



Glass Micro Bonding from **SCHOTT Primoceler**

Ultra reliable, miniaturized glass packages

A sustainable corporate model

CARL ZEISS FOUNDATION

Heidenheim an der Brenz and Jena

Foundation acting as shareholder

SCHOTT AG

Mainz

Subsidiaries

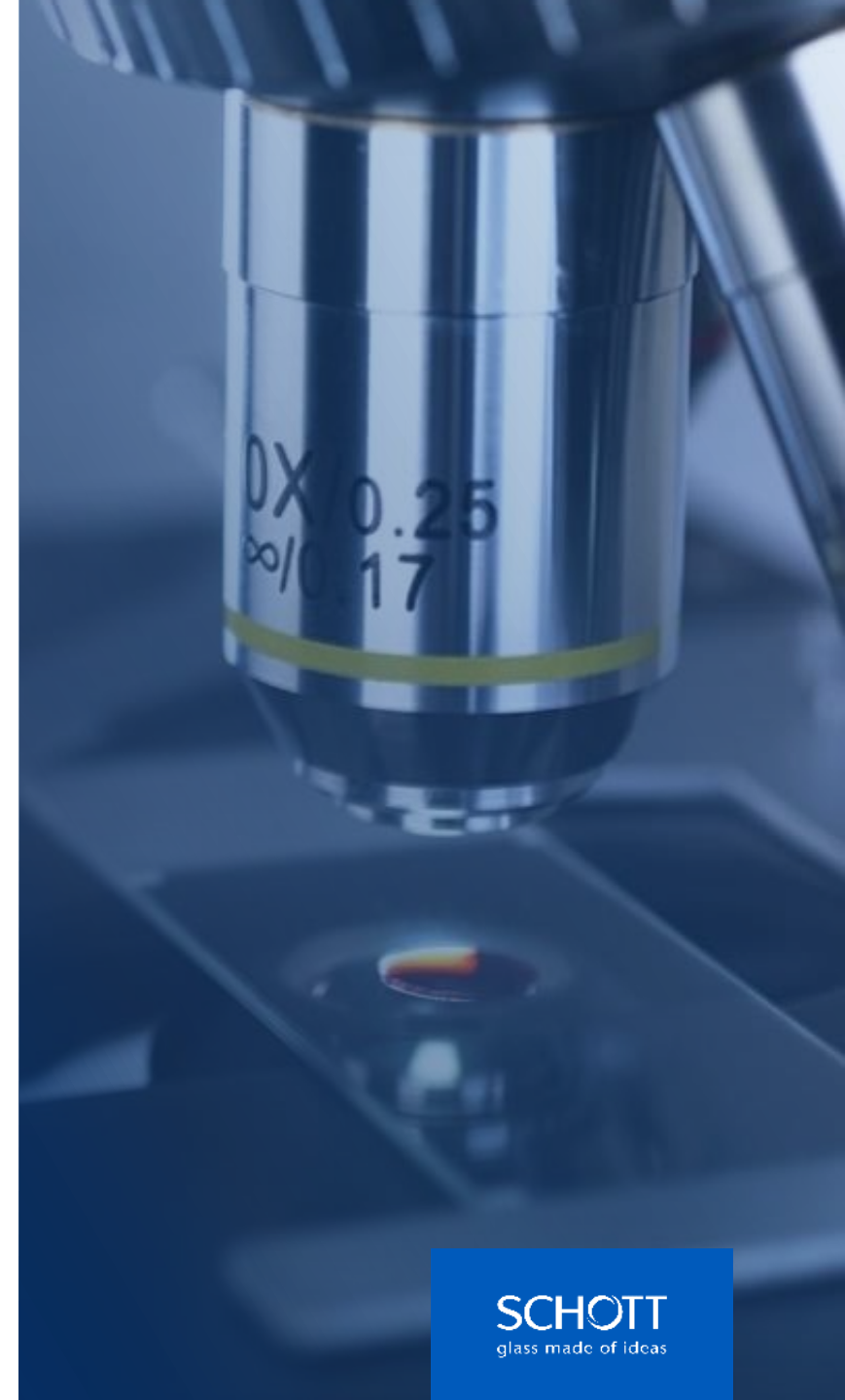
SCHOTT
glass made of ideas

Carl Zeiss AG

Oberkochen

Subsidiaries

ZEISS



Specialty glass

for more than 130 years



Our competence lies in the areas of specialty glass, glass-ceramics and other innovative materials.



