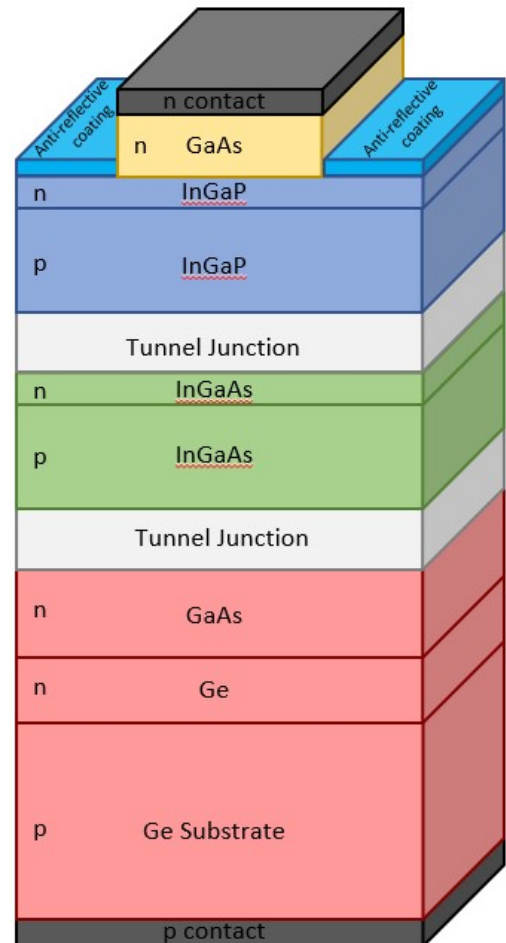


Sharp Space Solar Cell (Standard triple-junction)

Space Qualified, InGaP/GaAs/Ge Triple Junction

Datasheet



Features

Triple-Junction Design – Germanium-base, n-on-p type, 28.7% beginning of life (BOL) efficiency

Space Qualified – tested and manufactured according to the requirements of the Japan Aerospace Exploration Agency (JAXA)

Flight History – Extensive 15-year performance history supporting international space missions

Coverglass – Optional Sharp coverglass available for CIC configuration

Reverse Bias Protection – compatible with optional Sharp silicon diodes which protect adjacent cells from reverse bias

Product Information

Product Name Sharp Space Solar Cell (Standard triple-junction)

Product Group Space Qualified Solar

Product Description

Cell Dimensions Customizable sizes available starting from 4 cm², standard sizes include 30.18 cm², 33.15 cm², 60.36 cm², and 77.6 cm² cells.

Weight 86 mg/cm²

Substrate 150 ± 20 μm thick P-type Germanium

N contact Ti/Pd/Ag

P contact Ti/Pd/Ag

Coating AR Dual Layer Coating

BOL Efficiency 28.7% (under AM0:136.7mW/cm², 25°C)

EOL Efficiency 25.1% (under AM0:136.7mW/cm², 25°C, after 1MeV electron irradiation 1x10¹⁵e/cm²)

Electrical Data	4 cm ² cell	27.6cm ² cell	(Typical values observed)		
Voc (mV)	2673	2673			
Isc (mA)	70.3	485			
VL (mV)	2330	2330			
IL (mA)	67.3	464			
Pmax (mW)	156.8	1081			

(under AM0:136.7mW/cm2, 25°C)

Remaining Factors	VoC	Isc	Pmax	Vmp	Imp
3x10 ¹³	95.7	100	97.6	96.4	100
1x10 ¹⁴	93.6	99.7	95.1	94.6	100
3x10 ¹⁴	91.9	99.0	92.7	93.1	99.6
1x10 ¹⁵	89.5	96.8	87.5	90.5	96.7
3x10 ¹⁵	86.3	93.4	79.1	86.4	91.5

(following 1MeV electron irradiation at rate 1x10¹²e/cm²/sec)

Temperature Coefficients	Voc (mV/deg)	Isc (μA/deg)	Pmax (mW/deg)	Vmp (mV/deg)	Imp (mA/deg)
BOL	-6.24	41.0	-0.360	-6.12	29.0
1x10 ¹⁵	-6.18	51.0	-0.340	-6.46	45.0

(following 1MeV electron irradiation of 4 cm² cells at rate 1x10¹²e/cm²/sec)

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