

# Glass-to-metal Sealed Feedthroughs for Sensor Applications

## Product Information

SCHOTT's glass-to-metal sealed (GTMS) feedthroughs protect various kinds of sensors from aggressive chemicals and extreme temperature conditions. The feedthroughs can provide absolute hermeticity to avoid electronic failure due to harsh environments (e.g. oils).

The design (e.g. pin count, layout and materials) of the feedthroughs can be customized according to the requirements of the end applications. Similarly, the manufacturing process can also be individually adjusted to meet individual customer requirements.

## Advantages

- Light-weight material
- Media resistance
- Non-aging material leads to longer sensor lifetime
- Wide temperature stability is suited for cryogen applications (e.g. fluid gases)

## Available Coatings

- Electroless nickel
- Electrolytic nickel
- Electrolytic gold (soft/hard AU)

## Technical Information

**Gas-tight:**  $1 \times 10^{-8}$  mbar x l/s

**Temperature stability:**  
-200 °C to > 250 °C

**Pressure resistance:** High

## Applications

### Industry examples

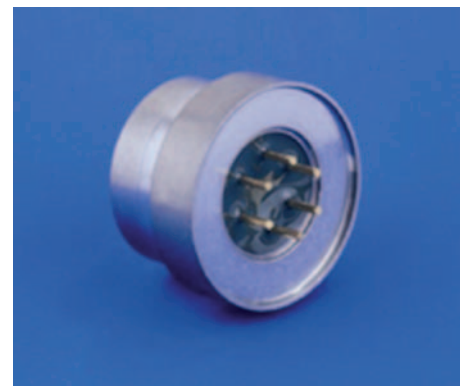
- Pressure sensors
- Flow sensors
- Humidity sensors

### Automotive examples

- Acceleration sensors
- Gyro sensors
- Flow sensors
- Pressure sensors

### Consumer goods (notebooks, mobiles, cooking material) examples

- Gyro sensors
- Gas sensors



*Feedthroughs for pressure and flow sensors*



*Feedthrough for humidity sensors*

# Variety of Packaging Solutions for Sensitive Electronic Components

## Glass-to-Metal Sealing Technology

For more than 70 years, SCHOTT has been developing, manufacturing and perfecting hermetic packaging components in which wiring is guided through metal and then insulated using melted glass or ceramic. Extensive stress tests show that this bond remains completely sealed, even under the most difficult environmental conditions, enabling long lifetimes of several decades for the enclosed electronic components.

## Ceramic-to-metal sealing Technology

In cases whereby increasingly miniaturized packages are required, the use of multilayer ceramics (H/LTCC, High/Low Temperature Cofired Ceramic) offers significant advantages. To meet these demands, SCHOTT provides small metal packages with an optical interface and one HTCC ceramic feedthrough per long side, for example.

## From small sizes to large scales

SCHOTT Electronic Packaging's technical expertise ranges from miniature hermetic packages to large-scale feedthroughs. Our technique is suited for even the smallest housings that are not much larger than the head of a pin (1.2 millimeters) all the way to high-voltage feedthroughs with diameters up to 800 millimeters.

## About SCHOTT Electronic Packaging

SCHOTT Electronic Packaging is a worldwide leading supplier of hermetic packaging solutions for the reliable, long-term protection of sensitive electronic devices. Since the 1930s, we have been developing, manufacturing and optimizing hermetic packaging solutions by using specialized glass, glass-to-metal and today also ceramic-to-metal sealing technology.

More than 600 scientists and engineers are working for and with SCHOTT customers all over the world, while setting the pace by developing new, cutting-edge technologies for the requirements of today and tomorrow.

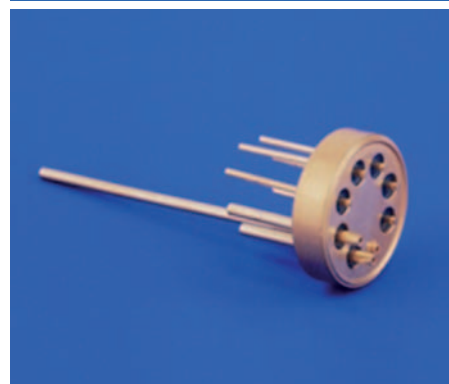
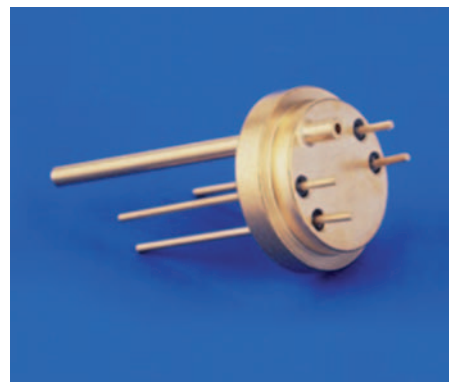
With 1,500 employees at five production locations and a number of competence centers in North America, Europe and Asia, SCHOTT Electronic Packaging is a strong and reliable partner for customers worldwide. More than 5,000 different articles have been developed and are distributed by SCHOTT. These are produced at company sites in Germany, the Czech Republic, Singapore, U.S.A. and Japan.

## For more information:

### SCHOTT Electronic Packaging

A Division of SCHOTT North America, Inc.  
122 Charlton Street  
Southbridge, MA 01550  
USA

Phone: +1 508 765-3370  
Fax: +1 508 765-3377  
epackaging@us.schott.com  
www.us.schott.com/epackaging



Feedthroughs for pressure and flow sensors



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**SCHOTT**  
glass made of ideas