

ER18505M

3.6 V nominal · Primary lithium-thionyl-chloride (Li-SOCl₂) cylindrical cell

NOMINAL VOLTAGE	NOMINAL CAPACITY	MAX. CONTINUOUS CURRENT	MAX. PULSE CURRENT
3.6 V	3,500 mAh	1,000 mA	2,000 mA

Product description

ER18505M is a cylindrical primary lithium-thionyl-chloride cell. It is non-rechargeable and must not be charged. The technical values below are transcribed from the supplied source pages; actual performance depends on load, temperature and cut-off voltage.

Technical parameters

Parameter	Specification	Test condition / note
Nominal voltage	3.6 V	At 36 kΩ (approximately 0.1 mA), 20 ± 2 °C
Nominal capacity	3,500 mAh	At 0.82 kΩ (approximately 4.0 mA), 20 ± 2 °C; end voltage 2.0 V
Typical discharge capacity	3,400 ± 100 mAh	Source page specifies 4 mA discharge; end voltage 2.0 V
Operating temperature range	–55 °C to +85 °C	Cell specification
Maximum pulse current	2,000 mA	Pulse conditions should be checked for the application
Maximum continuous discharge current	1,000 mA	Verify application-specific thermal and voltage limits
Reference mass	About 29 g	Per cell
Construction	Thionyl chloride, lithium anode, acetylene black, separator and stainless-steel cell can	As described in the supplied source

Capacity values are stated under the manufacturer's test conditions and may vary with discharge current, temperature and end voltage.

Performance characteristics

Electrical performance and service-life values from the supplied ER18505M technical pages.

Open-circuit voltage

Condition	Test temperature	Within one year under normal temperature storage	After one year's storage under normal temperature
Room temperature	$20 \pm 2\text{ }^{\circ}\text{C}$	3.63–3.70 V	3.63–3.72 V
Low temperature	$-40 \pm 2\text{ }^{\circ}\text{C}$	3.63–3.70 V	3.63–3.72 V
High temperature	$60 \pm 2\text{ }^{\circ}\text{C}$	3.63–3.74 V	3.63–3.74 V

Working voltage under load

Test condition	Room temperature	Low temperature ($-20 \pm 2\text{ }^{\circ}\text{C}$)	High temperature ($60 \pm 2\text{ }^{\circ}\text{C}$)
Discharge load: 0.66 k Ω	$\geq 3.4\text{ V}$ (within one year); $\geq 3.2\text{ V}$ (after one year)	$\geq 3.1\text{ V}$; $\geq 3.0\text{ V}$ after one year	$\geq 3.5\text{ V}$; $\geq 3.3\text{ V}$ after one year

Working life and discharge capacity

Test	Condition	Within one year	After one year's storage
Working life	0.82 k Ω load; 2.0 V end voltage; $20 \pm 2\text{ }^{\circ}\text{C}$	$\geq 850\text{ h}$ at room temperature; $\geq 425\text{ h}$ at $-20\text{ }^{\circ}\text{C}$; $\geq 800\text{ h}$ at $60\text{ }^{\circ}\text{C}$	$\geq 800\text{ h}$ at room temperature; $\geq 400\text{ h}$ at $-20\text{ }^{\circ}\text{C}$; $\geq 750\text{ h}$ at $60\text{ }^{\circ}\text{C}$
Discharge capacity	400 mA discharge; 2.0 V end voltage; $20 \pm 2\text{ }^{\circ}\text{C}$	$\geq 2,650\text{ mAh}$	$\geq 2,500\text{ mAh}$

These are source test results for the cell, not guaranteed performance figures for every application. Test setup, load profile and cut-off voltage affect results.

Dimensions and discharge characteristics

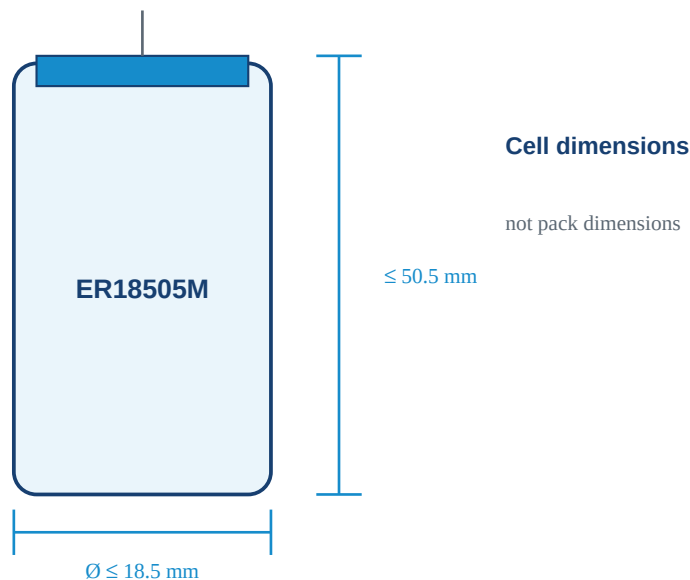
Mechanical dimensions and current-dependent discharge behavior

Outline dimensions

Model	Maximum diameter	Maximum height
ER18505M	≤ 18.5 mm	≤ 50.5 mm

Discharge curve at 20 °C

The source graph compares discharge curves at 400 mA, 100 mA and 4 mA. The lower the discharge current, the longer the discharge duration shown in the graph. Exact runtime depends on the application load and the selected end voltage.



