

# Solid State Variable PM Photonic Time Delay

(patent pending)

## Product Description

The SSTD PM 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  $\Delta T$ ) 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.

## Features

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

## Performance Specifications

SSTD PM Series Photonic Delay Line	Min	Typical	Max	Unit
Wavelength band	1520	1550	1580	nm
	1280	1310	1340	nm
Insertion Loss <sup>1</sup>	2.5	2.8	3.5	dB
Cross Talk	22	28	35	dB
Switching Time(fall, rise)		50	200	$\mu$ s
Repetition Rate			1	KHz
Delay Time Range	n		m	s
Extinction Ratio	18	25	30	dB
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.

## Applications

- Phase-Array Antennas
- Instrumentation

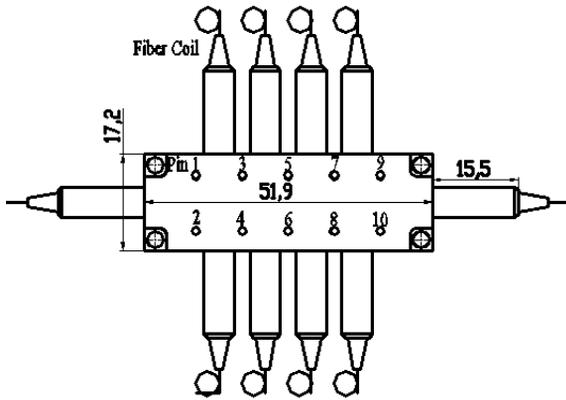
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## Electrical Driving Requirements

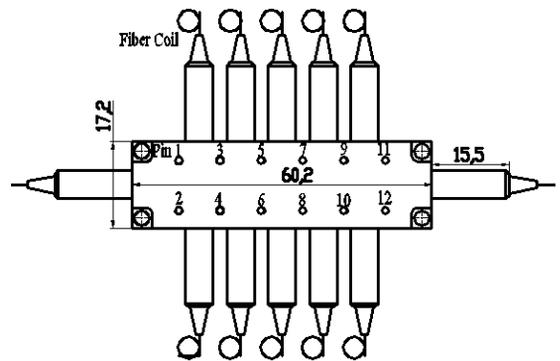
Parameter	Typical	Minimum	Maximum	Unit
Switch Voltage	2.5	2.3	2.8	V
Switch Current	140	120	160	mA
Pulse Duration	1	0.1	100	ms

Evaluation kit with TTL and RS232 interfaces and Windows™ GUI also available.

## Mechanical Dimensions (mm)



4 bits



5 bits

## Ordering Information

SSTD-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	1	<input type="checkbox"/>	<input type="checkbox"/>	0	<input type="checkbox"/>
Type	Wavelength	Configuration	Package	Fiber Type		Delay Range	Connector		
4x2=4 Bits 2 sides 5x2=5 Bits 2 sides Special=00	1310=3 1550=5 Special=0			Panda PM Fiber 400=4 Panda PM Fiber 250=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		