

【Wafer Level Lensの紹介】

2025/4/8

フジトク(株)
小泉善太



Wafer Level Optical System



Refractive Lens Cap wafer

► Application

- A. Wearable Devices
- B. Microbolometer Sensor
- C. Thermopile Sensor
- D. Hybrid Sensor
- E. Pressure Sensor
- F. Gyro Sensor
- G. Acceleration Sensor

► Property

DRIE & Bosch Process
Si deep cavity Etching.
Cavity Depth < 300um.
Optical coating inside cavity Reflow
process for Lens Fabrication
Binch Process.

► Special Points

Lens and Cap wafer integrated

► 3D Scope Measurement Result

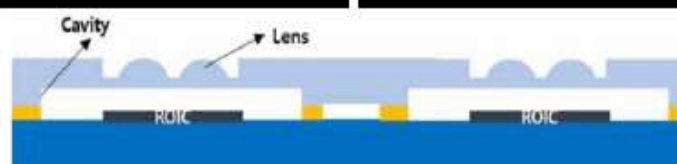
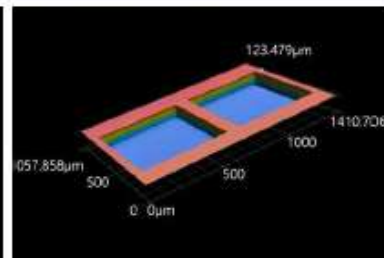
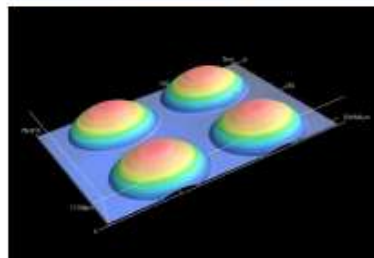
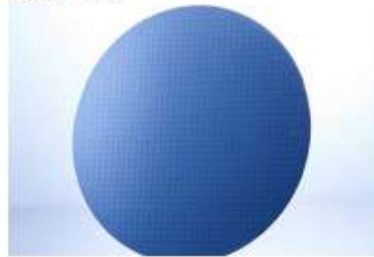
► Packaging

Feature for Lens cap wafer

Front Side

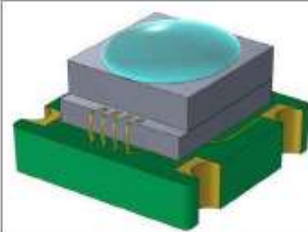


Back Side

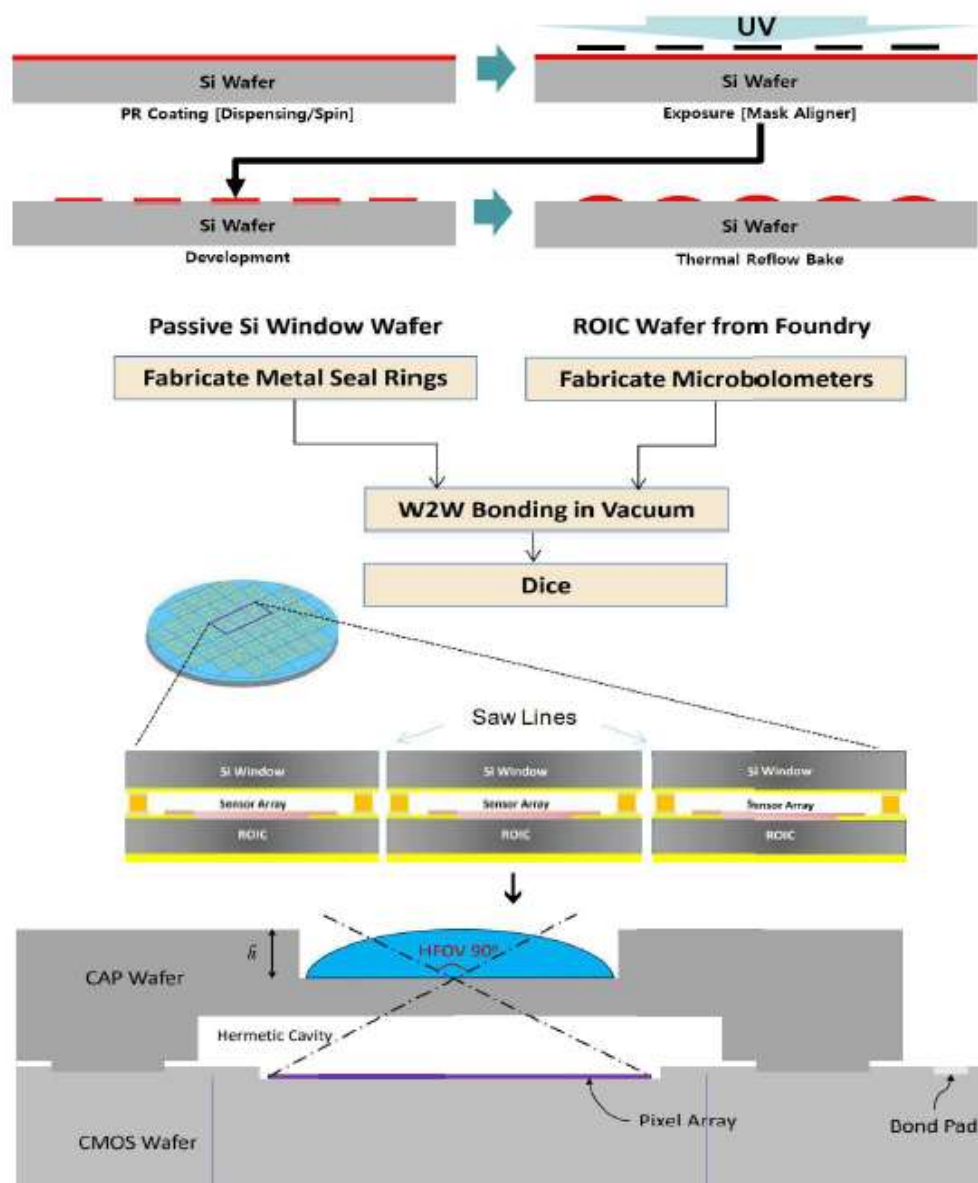


Single side Lens/ Cavity

Wafer Level Optical System



Lens Integrated Cap wafer



【Wafer Level Lensの特長】

製品	Wafer Level Lens (Lens + Substrate)
技術	Lithography + IR coating
用途	赤外線センサ、赤外線カメラ
材料	Silicon
ウェハサイズ	φ6"およびφ8"
レンズ数量例	φ6"ウェハ内にφ3mmレンズが約850個
長所	①低コスト、②短納期の大量生産、③全プロセスをin houseにて
短所	サイズの制約 (最大径=φ4mm, レンズ最大厚み=約0.3mmt)