

Device Specifications

Waveguide Silicon Mach-Zehnder Interferometer (MZI) Modulator	
Phase-shifter	PN junction in reverse bias
Waveguide dimensions (HxW)	220 nm x 500 nm
Phase-shifter length	4 mm
Insertion loss (exclude coupling loss, approx.)	7 dB
Bandwidth (-3dB @-3.5V)	> 5 GHz
Phase-shift efficiency, $V\pi L\pi$	< 4 V.cm

Waveguide Germanium <i>pin</i> Photodetector	
Ge film thickness	500 nm
Length	50 μ m
Waveguide dimensions (HxW)	220 nm x 500 nm
Bandwidth (-3 dB, @-1V)	> 5 GHz
Dark current (-1 V)	< 1 μ A
Responsivity (1550 nm)	> 0.5 A/W

1-D Grating Coupler	
Grating Etch depth	70 nm
Grating period	630 nm
Fill factor	50 %
Angle of incidence	8°
Coupling loss	< 5 dB
Central Wavelength	1550 nm