Si-Photonics iSiPP50G

Modules	Description	Enabled devices
3 silicon patterning steps	3 etch depths in 220nm Si: 70nm, 160nm; 220nm (193 nm litho)	Strip/rib waveguides, various passive optical devices, silicon taper
Gate oxide and Poly-Silicon layer	1 etch depth: full poly etch (160nm) (193nm litho)	Advanced grating couplers, poly-Si waveguide
Ion implantation in Si	8 implants levels: 4x n-type and 4x p-type	Si carrier depletion, injection and accumulation devices, Ge Photodectors, doped Si resistors, …
Ge module	100% Ge(Si) RPCVD selective epitaxial growth & 2x implants levels	Ge Photodectors Ge(Si) EA modulator
Silicide tungsten contact module	Ohmic contacts to doped silicon	Standard CMOS contacts plugs
Metal heater	Metal layer for heaters	Metal heaters
Two-level metal interconnect	Cu-based two-level metallization	Standard CMOS interconnects
Aluminium passivation	Aluminium finish metallization	Standard CMOS interconnects
Deep trench	Deep trench to expose edge coupler facets	Edge couplers