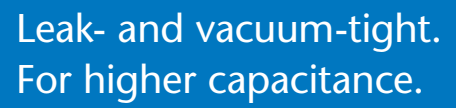




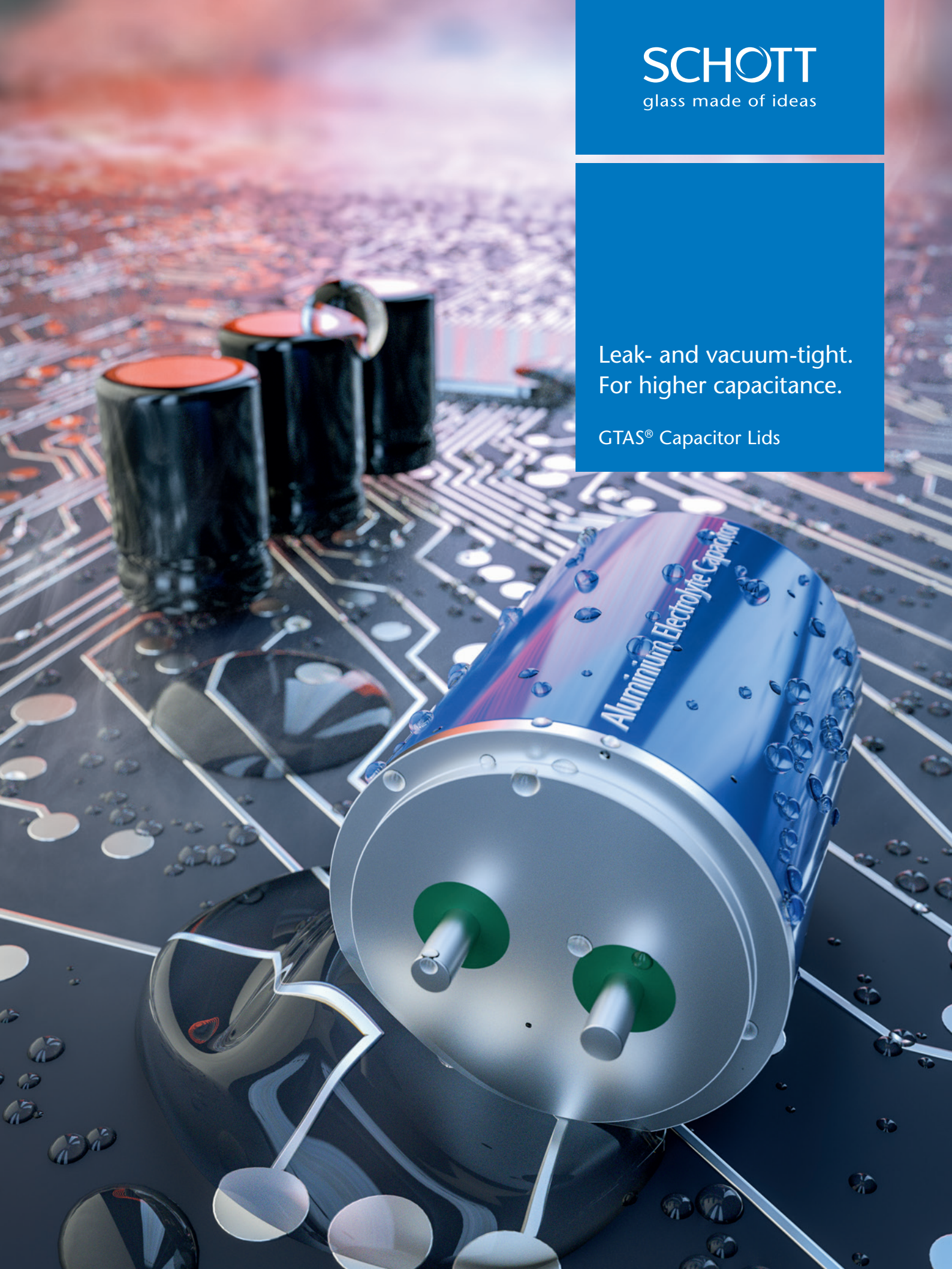
SCHOTT
glass made of ideas



Leak- and vacuum-tight.
For higher capacitance.



GTAS® Capacitor Lids



New: GTAS® Leak-tight, Glass Sealed Lids for Aluminium Electrolyte Capacitors

Stops electrolyte dry-out, enabling capacitors to maintain high capacitance

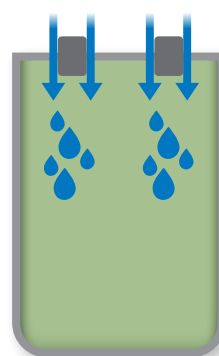
Electrolyte leakage impacts capacity

Aluminium Electrolyte Capacitors are prone to electrolyte dry-out over the lifetime of their application. Even small amounts of moisture that penetrate through an imperfect terminal seal can, over time, result in the formation of gases inside the capacitor.

Electrolyte dry-out continuously deteriorates performance and is often counter acted by a number of measures, such as oversizing the capacitor design or using two capacitors instead of one.

A common cause for the loss of electrolyte is evaporation via the polymer sealing of the capacitor terminals. Polymers as all organic materials are affected by aging processes and thus can become brittle and lose their gas-tightness over time.

