

# Lid Systems for Li-Ion Batteries and Capacitors with Glass-to-Aluminium Sealed Terminals

Enhanced lifetime and long-term hermeticity through thermally stable and electrolyte resistant glass sealing

## Application requirements

The use of lithium-ion batteries and capacitors for rechargeable applications such as electrical vehicles or wind and solar energy requires these devices to remain hermetically sealed over long periods of time.

To achieve long-term hermeticity, the materials for insulating the battery terminals must fulfill two key criteria: First, they must be long-term stable at high temperatures. And second, all materials must show reliable resistance against chemical corrosion.

## Application Lithium Ion Battery

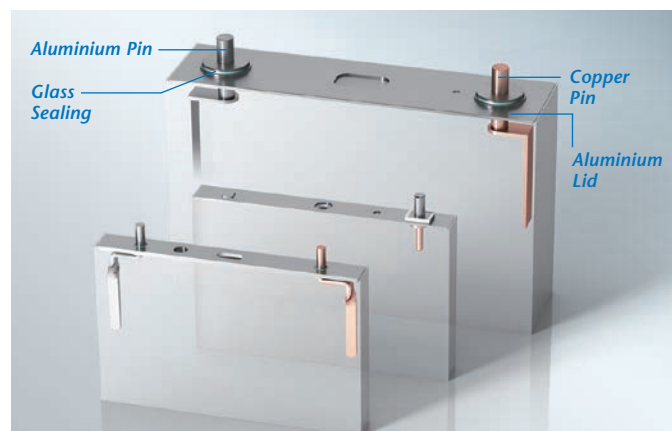
### Advantages

Enhanced battery lifetime and long-term hermeticity

- **Higher thermal stability of the glass seal**
- **Excellent electrolyte resistance**  
The specially selected glass type is highly resistant to lithium electrolytes and HF

Added benefits

- **Easy integration into existing production processes** through customized designs
- **From prototype to mass production**  
SCHOTT is a reliable partner with full development and production capabilities



Lid systems for prismatic battery cells with glass-to-aluminium sealed terminals

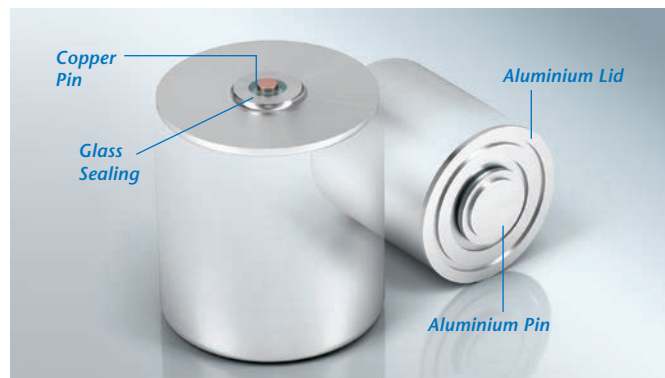
## Product information GTAS® lid system

### Long-lasting hermeticity

While standard polymer sealing materials may often fail to meet these requirements in long-term operation due to their organic nature, SCHOTT's new GTAS® technology for battery terminals has been developed to enable a cell design with durable hermeticity.

### Complete battery lid system

Based on extensive experience with primary battery packaging and hermetic sealing technology, SCHOTT now offers the complete battery and capacitor lid system for both prismatic and cylindrical shape battery cells with glass-to-aluminium sealed terminals. The lid systems can be welded directly onto the cell case.



Lid systems for cylindrical battery cells with glass-to-aluminium sealed terminals

## Product characteristics

- Long-lasting gas and pressure tightness
- High temperature resistance
- Chemical resistance
- Reliable electrode connections
- High mechanical strength
- High electrical isolation

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## Application Capacitor

### Advantages

Enhanced capacitor lifetime and long-term hermeticity

- **Higher thermal stability of the glass seal**
- **Excellent electrolyte resistance:** The specially selected glass type is highly resistant to electrolytes

Reduced size of capacitor

- **Enhanced performance:** Long-term hermeticity of the terminal seals can enable an overall size reduction of the capacitor

Added benefits

- **Easy integration into existing production processes** through customized designs
- **From prototype to mass production:** SCHOTT is a reliable partner with full development and production capabilities

For detailed product information about SCHOTT GTAS®, please refer to front page.

## Experience

The development of the new GTAS® technology is based upon more than 70 years of glass-to-metal sealing know-how.

- **A world leader in hermetic packaging**  
With experience since the 1930s, we are a world leading developer and manufacturer of hermetic packaging solutions for the reliable, long-term protection of sensitive electronics with glass-to-metal sealing technology.
- **Sealing of primary batteries**  
More than 20 years of experience in the design and production of battery endseals for lithium primary batteries with glass-to-metal sealing.
- **Trusted automotive supplier**  
For several decades, SCHOTT has been a trusted supplier to the automotive industry: our hermetically sealed feed-throughs and housing components provide long-term protection from damaging environmental influences, thereby contributing to the safety and comfort of the passengers. All of our automotive production facilities are certified according to TS 16949.



## About SCHOTT

SCHOTT is an international technology group with more than 125 years of experience in the areas of specialty glasses and materials and advanced technologies. SCHOTT ranks number one in the world with many of its products. Its core markets are the household appliance, solar power, pharmaceuticals, electronics, optics, transportation and architecture industries.

The SCHOTT Group maintains close proximity to its customers with manufacturing and sales units in all major markets. Its workforce of around 17,000 employees generated worldwide sales of approximately 2.9 billion euros for the 2010/2011 fiscal year. SCHOTT AG, with its headquarters in Mainz (Germany) is owned by the Carl Zeiss Foundation.

Electronic Packaging  
SCHOTT North America, Inc.  
15 Wells Street  
Southbridge, MA 01550  
USA  
Phone: +1 508 765-7450  
Fax: +1 508 765-7410  
epackaging@us.schott.com

[www.us.schott.com/epackaging](http://www.us.schott.com/epackaging)

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