YONATA ELECTRONICS

SWT5100

SILICON PHOTONIC WAFER TEST SYSTEM

Product Description

The SWT5100 is a high-performance wafer-level test system for automated testing of silicon photonic wafers. It supports 8 to 12-inch wafers and provides a fully automated testing process, from wafer loading to optical alignment. Equipped with a temperature-controlled chuck ranging from 25°C to 150°C, it supports optical, DC, and RF testing. It is compatible with both grating and edge coupling, offering flexible configurations from single fibers to fiber arrays.

Key Specifications

Wafer Size	8 to 12 inches
Wafer Thickness	200 ～ 2000 μm
Chuck Temperature Range	25°C ～ 150°C
Test Support	Optical, DC, RF
Coupling Method	Grating and Edge Coupling
Coupling Speed	< 1.0 s (typical)
Coupling Repeatability	< 0.2 dB
FAU Calibration Time	3 minutes (automated)
Positioning System	Hexapod or 6-axis motorized positioner
Positioning Repeatability	0.1 μm

Test Parameters

Type	Test items	Unit	Definition
O/O	Insertion loss	dB	Difference of the input and output optical power
	Wavelength Scan	dBm	Scan spectrum with tunable laser,recording the output optical power at each wavelength of DUT
	Coupling strength	dBm	Using an X-Y piezo stage to position the fiber array at the best coupling point
O/E	PD responsivity	A/W	Efficiency of the PD in converting received light into current
	Modulator ER	dB	Ratio of optical power when a one is transmitted versus when a zero is transmitted
	Heater PIV Scan	-	Scans the current/voltage curve of the heater, the MPD current and optical power curves, identifying the points of modulator's peak/null/quad
	MPD Optical Current	nA	Optical current of the MPD recorded during the heater PIV scan
E/E	MPD dark current	nA	Noise current of the MPD in the dark under different biases voltages
	MPD resistance	Ω	Resistance of MPD
	Heater resistance	Ω	Resistance of heater
	Epower/Pπ	mW	Power required to shift the modulator's phase by π