

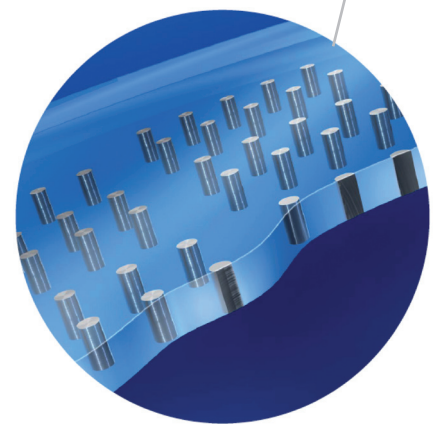
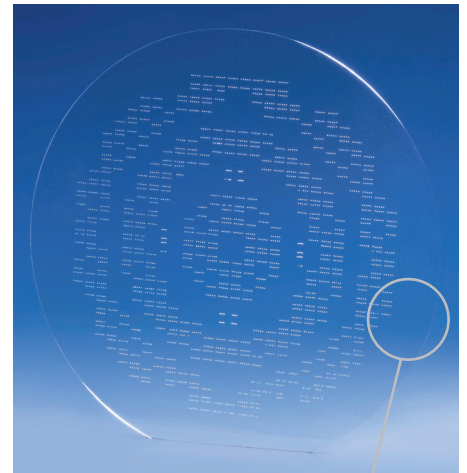
SCHOTT HermeS®

Product Information

SCHOTT HermeS® is a glass substrate with hermetically sealed solid metal vias. Specially designed for use in Micro-Electro Mechanical Systems (MEMS), HermeS™ is the ideal aid to integrated, miniaturized designs with superior electrical and mechanical properties.

Advantages

- **Small form shape:** Fine-pitched vias can be directly placed under the silicon MEMS device.
- **Wafer-level packaging:** Easy implementation of wafer-level packaging and anodic bonding
- **Superior hermeticity:** With more than 50 years of experience in glass-to-metal sealing, superior hermeticity can be achieved.
- **Enhanced electrical properties:** Superior electrical insulation, low dielectric constant, reduction of RF losses, and superior optical transparency. Also, lower electrical resistance is achieved by using solid metal conductors.
- **Enhanced thermal reliability**



Preliminary Specifications

Wafer size:	4", 6", (8")*
Wafer thickness:	500 ± 20 µm [0.0197" ± 0.00079"] (Min. 350 µm [0.0138"])
Contact Via pitch:	Min. 250 µm [0.0098"] (Min. 200 µm [0.0079"])*
Contact Via diameter:	Min. 100 µm [0.0039"] (Min. 80 µm [0.0032"])*
Glass:	SCHOTT "BOROFLOAT® 33" (low alkaline glass)
Via:	Tungsten (W)
Hermeticity:	≤ 1 × 10 ⁻⁹ Pa · m ³ /sec [≤ 1 × 10 ⁻⁸ mbar/sec] [≤ 1 × 10 ⁻⁸ atm cc/sec]
Electric resistance of W:	5.5 µΩcm
CTE of B33:	3.25 × 10 ⁻⁶ /K
Dielectric constant of B33:	4.6
Index Refraction of B33:	1.47 at 600 nm

* Under development

MEMS Applications

- Sensors (e.g. gyroscope, accelerometers, pressure-, position-, flow-, vibration-, RF-, ...)
- RF (e.g. switches, oscillators, filters)
- Optical MEMS (e.g. optical mirrors, micro-optical benches, optical switches, micro-spectrometers)
- Micro fluids (e.g. inkjet heads, micro probes, actuators, valves, pumps)
- Si Microphones

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