SHARP

Sharp Silicon Coverglass-Interconnected Cell (CIC) Space Solar Cells

Space Qualified

Datasheet

Features

Silicon design – p-type PERC cells with 17.4% beginning of life (BOL) efficiency

Space Qualified – Radiation resistant substrate with printed electrodes exhibiting thermal cycle resistance

Affordability – Cost savings realized compared to dual- and triple junction cells

Customizable – Cell size and CIC thickness can be changed to match mission needs

Product Information	
Product Name	Sharp Silicon Space Solar Cells
Product Group	Space Qualified Solar

Product Description	
Cell Dimensions	Customizable sizes available
Cover Glass Thickness	0.1 mm, 0.21 mm and 0.3mm (to match mission requirements)
BOL Efficiency	17.4% (under AM0:136.7mW/cm^2, 25°C)
EOL Efficiency	10.8% (under AM0:136.7mW/cm^2, 25°C, after 1MeV electron irradiation 1x10^{15}e/cm^2)
	13.1% (under AM0:136.7mW/cm^2, 25°C, after 1MeV electron irradiation 1x10^{14}e/cm^2)

Electrical Data	
Voc (V)	0.665
Jsc (mA/cm^2)	46.8
Vmp (V)	0.543

Jmp (mA/cm^2)	43.8
FF	0.763
Pmax (mW/cm^2)	23.8

(under AM0:136.7mW/cm^2, 25°C)

Remaining Factors	Voc	Jsc	Vmp	Jmp	FF	Pmax	Eff
1x10^{14}	0.87	0.85	0.87	0.86	1.00	0.75	0.75
1x10^{15}	0.82	.074	0.82	0.75	1.00	0.62	0.62

(following 1MeV electron irradiation at rate 1x10^{12}e/cm^2/sec)