

ENERGY SOLAR

Rigid Solar Array for Spacecraft - High Stiffness & Fast Expansion

Discover our Rigid Solar Array, a robust solution for spacecraft energy needs. Featuring high stiffness, rapid expansion, and long service life, this solar array is perfect for CubeSats, SmallSats, and other space vehicles, providing reliable energy supply and wide adaptability.

Product Introduction

The **Rigid Solar Array** is composed of a solar cell array, substrate, expansion drive mechanism, pressing and unlocking mechanism, and other components. This array can achieve different expansion modes such as body mounting, single folding, and multiple folding, catering to the in-orbit energy supply needs of various types of space vehicles.

Product Image

Product Characteristics

- **High Stiffness:** The development process is stable, the product is mature and reliable, and the adaptability is wide.
- **Fast Expansion:** The array can be deployed in a few seconds, ensuring the safety of the entire spacecraft.
- **Long Life:** Stable in orbit, with a service cycle exceeding 15 years.

Technical Characteristics

Solar Cells			
Type	TJ28	TJ30	TJ32
conversion efficiency (%)	28.3	30	32
thickness (mm)	0.080/0.145/0.175		
Areal density (g/m²)	430/850/940		
Short-circuit current density (mA/cm2)	17	17.67	19.46
Open-circuit voltage (mV)	2650	2700	2590
Current density at max. Power (mA/cm2)	16.2	17.13	18.83
Voltage at max. Power (mV)	2340	2396	2280
Panels			
Type	PCB	Aluminium alloy	Carbon fiber aluminum honeycomb
thickness (mm)	1.8	3/5	12/15/25
Areal density (kg/m2)	4.5	5.5	2.5~3
Key features	Short production cycle, 1U-12U standard interface design, extensible	Low cost	Light weight, high maturity
Release Device			
Type	Explosive	SMA	Hot knife
Release time	<160ms	1s~45s	<1min
Key features	Short unlocking time, high product maturity	Small impact, test reused, structure safe	Light weight, miniaturization

Solar Cells			
Driving Mechanism			
Type	Volute spring hinge	Flexure hinge	Hinge hinge
Key features	High reliability and high deployment stiffness	Light weight, low cost	Flexible mechanical interface, light weight

Typical Application

The **Rigid Solar Array** is ideal for custom panel manufacturing and high-volume manufacturing for CubeSats and SmallSats. These solar arrays provide reliable energy supply for:

- **CubeSats:** Small, cube-shaped satellites used for a variety of space missions.
- **SmallSats:** Miniaturized satellites used in research, communication, and observation.
- **Space Vehicles:** Various types of spacecraft requiring reliable energy sources for extended missions.
Discover more about our [space energy solutions](#).