SATLUTION

SAT Wings

Solar Panels for Satellites

LEO MEO and GEO satellite long term and reliable electrical power supply system is based on mass produced and can be customized solar cells in depending solar array configuration to fulfill different mission requirements.

The solution adopt upright lattice-matched structure of SATJ30 solar cells,provide exceeds 30% electrical energy average conversion.

Key features

Orbit : LEO,MEO,GEO

Substrates & size can be customized

long design life

High conversion efficiency average 30%

Pass diode protection

Variety of assembly

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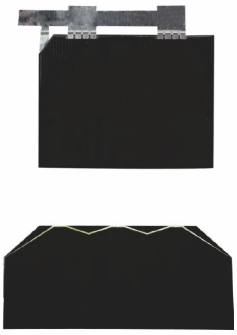
SATJ30

Design and Mechanical Data

Substrate Material	Ge
Base Material	GaInP/GaAs/Ge
Size (mm)	40.0×80.0，60.0×120.0，67.0×138.0
Thickness (μm)	180±20
Average Weight (mg/cm2)	⩽110
Service orbit	LEO, MEO, GEO



Typical Performance Data

Fluence (e/cm²)	BOL	1E14	5E14	1E15
Efficiency ηbare (%)	30	28.8	27	25.8
Short Circuit Jsc (mA/cm²)	17.5	17.4	16.8	16.3
Open Circuit Voc (V)	2.75	2.64	2.58	2.53
Current @ Max. Power Jm (mA/cm²)	16.6	16.4	16	15.5
Voltage @ Max. Power Vm (V)	2.45	2.38	2.28	2.25

AM0 (1353W/m2, T=25°C)

Temperature Gradients

Short Circuit Jsc (μA/cm²/°C)	12
Open Circuit Voc (mV/°C)	-5.6
Current @ Max. Power Jm (μA/cm² /°C)	9
Voltage @ Max. Power Vm (V/°C)	-5.8

Temperature Coefficient (20°C~80°C)

Description

Substrate	Ge
Solar cell structure	GaInP2/GaAs/Ge
GaAs growth method	MOCVD
Thickness	175μm ,140μm
Size(mm)	39.8×60.4 30.6×40.3 40×80
Bypass diode	Separate external bypass diode assembled at corner