

Solid State Variable Photonic Time Delay

(patent pending)

Product Description

The SSTD Series Photonic Time Delay selectively routes optical signals through N fiber segments whose lengths increase successively by a power of 2. Since each switching element allows the signal to either connect or bypass a fiber segment, a delay T may be inserted, which can take any value (in increments of ΔT) up to the maximum value T . This is achieved using a patent pending non-mechanical configuration and activated via an electrical control signal. Latching operation preserves the selected optical path after the drive signal has been removed. The solid-state configuration eliminates the need for mechanical movement and organic materials. The device is designed to meet the most demanding switching requirements of ultra-high reliability and fast response time.

Performance Specifications

SSTD Series Photonic Delay Line	Min	Typical	Max	Unit
Wavelength band	1520	1550	1580	nm
	1280	1310	1340	nm
Insertion Loss ¹	2.5	2.8	3.5	dB
Cross Talk	22	28	35	dB
Switching Time(fall, rise)		50	200	μ s
Repetition Rate			1	KHz
Delay Time Range	n		m	s
Polarization Dependent Loss	0.15	0.25	0.45	dB
Polarization Mode Dispersion		0.1	0.2	ps
Return Loss	50	55	60	dB
Operating Temperature	0		60	$^{\circ}$ C
Optical Power Handling		400		mW
Storage Temperature	-40		85	$^{\circ}$ C
Fiber Type and Length	Corning SMF-28, Length >1			m

1. Insertion Loss Max value is 4.2 for 5 bits.

Features

- 4-Bit Resolution or more
- High Speed
- Non-Mechanical
- High Reliability
- Fail-Safe Latching
- Low Insertion Loss
- Low Power Consumption

Applications

- Phase-Array Antennas
- Instrumentation

