



ibeos

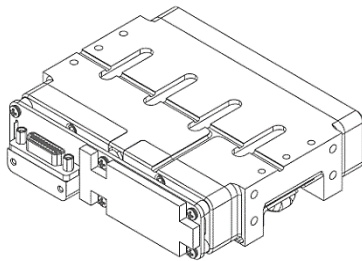
Modular SmallSat Battery



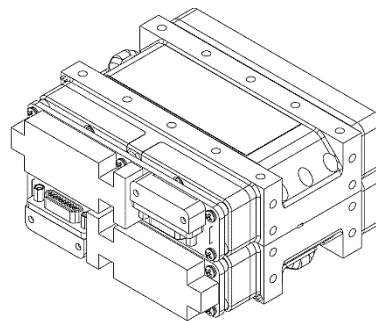
OVERVIEW

Ibeos' 45-Watt-hour, 14-Volt lithium-ion battery module is a radiation tolerant, fault tolerant, and ISS compliant energy storage system. The aluminum and PEEK packaging is rigid, thermally conductive, and enables flexible mechanical and thermal spacecraft interfacing. A thermistor and polyimide thermofoil heater allow for thermal control. Radiation tolerant battery interface electronics (BIE) provide a remove-before-flight inhibit in addition to over-voltage, over-current, and under-voltage protection. The chassis design enables mechanical integration with a second module to achieve a 90-Watt-hour capacity. The individually protected/inhibited battery modules can be connected in parallel to achieve a desired capacity and charge/discharge current. This battery module is designed for turn-key integration with the Ibeos 150-Watt CubeSat EPS.

45-Watt-hour Battery



90-Watt-hour, Two-Module Assembly



SPECIFICATIONS

Overall Dimensions	94.5 x 84.1 x 23.1 mm
Mass	< 410 g
Capacity	45 Wh
Maximum Discharge Rate	6.5 A
Maximum Charge Rate	1.6 A
Voltage	13.2 V to 16.8 V
Operating Cell Temperature	10 to 45 °C
Heater Power @ 16V	8 W
Single Event Effects	Operate through: LET > 37 Survive: LET > 55
Total Ionizing Dose	30 kRad (Si)

Packaging

- Side or bottom mounting
- Aluminum chassis and PEEK cell capture plates
- External aluminum surfaces treated with MIL-DTL-5541 Type II, Class 3 chem film
- Kapton thermofoil heater

Built-In Protection

- Over-voltage, under-voltage
- Over-current charge and discharge
- Remove-before-flight
- Positive temperature coefficient (PTC) overcurrent protection at each cell

Modularity & Scalability

- Designed for mechanical/thermal integration with a second module
- Modules can be connected in parallel to meet energy storage, charge/discharge current, or redundancy requirements

Electrical Interface

- 21-Pin Micro-D connector
- Connections for
 - Protected power
 - Cell voltage sense
 - Heater
 - 10k NTC thermistor (potted on a central cell)

Inquiries

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