

Programmable Differential Group Delay Line

(patent pending)

Product Description

The PSDGD Series photonic delay line provides a variable amount of group delay difference between two linear orthogonal polarization states. It can digitally vary 1st order PMD from 0ps to 50 ps in less than 100 us reconfigurable time with a resolution of 5.7ps and 1.36ps (4 bit and 6 bit resolution, respectively). This is achieved using patented non-mechanical bi-direction configuration and activated via an electrical control signal. Latching operation preserves the selected optical path after the drive signal has been removed. All solid-state configuration eliminates the need for mechanical movement and organic materials. The device is designed to meet the most demanding requirement of ultra-high reliability and fast response time. An optional driver plus software is also available.



Performance Specifications

PSDGD Photonic Delay Line	Min	Typical	Max	Unit
Wavelength band	1520	1550	1580	nm
Insertion Loss ¹		1.5	1.7	dB
Switching Time(fall, rise)		50	100	μs
Repetition Rate			1	KHz
1st order PMD	-45		45	ps
DGD Varying Resolution (6-bit)		1.36		ps
2nd order PMD			90	ps ²
Transient DGD			1.36	ps
PDL Over All DGD Values		0.15	0.3	dB
PDL Variation Over All DGD Values	-0.2		0.2	dB
Wavelength Dependent Loss			0.25	dB
Return Loss	50	55	60	dB
Operating Temperature	0		60	°C
Optical Power Handling		400		mW
Storage Temperature	-40		85	°C
Dimensions		130x70x12		mm

Note: 1: 4 bit version without connectors

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Features

- High speed
- Non-mechanical
- High reliability
- Fail-safe latching
- Low insertion loss
- Low power consumption

Applications

- PMD Compensation
- Instrumentation

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Electrical Driving Requirements

Parameter	Typical	Minimum	Maximum	Unit
Switch Voltage	2.5	2.3	2.8	V
Switch Current	140	120	160	mA
Pulse Duration	1	0.1	100	ms

Evaluation kit with TTL and RS232 interface and Windows™ GUI also available

Ordering Information

SDGD-	8 <input type="checkbox"/>	<input type="checkbox"/>	1	1	1	<input type="checkbox"/>	0	<input type="checkbox"/>
	Type	Wavelength	Configuration	Package	Fiber Type	Delay Range	Connector	
	Standard =1 Bi-directional=2	1550 = 5 Special = 0			Bare fiber =1 900um loose tube=3 Special=0	Custom	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC = 7 Special = 0	