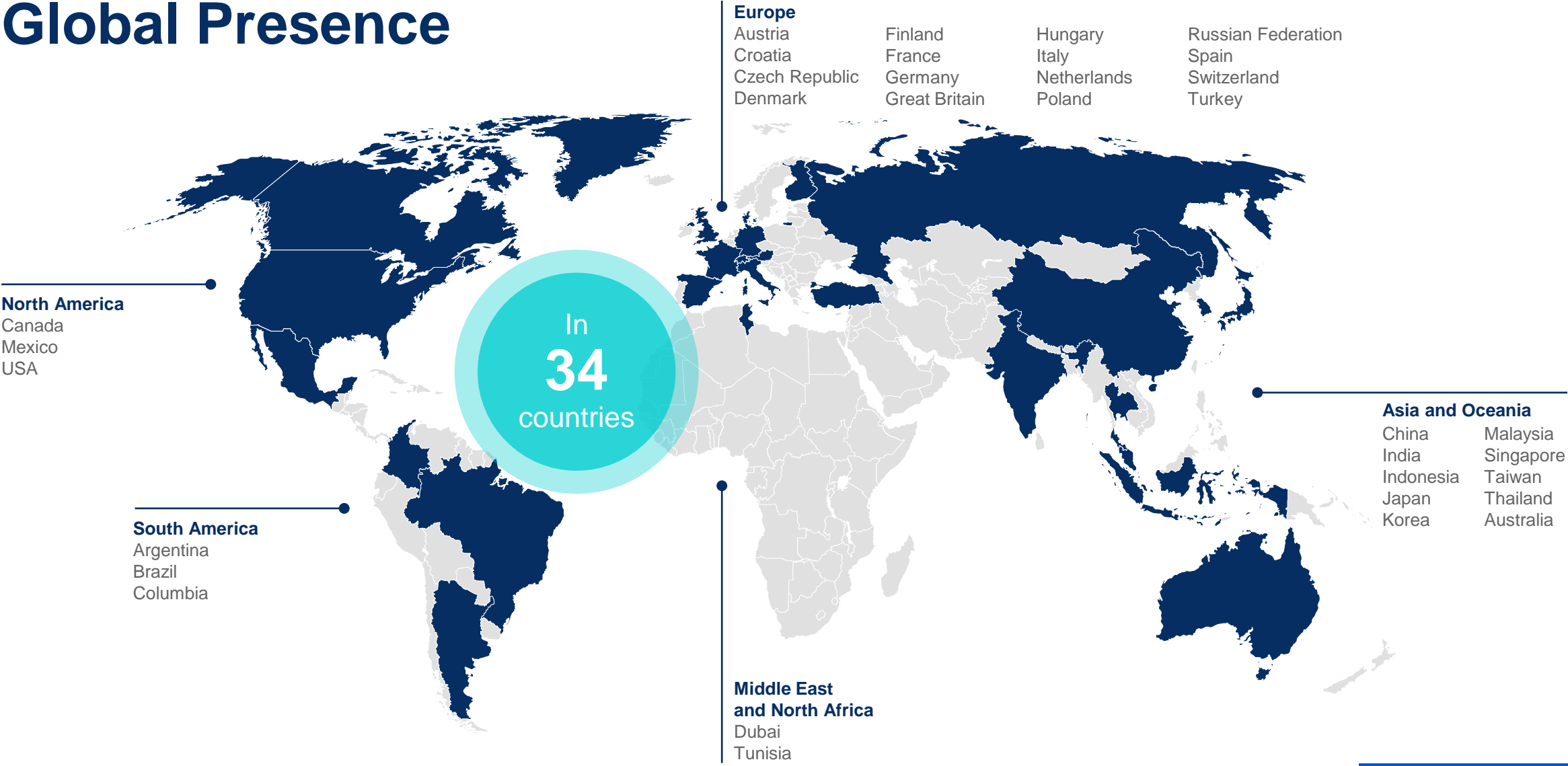
The company's founder Otto Schott is considered the founder of the specialty glass industry.



Since Otto Schott, innovations have always been a part of SCHOTT's DNA.



