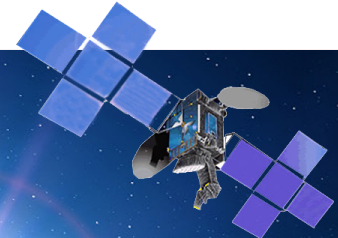


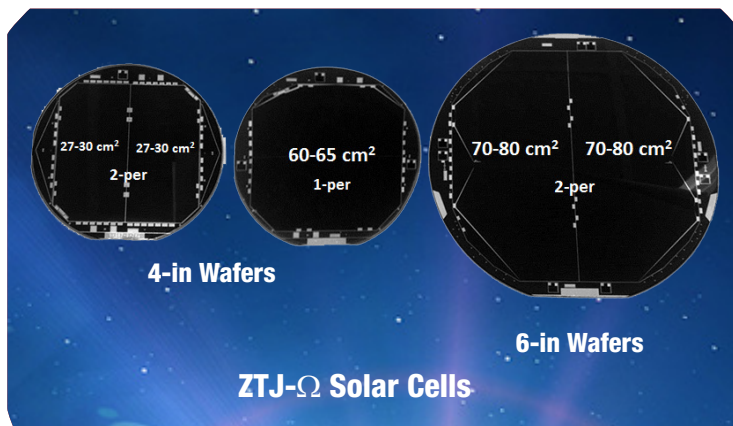
**The World Leader in
Space Power Solutions**

Over 3.5 million flight solar cells delivered!



ZTJ-Ω Space Solar Cell

Triple-Junction Solar Cell Optimized for LEO Environments



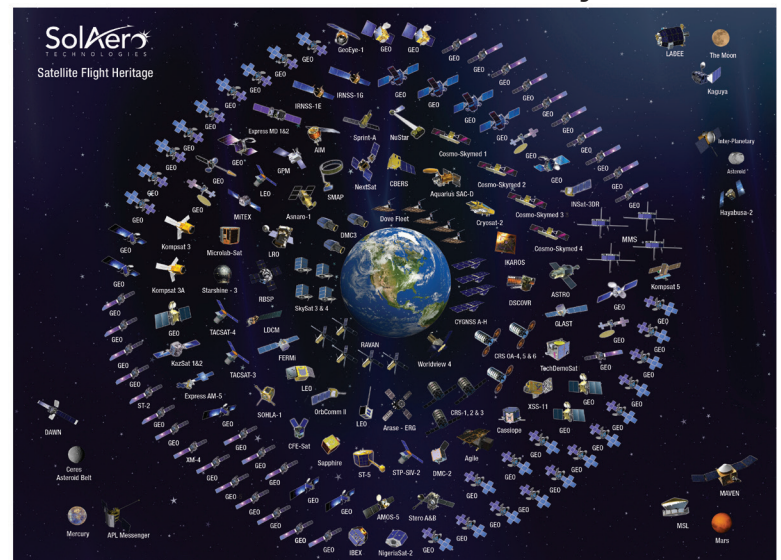
30.2%
Minimum Average Efficiency

Qualified & Characterized to the AIAA-S111-2014 Standards

FEATURES & CHARACTERISTICS

- Triple-Junction, n-on-p solar cell lattice matched on germanium substrate
- ZTJ cell optimized for LEO missions in environments dominated primarily by charged protons
- 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

On-Orbit Satellites Powered by SolAero



ZTJ-Ω Space Solar Cell

Triple-Junction Solar Cell Optimized for LEO Environments

BOL Performance

Typical Parameters @ AM0 (135.3 mW/cm²), 28°C

Typical Values	
BOL Efficiency (%)	30.2
Voc (V)	2.73
Jsc (mA/cm ²)	17.41
Vmp (V)	2.43
Jmp (mA/cm ²)	16.8

Remaining Factors after exposure to 3-MeV Proton Irradiation

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

Fluence (p+/cm ²)	Voc	Jsc	Vmp	Jmp	Pmp
4.5e9	0.99	1.00	0.98	0.99	0.97
2.3e10	0.98	0.99	0.97	0.99	0.96
8.8e10	0.95	0.97	0.94	0.97	0.91
3.4e11	0.91	0.91	0.90	0.90	0.81

*0.975 Pmp remaining factor for a typical 3 yr LEO mission at 650km and 30 degrees inclination with typical back-side shielding and 4 mil CMG/AR coverglass

Temperature Coefficients

BOL & EOL (1-MeV electron irradiation)

1-MeV Electron Fluence Group (e/cm ²)	Approx. 3-MeV Proton Fluence Equivalent (p+/cm ²)*	Voc (mV/°C)	Jsc (μA/cm ² /°C)	Vmp (mV/°C)	Jmp (μA/cm ² /°C)	Pmp (μW/cm ² /°C)
0	0	-6.7	8.5	-7.1	5.2	-108.0
6.5e+13	3.5e+10	-7.1	10.1	-7.5	7.8	-106.5
2.0e+14	1.2e+11	-7.2	11.3	-7.7	9.3	-102.0
1.0e+15	5.9e+11	-7.5	12.4	-7.9	12.2	-85.3

*Conversion to approximate 3-MeV proton fluence calculated using damage-displacement-dose fitting parameters for Pmp