

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.

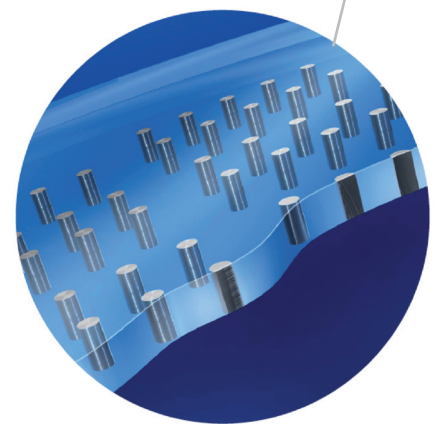
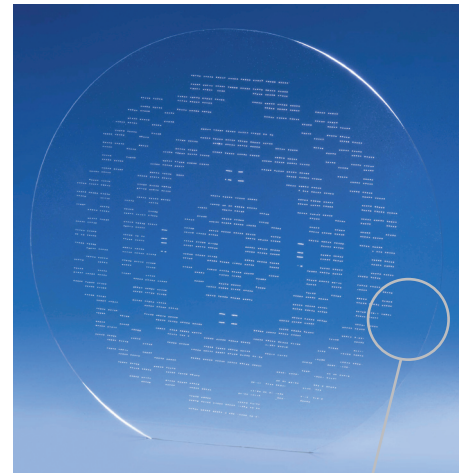
Advantages

- **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 – 600 ±20 µm [0.0197" – 0.0236" ± 0.00079"]
Contact pin pitch:	Std. 500 µm [0.0197"] Min. 300 µm [0.0118"]
Contact pin diameter:	Std. 150 µm [0.0059"] Min. 100 µm [0.0039"]
Glass:	SCHOTT "BOROFLOAT 33" (low alkaline glass)
Pin:	W
Hermeticity:	$\leq 1 \times 10^{-9}$ Pa · m ³ /sec [$\leq 1 \times 10^{-8}$ mbar/sec] [$\leq 1 \times 10^{-8}$ 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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