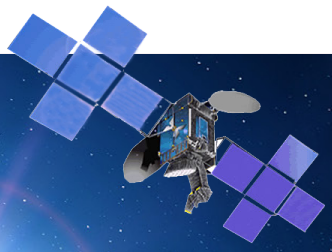
SolAero TECHNOLOGIES

PRELIMINARY DATASHEET
APRIL 2018

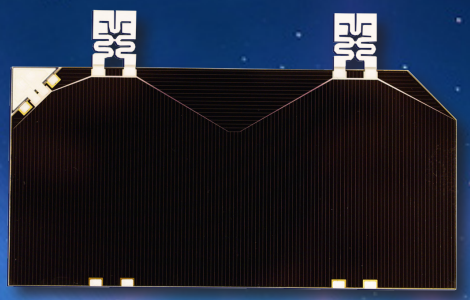


The World Leader in Space Power Solutions

Over 3.5 million flight solar cells delivered!

IMM-α Space Solar Cell

Highest Efficiency Space Solar Cell in Production



IMM-α CIC
(Coverglass Interconnected Cell)

32.0%
Minimum Average Efficiency

Space Qualification & Characterization to the AIAA-S111-2014 standards in progress

FEATURES & CHARACTERISTICS

- Inverted metamorphic n-on-p solar cell
- 180 µm thickness on rigid carrier substrate
- Solar cell mass of 49 mg/cm^2 which represents a 42% reduction as compared to the ZTJ solar cell
- Radiation hardened design @ 1-MeV, 1E15 e-/cm^2 fluence P/Po = 0.87 (ECSS post-radiation annealing)
- ~3% absolute remaining factor advantage versus ZTJ in charged proton environments with proton fluences equivalent to ~5e14 e-/cm^2 to 1e15 e-/cm^2, 1-MeV electrons
- 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

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IMM-α Space Solar Cell

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BOL Performance

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

Typical Values	
BOL Efficiency at Maximum Power Point (%)	32.0
Voc (V)	4.78
Jsc (mA/cm²)	10.66
Vmp (V)	4.28
Jmp (mA/cm²)	10.12

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-/cm²)	Voc	Jsc	Vmp	Jmp	Pmp
5e14	0.92	0.99	0.93	0.98	0.91
1e15	0.90	0.97	0.89	0.98	0.87
5e15	0.84	0.87	0.84	0.85	0.71

Temperature Coefficients

BOL & EOL (1 MeV electron irradiation)

Fluence (e-/cm²)	Voc (mV/°C)	Jsc (μA/cm²/°C)	Vmp (mv/°C)	Jmp (μA/cm²/°C)
BOL	-10.5	9.8	-11.2	6.7
5e14	-11.7	9.9	-12.5	5.2
1e15	-11.9	9.7	-12.0	3.3
5e15	-12.5	9.0	-12.8	7.6

*Projected temperature coefficients based upon data for similar materials and device structures

IMM-αCIC Mass

Coverglass Thickness (mil)	CIC Mass (mg/cm²)
2	70.6
3	76.9
4	83.3
6	96.0

MADE IN USA

AS 9100

ISO 9001 QUALITY ASSURANCE

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