Aging affects polymer sealing

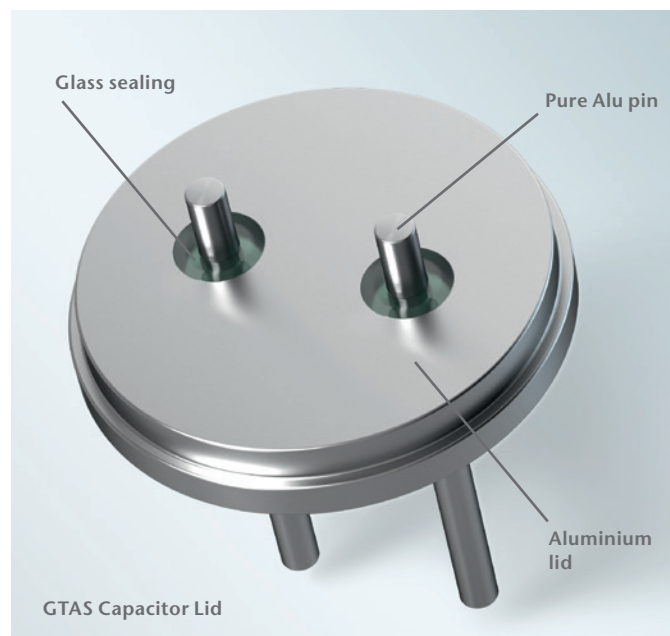


Humidity intrusion



Electrolyte Evaporation

~ 20% capacity loss



GTAS® Gas-tight Capacitor Lids

are newly developed to eliminate the electrolyte dry-out in aluminium electrolyte capacitors by using **a high performing glass seal for the capacitor terminals, replacing the organic sealing material.**

As a result the capacitor terminals are hermetically sealed into the aluminium lid (GTAS: glass-to-aluminium seals) and thus protect the capacitor from moisture intrusion via the pin sealing.

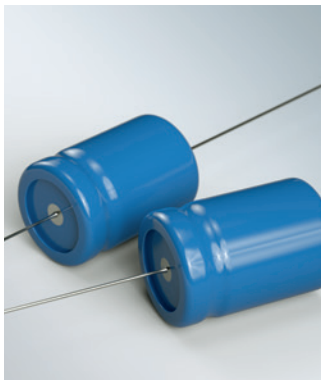
Glass-to-aluminium sealing is a proprietary technology developed based on SCHOTT's expertise in specialty glass and glass-to-metal sealing (GTMS) since 1939.

Glass-to-metal sealing remains gas-tight, a proven mass market lid technology

A preferred solution, typically used for electronic or electro-chemical components is the sealing of pins with inorganic, non-aging materials like glass. This is commonly called a Glass-to-Metal Seal (GTMS) and is used with materials like steel, kovar and others. Glass-to-metal sealing is a standard packaging technology for many mass market components like automotive sensors, quartz oscillators and photo diodes.



Standard glass-to-metal seals for millions of Lithium-Thionyl Batteries



Axial Type



Radial Type



Snap in Type



Large Can Type

GTAS leak-tight, glass sealed lids can be customized for small and large can type aluminium electrolyte capacitors, such as: Radial type | Axial type | Snap in type | Supercapacitors | Electric Double Layer Capacitors

Product Advantages

- High temperature resistance, from -40°C to +150°C
- Elimination of electrolyte dry-out and humidity penetration into the cell housing
- Reduction of capacity losses over time by up to 60%
- Smaller capacitor designs
- Increase of capacitance
- Up to 20% reduction in electrolyte volume possible
- Improvement of internal resistance by > 50% which enables a longer shelf life
- Long product life
(values depend on capacitor design)

Product Features

Specifications	
Electrical isolation	Small designs: $10^8 \Omega$ to $10^9 \Omega$ Large designs: $10^7 \Omega$ to $10^8 \Omega$
Chemical resistance	High against range of standard electrolytes
Temperature resistance	High (from -40°C to + 150°C)
Pressure tightness	High, > 10 bar for the glass-to-aluminium seal
Mechanical strength	High, depending on dimension even very high
Sealing material	SCHOTT glass
Pins/Lid	Aluminium
Lifetime	15 years

Applications

New designs of Aluminium Electrolyte Capacitors, e.g. Electric Double Layer Capacitors are currently in development for upcoming application fields like electric vehicles, high power applications, renewable energy applications and many more. These new application fields pose new technical requirements on the capacitor demanding higher or longer lasting performance. GTAS leak-tight capacitor lids can enable small and large capacitor designs to fulfill such requirements.



EV/ HEV/ E-Bus



Defense & Aerospace



Industrial



Renewable Energy

About SCHOTT

For more than 130 years, the international technology group SCHOTT has been developing and manufacturing special glasses and materials as well as components and systems to improve people's lives. About 15,000 employees around the world are committed each day to the needs of our customers. As a business unit of SCHOTT, Electronic Packaging (EP) manufactures hermetic housings and other components for the reliable, long-term protection of sensitive electronics. SCHOTT has experience in glass-to-metal sealing technology since 1939 and is a world leader in hermetic packaging of high volume automotive electronics such as airbag inflator headers, sensor housings and battery seals.

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