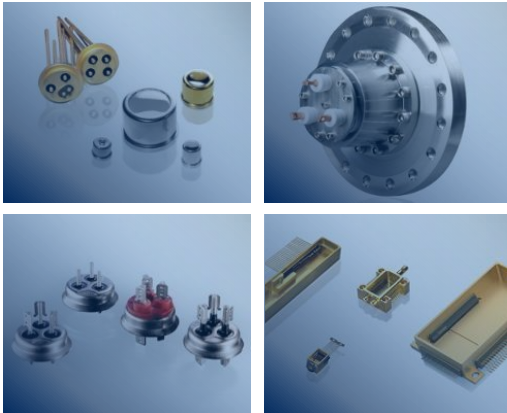
Global Presence



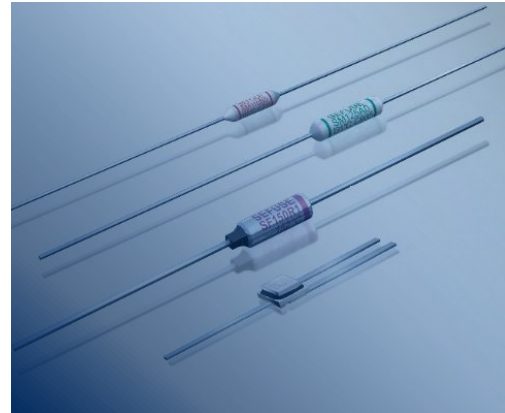
Business Unit Electronic Packaging (EP)

- Vertically integrated from materials science to materials processing
- Local customer support at production sites and competence centers worldwide
- Customer co-developments for individual packaging solutions

Glass-/Ceramic-To-Metal Seals for
Electronics



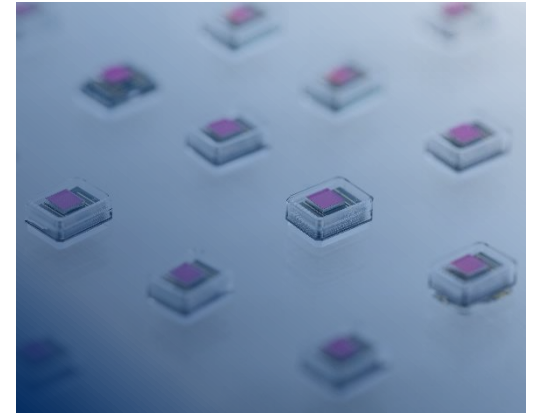
Thermal Cutoffs for
Electrical Appliances



Special glass for
Life Science and Electronics

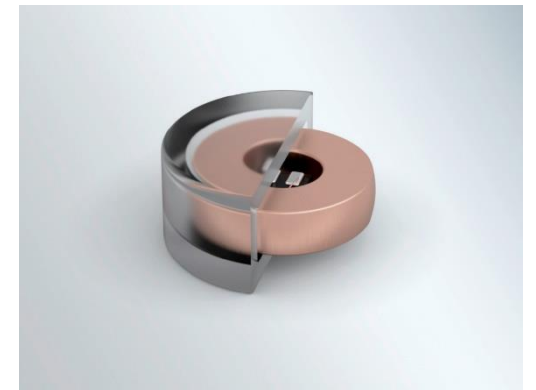
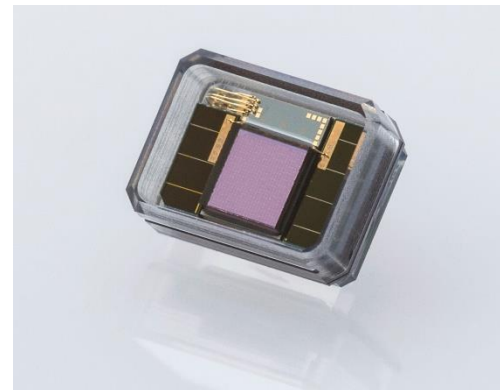
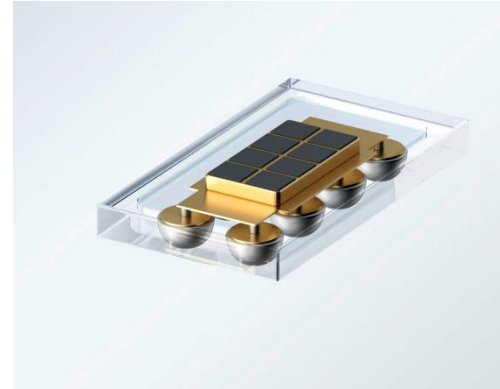


