

# 2ER18505M (2P)

3.6 V nominal · 7,200 mAh stated pack capacity · Two ER18505M cells connected in parallel

| NOMINAL VOLTAGE | NOMINAL CAPACITY | MAX. CONTINUOUS CURRENT* | MAX. PULSE CURRENT* |
|-----------------|------------------|--------------------------|---------------------|
| <b>3.6 V</b>    | <b>7,200 mAh</b> | <b>2,000 mA</b>          | <b>4,000 mA</b>     |

## Product description

The 2ER18505M battery pack consists of two ER18505M spiral-type lithium-thionyl-chloride cells connected in parallel (2P). The parallel configuration keeps the nominal voltage at 3.6 V and increases the available capacity and current capability. The pack is a primary, non-rechargeable battery and must not be charged.

## Key features

- Two ER18505M cells in parallel (2P)
- Increased capacity versus a single cell
- Operating temperature: -55 °C to +85 °C\*
- Nominal voltage remains 3.6 V
- High-pulse spiral-cell construction
- For professional equipment integration

## Typical applications

Smart metering · Security and alarm systems · RFID and IoT devices · Wireless transmission · Industrial instrumentation · Remote monitoring

\* Current ratings are calculated by adding the supplied single-cell limits (1,000 mA continuous and 2,000 mA pulse) for two parallel cells. They are theoretical pack-level values and require confirmation against cell matching, interconnections, thermal design, pulse duration and the final application.

Capacity note: this datasheet uses the requested 7,200 mAh pack rating. The supplied LiXing single-cell document lists 3,500 mAh per cell; two such cells mathematically give 7,000 mAh. Confirm that the cells supplied for this pack are rated 3,600 mAh each before publishing 7,200 mAh as a guaranteed nominal capacity.

## Electrical and physical specifications

| Parameter                             | 2ER18505M pack specification                                                                                      |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Pack configuration                    | 2 cells in parallel (2P); 1S2P equivalent                                                                         |
| Cell chemistry                        | Lithium-thionyl chloride (Li-SOCl <sub>2</sub> )                                                                  |
| Nominal voltage                       | 3.6 V                                                                                                             |
| Nominal capacity                      | 7,200 mAh as requested; confirm cell rating (see capacity note on page 1)                                         |
| Nominal energy (calculated)           | 25.92 Wh at 3.6 V × 7.2 Ah                                                                                        |
| Maximum continuous discharge current* | 2,000 mA calculated from 2 × 1,000 mA per cell                                                                    |
| Maximum pulse current*                | 4,000 mA calculated from 2 × 2,000 mA per cell; pulse conditions must be verified                                 |
| Typical capacity at 4 mA per cell     | About 6,800 mAh for two cells, based on 3,400 ± 100 mAh per cell in the supplied document                         |
| Operating temperature range           | –55 °C to +85 °C (cell specification; pack-level limits may be narrower)                                          |
| Cell dimensions                       | Each cell: max. Ø 18.5 mm × 50.5 mm height                                                                        |
| Pack dimensions                       | Depends on holder, spacing, welds, insulation and enclosure; not specified                                        |
| Approximate cell-only mass            | About 58 g for two cells (approx. 29 g each), excluding interconnects and enclosure                               |
| End-of-discharge voltage              | 2.0 V per cell test condition in the supplied manufacturer document; system cut-off must be designed for the pack |
| Rechargeability                       | Non-rechargeable — do not charge                                                                                  |

### Design notes

Parallel cells should be of the same model, chemistry, production lot and similar state of charge. Use suitable cell matching, insulation, connection methods and short-circuit protection. Do not assume the calculated current ratings are approved pack ratings without validation by the cell supplier and pack designer.



## Performance, dimensions and operating limits

### Temperature range

The cell manufacturer specifies an operating range from  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ . Available capacity, pulse response and voltage under load can vary with temperature. The complete pack may have a more limited range depending on the interconnects, insulation and enclosure.

### Configuration

| PACK TYPE                 | CELL ARRANGEMENT    | VOLTAGE EFFECT | CAPACITY EFFECT      |
|---------------------------|---------------------|----------------|----------------------|
| <b>2ER18505M<br/>(2P)</b> | 2 cells in parallel | Remains 3.6 V  | Adds cell capacities |

### Manufacturer test data for one cell

| Test condition                                        | Within one year  | After one year of storage |
|-------------------------------------------------------|------------------|---------------------------|
| 0.82 k $\Omega$ load, 2.0 V cut-off, room temperature | $\geq 850$ h     | $\geq 800$ h              |
| 400 mA discharge, 2.0 V cut-off, room temperature     | $\geq 2,650$ mAh | $\geq 2,500$ mAh          |

The values above are taken from the supplied LiXing manufacturer pages for a single ER18505M cell. They are not guaranteed pack performance figures. Parallel-pack performance depends on cell matching, load profile, connection resistance, temperature and end-of-discharge criteria.

### Mechanical design

The dimensions and mass of the assembled 2P pack cannot be stated reliably without the chosen physical arrangement, interconnection method and enclosure. The two cell bodies alone have a combined approximate mass of 58 g. Allow additional space and mass for insulation, welds or holders, leads and any enclosure.

## Safety, handling and integration

Lithium-thionyl-chloride cells are primary batteries and are non-rechargeable. Never charge the pack. Avoid short circuit, reverse connection, crushing, disassembly, incineration or exposure beyond the specified temperature range. Incorrect use can cause leakage, venting, overheating or other hazards.

### Design and installation checks

| Check         | Requirement                                                                                                                           |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Cell matching | Use two compatible cells of the same model and equivalent state of charge; confirm parallel connection suitability with the supplier. |
| Polarity      | Verify polarity and connection layout before installation.                                                                            |
| Load profile  | Check continuous current, pulse amplitude, pulse duration and repetition rate against validated pack limits.                          |
| Temperature   | Assess ambient temperature and temperature inside the final enclosure.                                                                |
| Protection    | Design to prevent accidental short circuits, reverse connection and unintended charging.                                              |
| Storage       | Follow the cell manufacturer's storage instructions and shelf-life conditions.                                                        |
| Compliance    | Assess transport, end-product and disposal requirements applicable to the destination market and application.                         |

### Source and disclaimer

This LithiumElements document is an English-language technical summary based on the ER18505M manufacturer information supplied for this task (Wuhan LiXing (Torch) Power Sources Co., Ltd.) and the requested two-cell parallel pack configuration. Single-cell ratings are manufacturer-derived; pack-level current ratings are calculations, not independently certified ratings. The requested 7,200 mAh capacity conflicts with the supplied single-cell nominal capacity of 3,500 mAh (which gives 7,000 mAh for two cells). Confirm the exact cell version and rated capacity with the supplier before product release. This document does not replace the original manufacturer datasheet or safety documentation.

All pack specifications must be validated on the finished assembly under the intended operating conditions.