

Integrated Solid State Variable Photonic Time Delay (Patent Protected)

Product Description

The SSTD Series photonic time delay selectively routes optic signal through N delay segments whose delay time increase successively by a power of 2. Since each switching element allows the signal to either connect or bypass a delay 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. All solid-state configuration eliminates the need for mechanical movement and organic materials. The device is designed to meet the most demanding switching requirement of ultra-high reliability and fast response time.

Features

- High speed
- Non-mechanical
- high reliability
- Fail-safe latching
- low power consumption

Performance Specifications

Integrated Series SSTD	Min	Typical	Max	Unit
Wavelength band	1535	1550	1565	nm
Insertion Loss ^[1] (4-bit version)		2.8	3.5	dB
	(5-bit version)		3.4	
Cross Talk	22	28		dB
Switching Time(fall, rise)		50	200	μ s
Repetition Rate			1	kHz
Delay Time Range			300	ps
PDL (SMF version)	0.15	0.35	0.80	dB
ER (PMF version)	18			
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	SMF-28 or Panda PM or equivalent			
Package Dimension ^[2]	TBD (150x30x10 roughly)			

[1]. Exclude connector. L band version is available.

[2]. Final dimension will be determined per total time delay.

Applications

- phase-array antennas
- Instrumentation

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Electrical Driving Requirements

Parameter	Minimum	Typical	Maximum	Unit
Switch Voltage	2.3	2.5	2.8	V
Switch Current	120	140	160	mA
Pulse Duration	0.2	0.3	0.5	ms

For each switching core

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

PIN arrangement and package size will be finalized after TD confirmation.

Prototype Picture (4-bit version)



Ordering Information

SSTD-	8 8	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	0	<input type="checkbox"/>
	Type	Wavelength	Configuration	Package	Fiber Type		Delay Range	Connector
		1550nm = 5 1310nm = 3 Special = 0	4-bit = 1 5-bit = 2	Standard = 1	SMF-28 = 1 PM Panda = 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