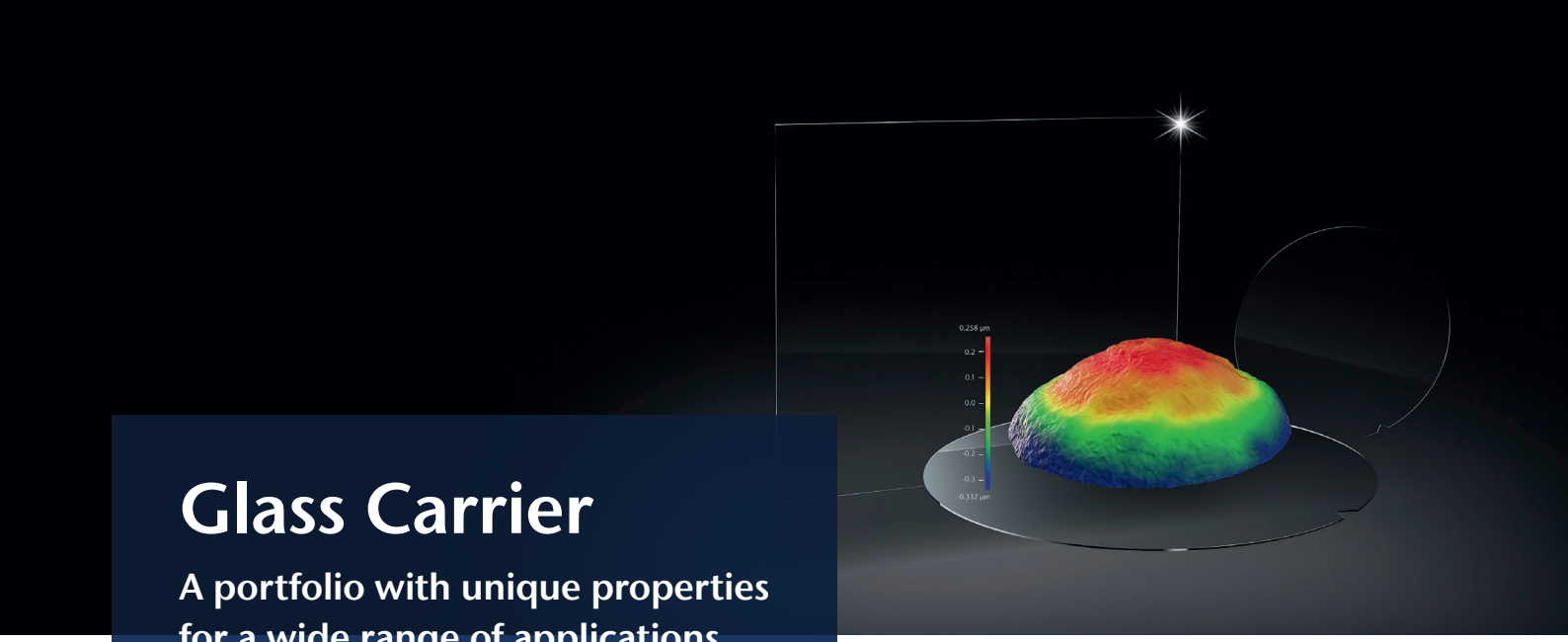


Glass Carrier

A portfolio with unique properties for a wide range of applications

Over several decades, SCHOTT has built an unrivaled reputation for high quality glass substrates and wafer products, supplying a versatile range to serve high-tech industries e.g.: semiconductor and opto-electronics, automotive, science and biotechnology. Our experts contribute valuable help to customers in developing solutions closely tailored to their needs.

High raw glass quality

Broad product portfolio

Multiple product forms

Bonding & debonding

Ready for back-end processes

Highly optical transmission of glass carriers from UV to IR meets the needs of multiple debonding solutions

Glass wafers are getting more important as a carrier material for temporary bonding and debonding with silicon wafers in semiconductor applications such as

- 3D IC
- IGBT and
- Fan-Out Wafer-Level Packaging.

SCHOTT glass portfolio with a broad CTE range to meet customer device materials

Due to our broad choice of materials we can fulfil our customers requirements.

CTE (ppm/k)

G1	AF 32® eco	3.2
G2	SCHOTT® AF 35 G	3.3
G3	BOROFLOAT® 33 & BOROFLOAT® 33 HT	3.3
G4	BOROFLOAT® 41	4.1
G5	D 263® T eco	7.2
G6	B 270®	9.4

- G1, G2 are alkaline free materials
- G1, G2 and G3 carriers match Si CTE
- G5 and G6 meet high CTE of compound and other interface material

Advantages at a glance

- Extremely low TTV and superior flatness
- Excellent optical transmission from UV to IR
- Highly acid, alkali and hydrolytic resistant
- Suitable for temporary bonding
- Perfectly suited to highly precise 3D IC, silicon thinning
- Ideal as a substrate for fan-out wafer-level packaging
- Semiconductor ready, laser marked, packaged in a clean room
- Technical support for customers are available upon request

