4%	89.9%	76.7%
1e+16	84.1%	92.6%	83.3%	85.9%	71.5%

Temperature coefficients for 28°C to 80°C.

Temperature coefficients are simplified approximations. More accurate temperature coefficients that capture non-linearities across the full temperature range are available upon request.

	Voc	Jsc	Vmp	Jmp	Pmp
	(V/°C)	(mA/cm²/°C)	(V/°C)	(mA/cm²/°C)	(mW/cm²/°C)
BOL	-0.0093	0.0079	-0.0098	0.0047	-0.1117
1MeV 1E14 e-/cm²	-0.0095	0.0080	-0.0101	0.0060	-0.1123
1MeV 1E15 e-/cm²	-0.0099	0.0084	-0.0101	0.0066	-0.1095
1MeV 1E16 e-/cm²	-0.0102	0.0056	-0.0103	0.0056	-0.1021