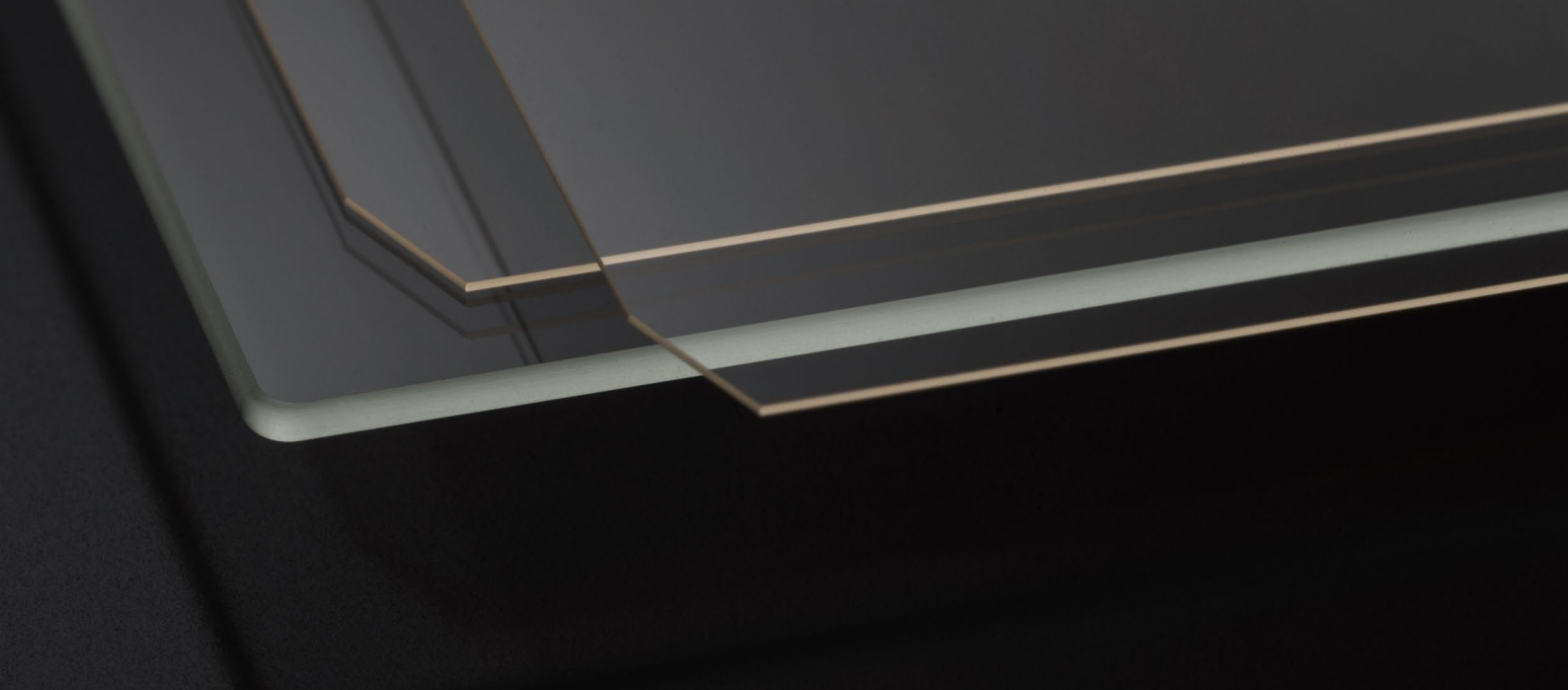




SCHOTT Glass Panels

for advanced semiconductor packaging

Explore the advantages of glass for advanced IC substrates and interposers:

Glass enables high-density interconnects and advanced heterogeneous packaging thanks to precisely tailored coefficients of thermal expansion (CTE), high stiffness, excellent electrical properties, superior thermal stability, and ultra-smooth surfaces. Its precise structurability allows for fine-line lithography, optimal via formation, and improved thermal management in thin packages.

SCHOTT offers a comprehensive portfolio of customizable glass solutions specifically addressing challenging industry trends such as increased data transfer rates, growing I/O densities, larger panel sizes, and the emergence of next-generation technologies like co-packaged optics. As a cost-effective material, glass is rapidly becoming the preferred choice for cutting-edge IC and microelectronic packaging.