Safety and handling

Primary lithium cells are non-rechargeable. Do not recharge, short-circuit, disassemble, crush, incinerate or reverse-connect the cell. Keep away from children and conductive objects. Use suitable insulation and system-level protection. Store in a cool, dry, ventilated place and follow the applicable transport and disposal requirements.

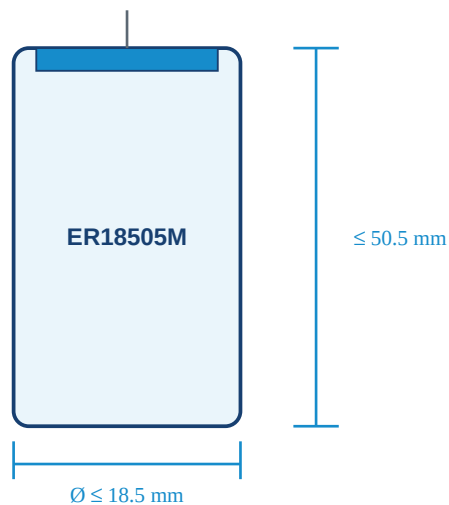
Source note: This LithiumElements technical summary was prepared from the technical pages supplied for model ER18505M (document reference Q/LX.S.E.09.009-2020, revision B/0). It is a reformatted summary and does not replace the original manufacturer's complete specification or safety documentation. Verify all ratings with the supplier before design-in or publication.

Appendix — cell outline and discharge curve

ER18505M primary lithium-thionyl-chloride cell · source-derived reference information

Cell outline dimensions

Model	Maximum diameter	Maximum height
ER18505M	≤ 18.5 mm	≤ 50.5 mm

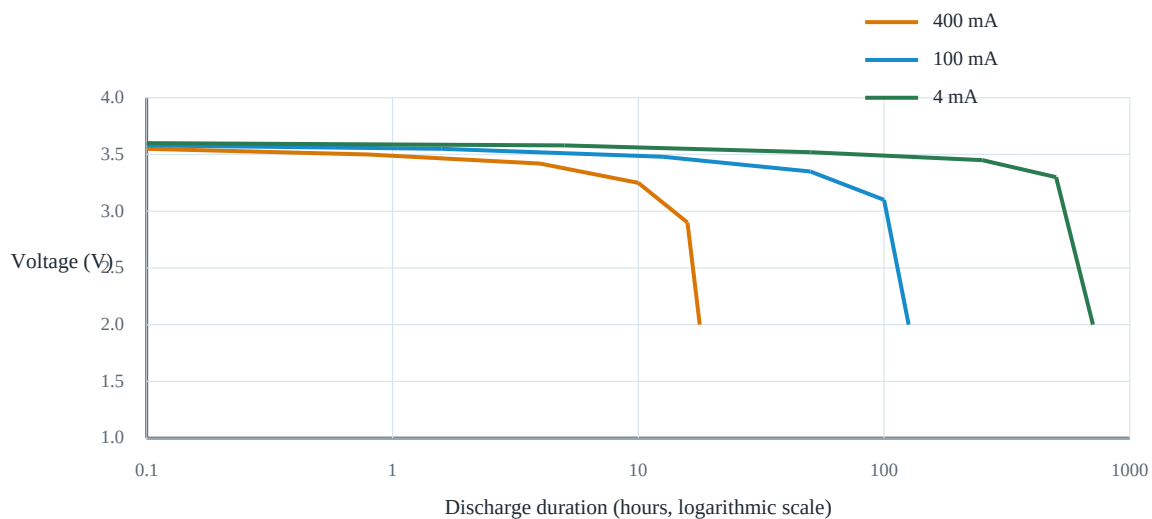


Cell dimensions

Maximum dimensions
not assembled-pack size

Discharge curve at 20 °C

The manufacturer's graph compares discharge at 400 mA, 100 mA and 4 mA. The schematic below illustrates the qualitative relationship only; it is not digitized test data.



Safety note: This chart is illustrative, not a substitute for the manufacturer's original measured discharge curve. Actual runtime varies with current, temperature, cell age and cut-off voltage.