Direct laser bonding for
Wafer-Level Chip Scale Packaging



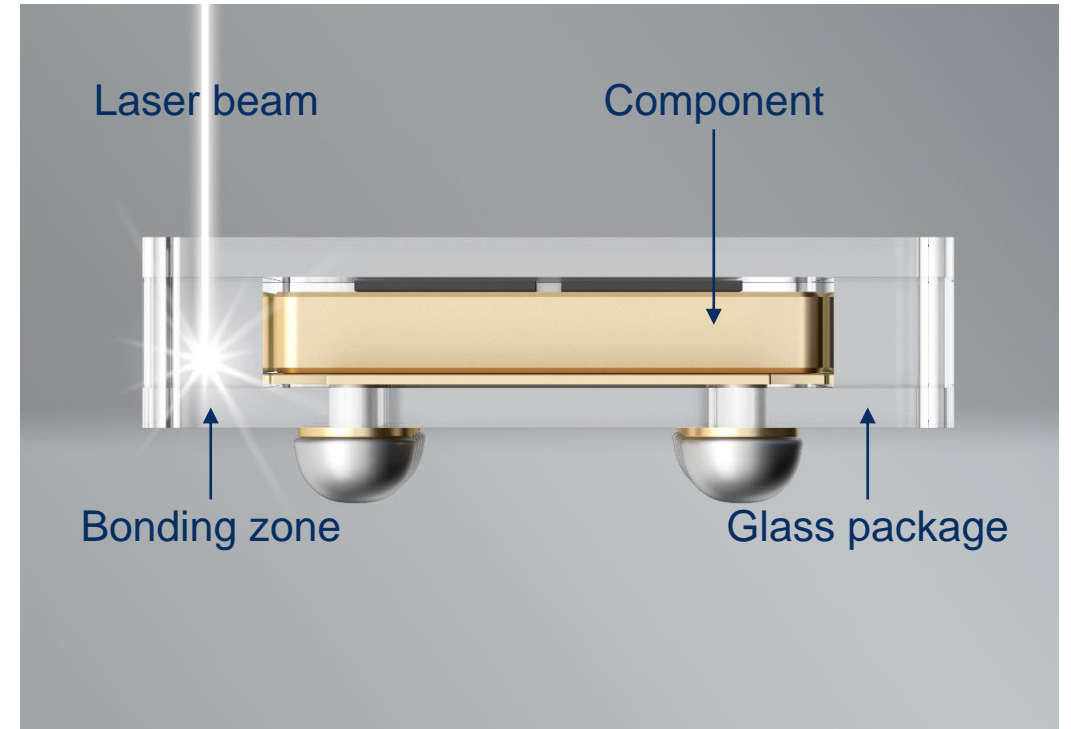
SCHOTT Primoceler: Who Are We?

- Glass Micro Bonding specialist founded in 2010 and headquartered in Tampere, Finland
- Joined the SCHOTT family in August 2018
- Pioneering Technology: Unique additive-free, room temperature hermetic glass bonding
- Specializing in medical implants, microfluidics, micro-electronics and micro-optics



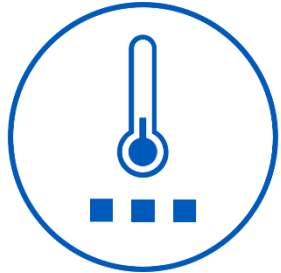
What Is Glass Wafer Micro Bonding?

- **Wafer level hermetic bonding:** high level of hermeticity
- **Minimal heat load:** heat-affected zone of just a few micrometers
- **Additive-free:** no adhesives or extra materials required
- **Miniaturization:** extremely small footprint thanks to simple material construction



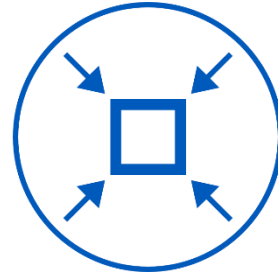
Expanding the Limits of Conventional Hermetic Sealing

