



Cell Engine

Power supply solution for LEO and small GEO satellites

LEO and small GEO satellites long term and reliable electrical power storage solution is based on mass produced space cells in depending battery configuration to fulfill different mission requirements.

Our solution adopt SP architecture (strings in parallel) of Sc33650/Sc33117 space cells, provide 50W to 2.5KW output to satellite platform.

This flight proven solution experienced more than 19 spacecrafts in orbit by the end of 2023.

Key features

Mass products flight proven

High energy density

Long design life (LEO 8-10 years, GEO 20 years)

High DoD (80% in GEO, 40% in LEO)

Cell stainless steel casing and hermetically sealed

Compact and scalable configuration in s and p

Circuit breaker and venting at cell level

Thermal sensors, connector for power and telemetry



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Sc33650 cell



| | |
|--------------------------|----------------------|
| Rated capacity (Ah) | 5 |
| Rated energy (Wh) | 18 |
| Initial capacity (Ah) | ≥5.2@4.1V,0.5C,20°C |
| Operating voltage (V) | 2.75~4.1 |
| Size (mm) | φ33*65 |
| Weight (g) | 115±5 |
| Energy density (Wh/kg) | ≥160 |
| Internal resistance (mΩ) | ≤20 |
| Charge rate | 0.5C |
| Cycle life | 40% DOD 40000 cycles |

Sc33117 cell



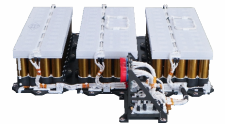
| | |
|--------------------------|----------------------|
| Rated capacity (Ah) | 10 |
| Rated energy (Wh) | 36 |
| Initial capacity (Ah) | ≥10.5@4.1V,0.5C,20°C |
| Operating voltage (V) | 2.75~4.1 |
| Size (mm) | φ33*117 |
| Weight (g) | 225±5 |
| Energy density (Wh/kg) | ≥170 |
| Internal resistance (mΩ) | ≤10 |
| Charge rate | 0.5C |
| Cycle life | 40% DOD 40000 cycles |

Sc33650 11S10P battery



| | |
|---------------------------------|---|
| Operating voltage (V) | 33-45 |
| Output capacity (Wh) | 1200W×0.6h |
| Balance management | Independent balance, 4.0V start and control |
| Initial capacity (Ah) | ≥50 |
| Size (mm) | 450×220×175 |
| Weight (kg) | ≤17.85 |
| Design life | LEO 10 years |
| DOD (%) | ≤40% |
| Operating temperature (°C) | 10-35 |
| Number of temperature telemetry | 4 |

Sc33117 11S14P battery



| | |
|---------------------------------|---|
| Operating voltage (V) | 33-45 |
| Output capacity (Wh) | 3700W×0.6h |
| Balance management | Independent balance, 4.0V start and control |
| Initial capacity (Ah) | ≥140 |
| Size (mm) | 595×615×150 |
| Weight (kg) | 43.2 |
| Design life | LEO 10 years |
| DOD (%) | ≤40% |
| Operating temperature (°C) | 10-35 |
| Number of temperature telemetry | 6 |