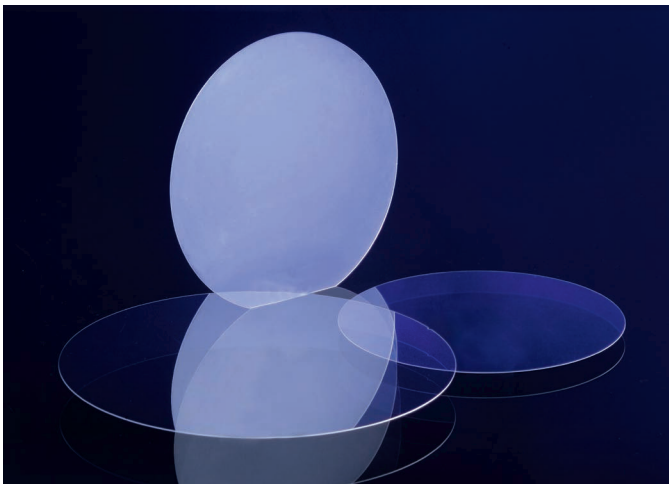
SCHOTT
glass made of ideas

Glass Carrier

Our Glass Carrier portfolio convinces through high-quality processing

Extremely low TTV extends the limits of applicability
Due to our capabilities, SCHOTT Glass Carrier Wafers and Carrier Panels meet the highest market requirements.

Geometrical properties	Value
Ultra Low Total Thickness Variation (TTV)	< 0.6 µm
Precise Thickness Tolerances	± 10 µm (Standard) ± 5 µm (Advanced)
Warp (Depending on materials and thicknesses)	6" < 20 µm 8" < 30 µm 12" < 50 µm
Cosmetic Quality (Depending on materials and thickness)	Scratch/Digs: 20/10 (Standard) 10/5 (Advanced)

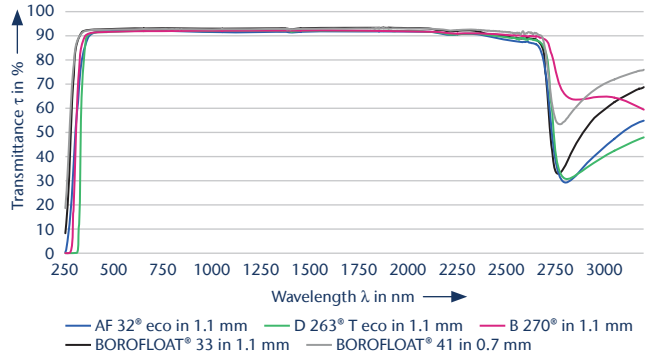


SCHOTT Glass Carrier Wafers and Carrier Panels are available in typical formats

Shape	Formats*
Wafer	6", 8", 12" [150 – 300 mm]
Panel	100 x 100 mm – 650 x 650 mm
Thickness	0.1 – 3.0 mm

* Other dimensions on request

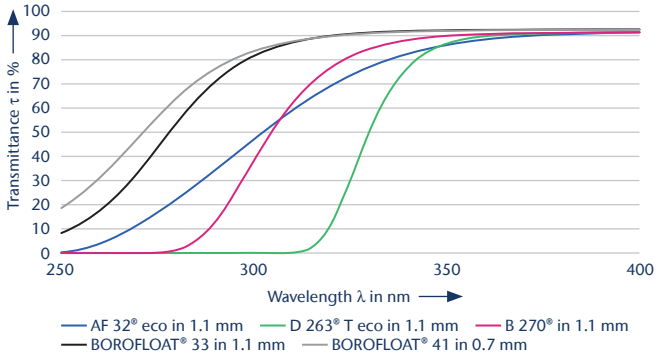
Spectral transmittance λ = 250 nm to 3,200 nm



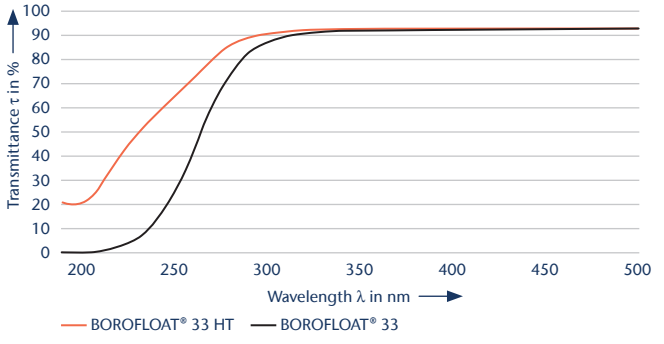
Typical specifications of our Carrier Wafers and Panels:

- Flat/Notch: according to SEMI standard
- Laser marking: Barcode/Unique number
- Cleaning: Ultra-/Mega sonic cleaning and cleanroom ISO 6
- Packaging: Inspection, packaging under ISO 6 in wafer boxes (FOSB, RTU etc.)

Spectral transmittance λ = 250 nm to 400 nm



Spectral transmittance λ = 200 nm to 500 nm



Precise processing enables Carrier solutions

Due to our precise processing, we enable multiple product forms including cut-to-size, non-polished and polished wafers and substrates.

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