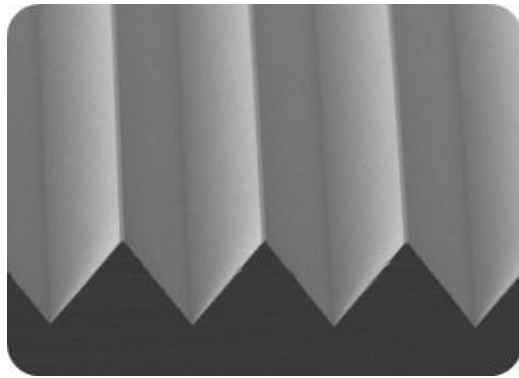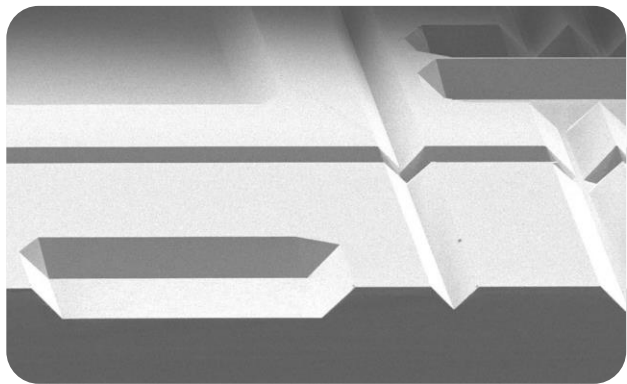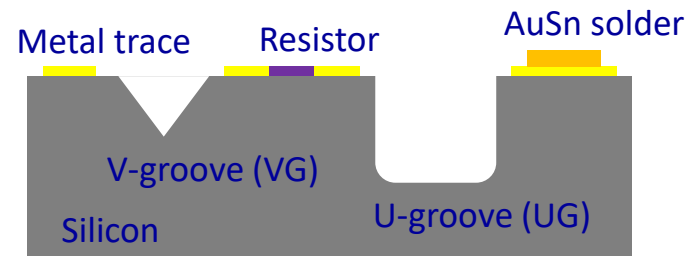# Process Platform: Silicon Optical Bench

- High precision VG with 45° or 54.7° slope
- Potential to integrate with thin-film resistor, metal trace, and solder

54.7° V-groove

Metal trace   Resistor   AuSn solder

V-groove (VG)

Silicon   U-groove (UG)

45° V-groove

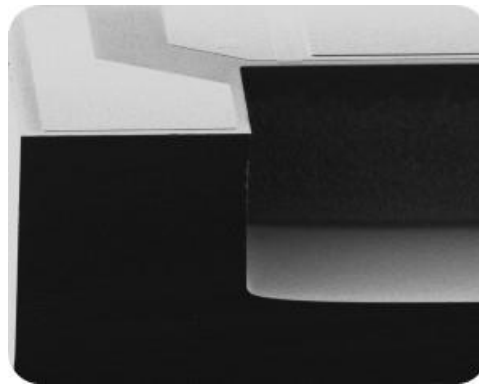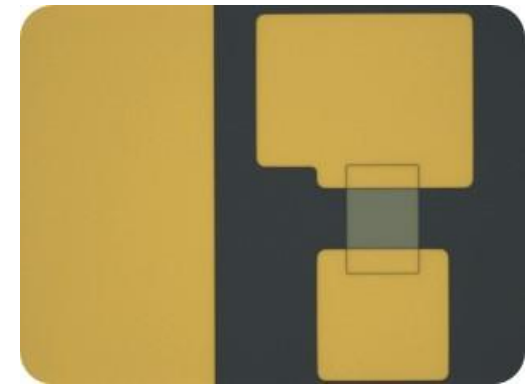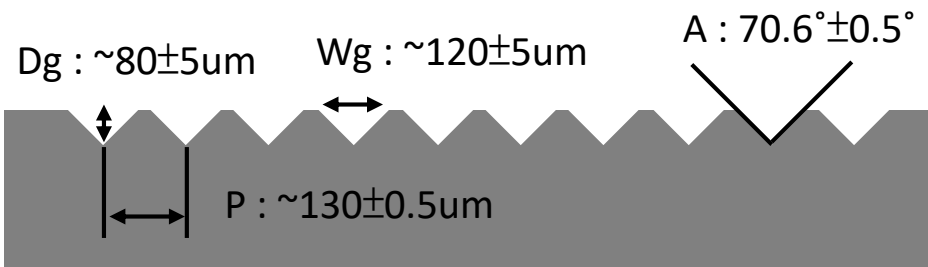U-groove

Optional metal layers

apm

Process Platform: Silicon Optical Bench

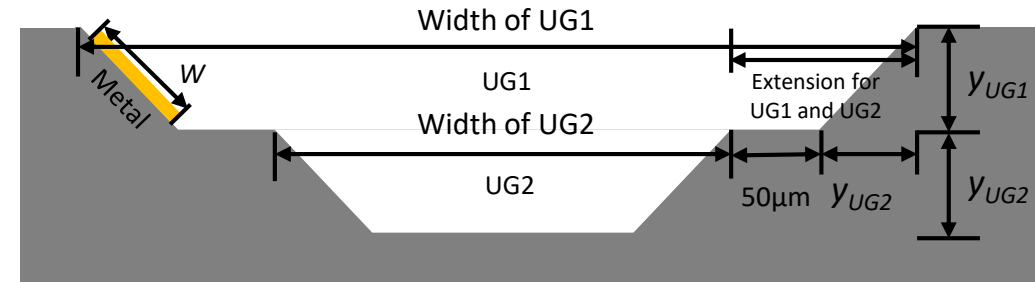## 54.7° VG Dimension:

- Groove Depth (Dg): target ± 5um
- Groove Width (Wg): target ± 5um
- Groove Pitch (P): target ± 0.5um
- Groove Angle (A): 70.6 ± 0.5 degree

45° VG/UG Dimension:

- Depth variation of UG1: ± 10%
- Depth variation of UG2: ± 10%
- Width variation of UG1: STD~3%
- Width variation of UG2: STD~5%
- Width variation of Metal: ± 10%

Process Platform: Silicon Optical Bench

Thin Film Resistor (TaAl):

- TFR max. sheet resistance(Rs): 50 ohm/sq

- TFR min. width(Z)/length(Y): 10um / 70um

- UBM min. width(U)/length(V): 150um / 150um

- Min. width of overlay(W): 10um

- Resistance calculation: $((Y-2*W)/U)*Rs$