Key benefits of Glass Micro Bonding



Room Temperature

- Enables coatings and other active layers
- Bio sensors



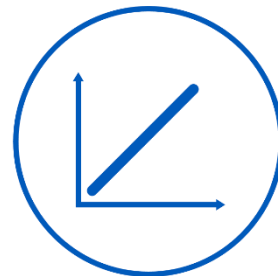
Miniaturization

- Minimal bonding / heat affected zone
- Low heat → less bulk, thinner materials
- Transparency enables RF transmission



High Reliability

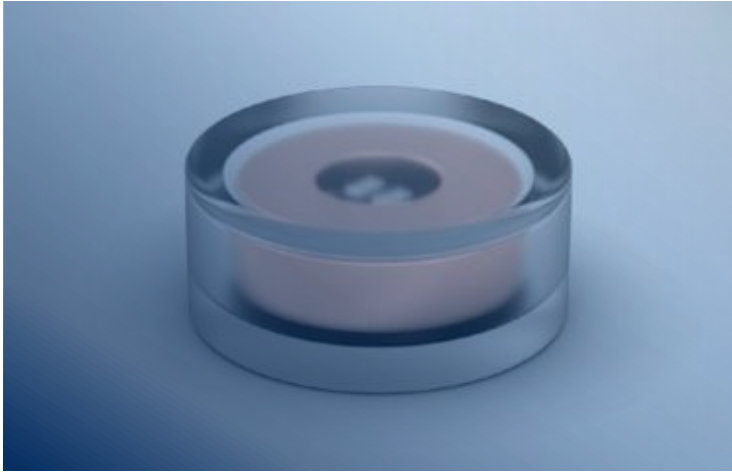
- No adhesives → no outgassing
- Fully hermetic
- Medical implants



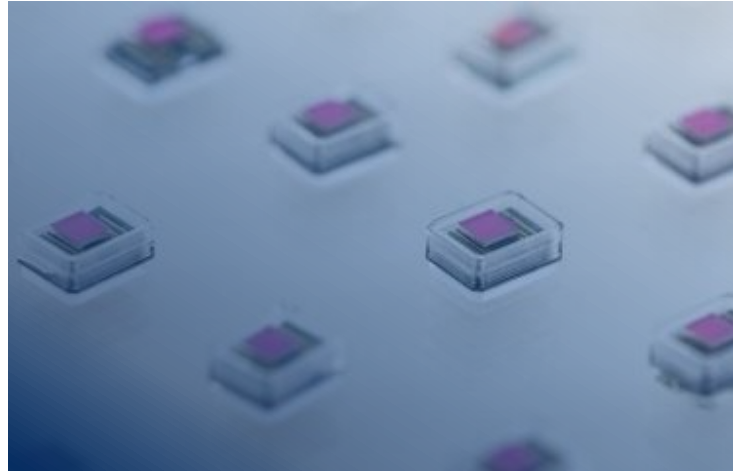
Scalable Wafer-Level Process

- Easily scale-up possible
- Many devices per wafer
- High yield

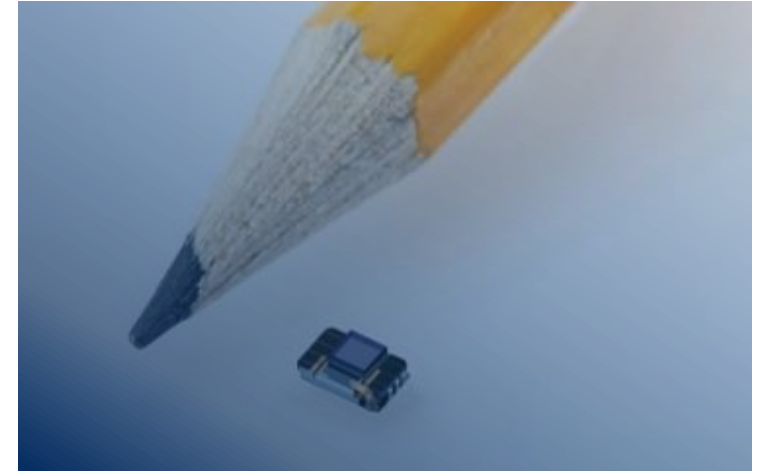
Application Possibilities for Glass Micro Bonding



- Medical implants
- Neurostimulators
- Pressure sensors



- Retina implant
- Consumer devices
- AR displays



- 3D sensing
- Microfluidics
- Micro-optics

Unmatched Miniturization

SCHOTT Primoceler all-glass packages come in sizes so small, you have to see it to believe it

