

# 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.



#### High stiffness

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



#### Excellent dielectric properties

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



#### 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 precision

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



#### 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

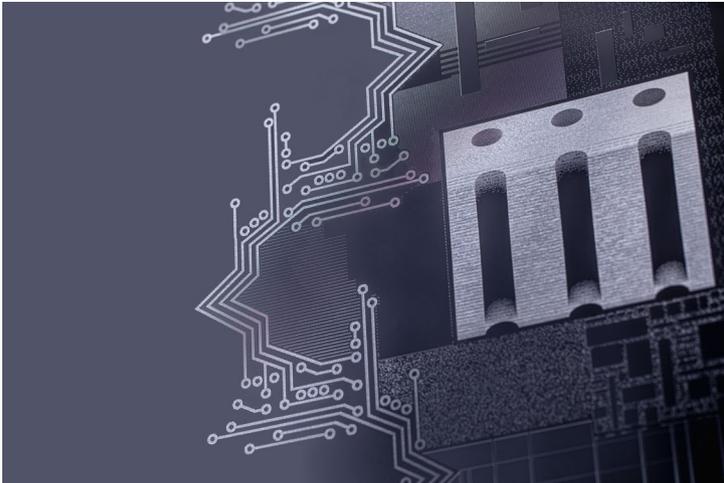
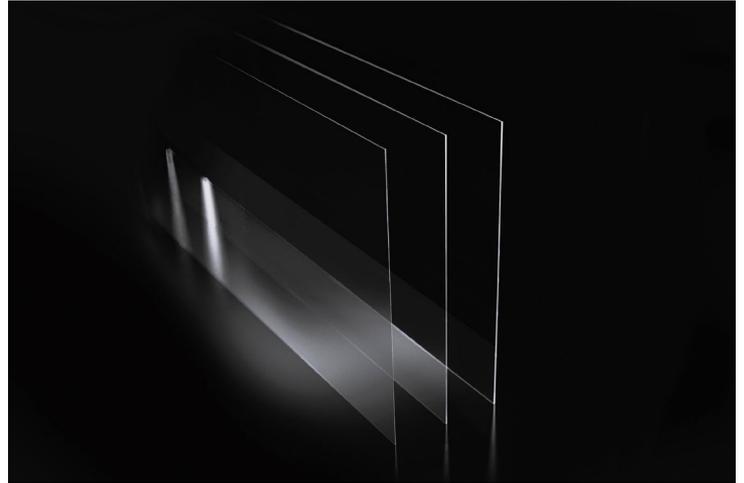
## Superior properties for advanced semiconductor packaging

Properties	Target specification <sup>(1)</sup>
CTE range (20 – 300 °C)	3.2 – 7.2 ppm/K
Format	max. 650 x 650 mm <sup>(2)</sup>
Thickness <sup>(3)</sup>	0.25 – 2.00 mm
Thickness tolerance <sup>(3)</sup>	± 15 – 20 µm
Total thickness variation (TTV) <sup>(3)</sup>	≤ 10 – 20 µm
Warp <sup>(3)</sup>	≤ 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

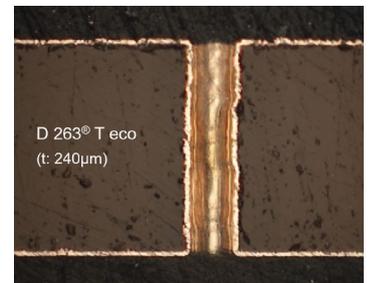
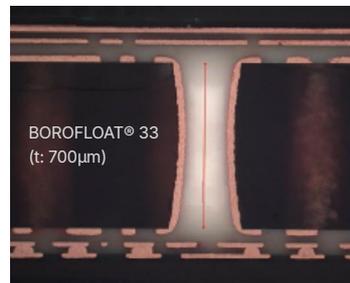


### Introducing the SCHOTT sampling offering: highly accurate structuring

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 eco, 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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