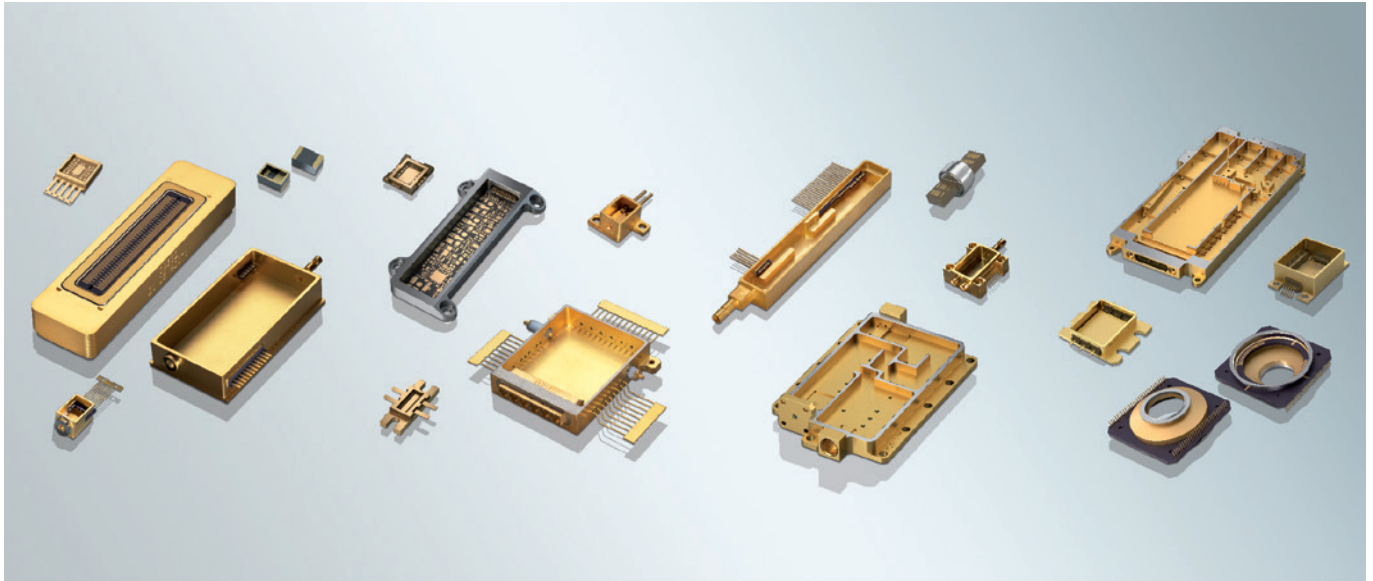


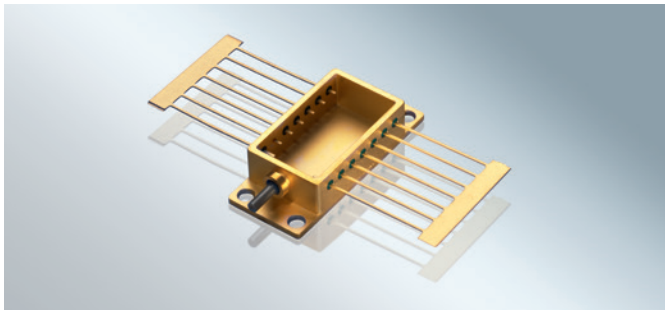
# Microelectronic Packages

with hermetic Glass-to-Metal-Sealing



## General Information

Microelectronic packages house small- to medium-sized batches of fully electronic circuits. They are used in electronic and opto-electronic applications and also increasingly in microelectronic mechanical systems (MEMS). Additional features, such as optical windows, high frequency (RF) feedthroughs, selective plating, temperature heat sinks and high voltage feedthroughs, can also be integrated.



GTMS butterfly package



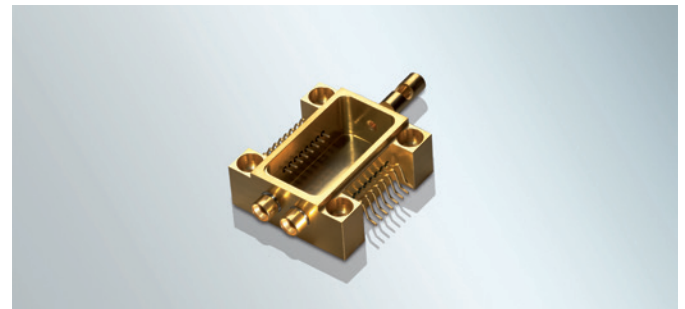
High power GTMS package

## Glass-to-Metal Seals (GTMS)

The combination of glass and metal is suitable for all applications requiring consistent hermetic sealing.

### Advantages

- Effective hermetic sealing, even in harsh or challenging environments
- Long-term efficacy and high reliability
- Manufacturing facilities in Asia, Europe and the US



GTMS package with co-axial RF feedthroughs

# Microelectronic Packages

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## Formats available:

- Machined types  
(Customized solution)
- Flatpacks (Stamped solutions)
- Plug-Ins (Stamped solutions)

## Available Coatings for Metal Part:

- Electroless/Electrolytic Nickel
- Gold (Soft Au)
- Silver copper

## Available Fusing Processes:

- Glass-to-metal sealing
- Low temperature brazing
- High temperature brazing
- Vacuum brazing
- Reflow brazing

## Available Material Options:

- Kovar
- Stainless Steel
- Copper
- Aluminium
- Mild steel (Cold rolled steel)
- Titanium
- Copper tungsten (CuW)
- Molybdenum
- Copper molybdenum
- Aluminum Silicon (AlSi)

## Applications:

GTMS microelectronic are widely used in applications such as:

- Data communication
- Medical technology
- Microwave packaging
- Sensor technology
- Industrial lasers
- Power electronics

| Technical Information                 |                                                                                                                                                                          |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gas-tight:                            | 1 x 10 <sup>-8</sup> mbar x l/s                                                                                                                                          |
| Temperature stability:                | > 250 °C                                                                                                                                                                 |
| Chemical resistance:                  | High                                                                                                                                                                     |
| Thermal shock stability:              | - 65 °C to 150 °C for 15 cycles                                                                                                                                          |
| Autoclaving: Proven functionality for | <ul style="list-style-type: none"><li>• Oils</li><li>• Thermal disinfection (95 °C; 10 minutes)</li><li>• Steam sterilization<br/>(2 bar; 134 °C for 3minutes)</li></ul> |

## About SCHOTT

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 and glass-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.