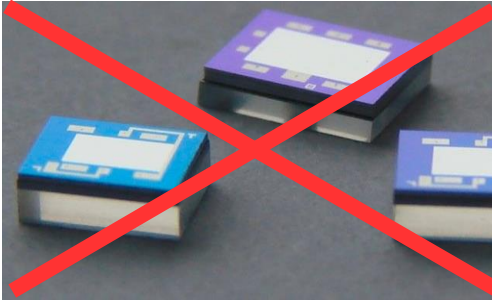


Next Generation Pressure Sensor

次世代の圧力センサー

Conventional Structure

現行品の構造 (Glass & Si)



© leduvlights.com

Next Generation Structure

次世代の構造 (リソガラス薄膜付きSi & Si)

Membrane



Example: gauge pressure sensor

リソガラス薄膜Siウエハーを相手のSiウエハーと陽極接合

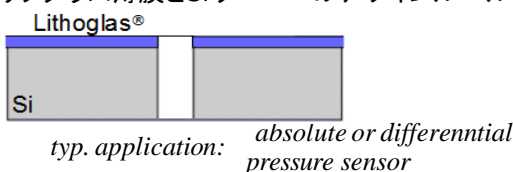
Lithoglas® Silicon-to-Silicon Bond

リソガラス薄膜付きSiとSiの接合メリット

- Bulk glass is replaced by glass coated silicon
GlassとSiの組み合わせからリソガラス薄膜付きSiとSiに変更可能
- Lower signal drift through matching CTE and Young's modulus
従来品と比較し材料の相性が良好 (CTEとヤングモジュール)、低い信号も検知可能
- Smaller and more precise structures (holes) in silicon
Siは加工に適しておりとても小さなスルーホールを形成可能
- Higher flexural strength
高い曲げ強度
- Thinner device, smaller footprint
小型で高さが低い設計が可能、また小さなフットプリント
- Robust anodic bond instead of direct Si-Si fusion
強度の高い陽極接合が可能
- Lower bond voltages (< 100 V) compared to bulk glass bonding
低い電圧での接合が可能

Design Rules

リソガラス薄膜とSiウエハーのデザインルール


Wafer Material
Glass Film Thickness
Wafer Size (Diameter)
Wafer Thickness
Through Hole Diameter
Side Wall Angle of Hole
Through Hole Ptich
Through Hole Shape
Silicon with Thin Glass Coating
3 - 5 μ m (on silicon dioxide layer)
Semi Std. 100 mm, 150 mm, 200 mm
 ≥ 200 μ m, ≤ 3000 μ m
 ≥ 200 μ m (upon request)
90°
 ≥ 500 μ m
circular