Why choose SCHOTT Glass Panels?



High versatility

Thanks to a range of glass types with different CTEs our panels enable optimal package performance for IC and RF substrate designs, as well as system packages.



Various formats

Available in various glass formats, including panels sized up to 650 x 650 mm – including 510 x 515 mm – with varying thicknesses.



High stiffness

Reducing package warp and maintaining the integrity and performance of larger chips and packaging units.



High precision

Our panels feature high geometrical accuracy and surface quality, completed with precisely processed edges.



Excellent dielectric properties

Low loss factor enables efficient antennas and packages with extreme low signal delays.



Ready for advanced structuring

Proven to excel in super fine, high-density through glass via (TGV) laser structuring, our panels can effortlessly accommodate complex designs and mechanically reliably openings for embedding.

Glass Panels

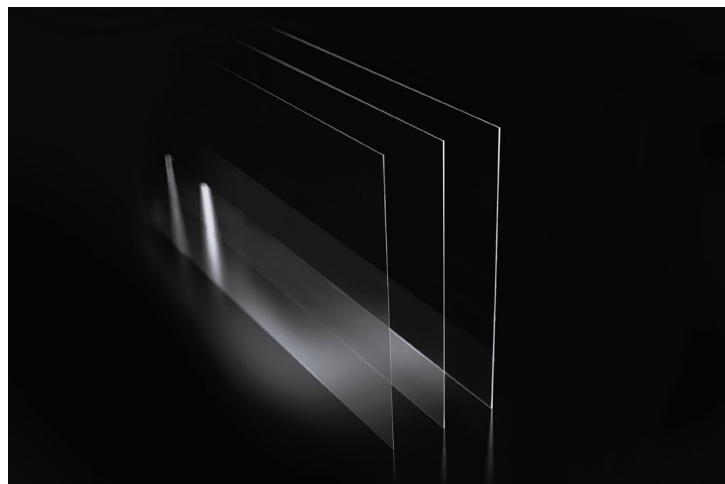
Superior properties for advanced semiconductor packaging

Properties	Target specification ⁽¹⁾
CTE range (20 – 300 °C)	3.2 – 7.2 ppm/K
Format	max. 650 x 650 mm ⁽²⁾
Thickness ⁽³⁾	0.25 – 2.00 mm
Thickness tolerance ⁽³⁾	± 15 – 20 µm
Total thickness variation (TTV) ⁽³⁾	≤ 10 – 20 µm
Warp ⁽³⁾	≤ 100 – 200 µm
Cosmetic quality scratch/dig	40/20
Edge defects	≤ 100 – 200 µm
Edge processing	ground with a round or chamfer shape

(1) Tighter specifications upon request

(2) Typically 515 x 510 mm

(3) Typical values, depending on glass type and thickness

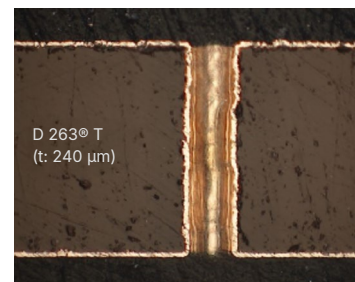
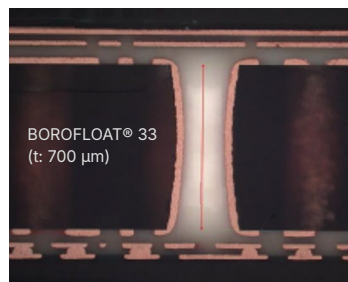


Introducing the SCHOTT **sampling offering:** highly accurate structuring

Emerged from SCHOTT's extensive experience in laser structuring for sensing & imaging applications, FLEXINITY® is offered to assist customer development projects. FLEXINITY® comprises super precise high-density TGV through – hole patterns, combinable with large openings ready for embedding of active and passive components.

Explore our **application support:** high performance metallization

SCHOTT glass can be perfectly metallized on both, surfaces and through-holes, using diverse process conditions. Our partner network offers various glass types, including D 263® T, BOROFLOAT® 33, and SCHOTT® AF 35 G, with sizes up to 515 mm x 510 mm, achieving aspect ratios over 1:5 and peel-off strengths from 500 to 1500 N/m or more, with both full and conformal metallization options.



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