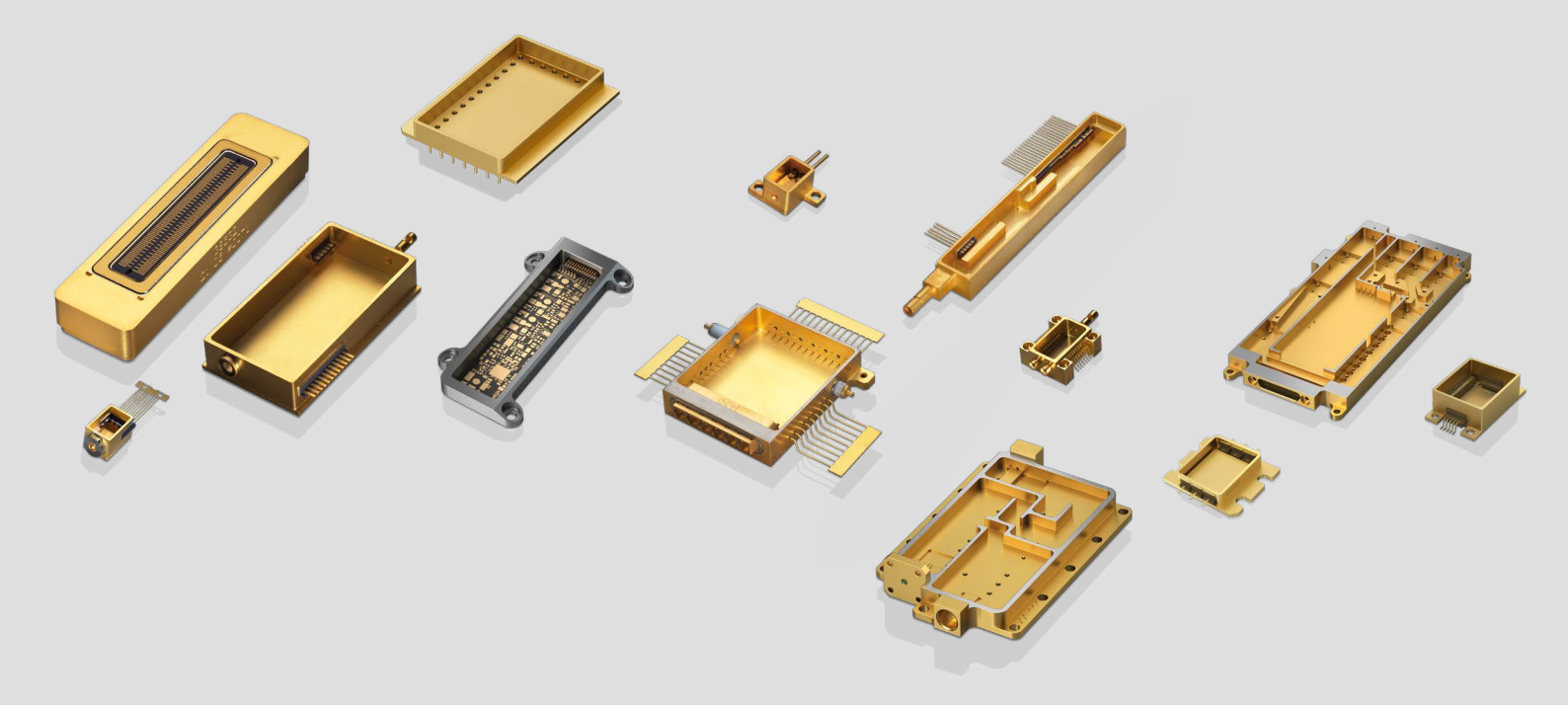


# Microelectronic packages

## With hermetic glass-to-metal sealing

### General information

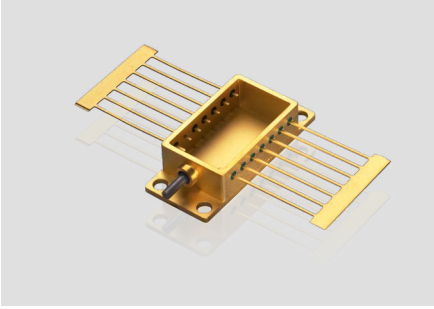
Microelectronic packages house small- to medium-sized batches of fully electronic circuits. They are used in electronic and opto-electronic applications and also increasingly in microelectronic mechanical systems (MEMS). Additional features, such as optical windows, high frequency (RF) feedthroughs,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

### Glass-to-metal seals (GTMS)

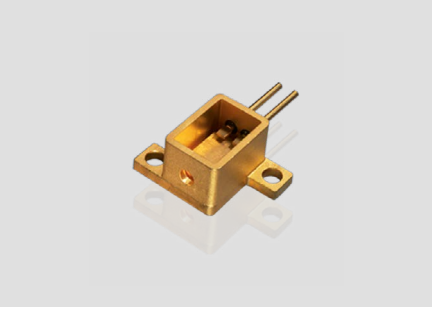
The combination of glass and metal is suitable for all applications requiring consistent hermetic sealing.

### Advantages

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



GTMS butterfly package



High power GTMS package



Lightweight microelectronic package

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# Microelectronic packages

## With hermetic glass-to-metal sealing

### Formats available:

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

### Available coatings for metal part:

- Electroless/Electrolytic Nickel
- Gold (Soft/Hard Au)
- Silver copper
- Thin multi layer (ENEPIG / ENIG)
- Tin

### Available material options:

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

### Available fusing processes:

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

| Technical information | |
|---|---|
| Gas-tight: | Better than 1 x $10^{-8}$ 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 | ▪ Oils<br>▪ Thermal disinfection (95 °C; 10 minutes)<br>▪ Steam sterilization (2 bar; 134 °C for 3 minutes) |

### Applications:

GTMS microelectronic are widely used in applications such as:

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

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