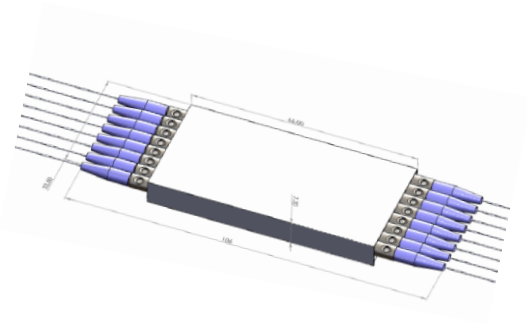
Variable Fiber Optical Splitter/Coupler Array

(1x2, 2x2, SM, PM)

(Protected by U.S. patent 7,403,677B1 and pending patents)

DATASHEET

BUY NOW



The Variable Fiber Optical Splitter splits an incoming optical signal among two output optical fibers with a continuously variable ratio controlled by a electrical input voltage from 0 to 5V. When the electrical control signal is removed, the splitter returns to a pre-determined ratio with a standard version of 100:0. The device is bidirectional, transmitting light in both direction simultaneously. The all-solid-state crystal design provides high reliability. The Variable Fiber Optic Splitter has passed Telcordia reliability qualification tests. It is designed to meet the most demanding requirements of ultra-high reliability, fast response time, and continuous operation.

The unit is mounted on a driving board having a control signal input SMA connector and a wall plug-in power supply. Available with several electronic driver having performance optimized for various repetition rate.

Features

- High Speed
- High Reliability
- Low Loss
- Compact

Applications

- Instrumentation
- Power balance
- Sensor

Specifications

Parameter		Min	Typical	Max	Unit
Central Wavelength		450		2000	nm
Insertion Loss [1]	1260~1650nm		0.6	1	dB
	900~1260nm		0.8	1.3	dB
	760~900nm		1	1.5	dB
	650 -850		1.5	1.9	dB
	450-580		2	2.5	dB
Cross Talk at 100% splitter [2]		20	25	35	dB
Splitting Variation	Output 1	100~0			%
	Output 2	0~100			%
	Type		Continuous		
Response Time (Rise, Fall)				1000	Ns
Repetition Rate [3]		DC	20	1000	kHz
Polarization Dependent Loss			0.1	0.35	dB
IL Temperature Dependency			0.25	0.5	dB
Polarization Mode Dispersion			0.1	0.2	Ps
Return Loss		45	50	60	dB
Operating Temperature		-5		70	°C
Optical Power Handling [4]			300		mW
Storage Temperature		-40		85	°C

Notes:

[1]. Excluding connectors.

[2]. Cross talk is measured at 5kHz, which may be degraded at the high repeat rate.

[3]. High repetition rate (up to 100 kHz) is available.

[4]. Defined at 1310/1550nm. For the shorter wavelength, the handling power may be reduced.

Rev 01/11/24

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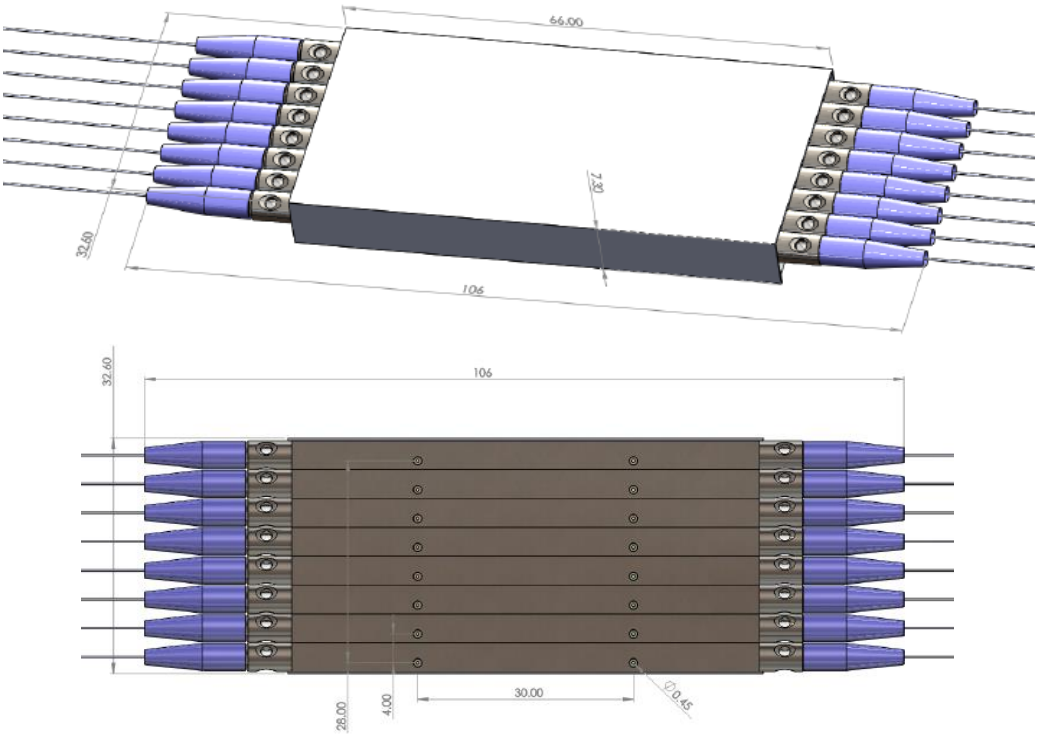
Mechanical Dimensions (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Driving Board Selection

Maximum Repetition Rate	Part Number (P/N)
20 kHz	
100 kHz	

Operation Instruction

1. Plug in the accompanied power supply
2. Plug in a 0-5V control signal to the input SMA connector (golden color). One can use a DC power supply first, and then a function generator. The optical output will change from maximum to minimum or from minimum to maximum depending on which port is measured.
3. Do not adjust settings on the board

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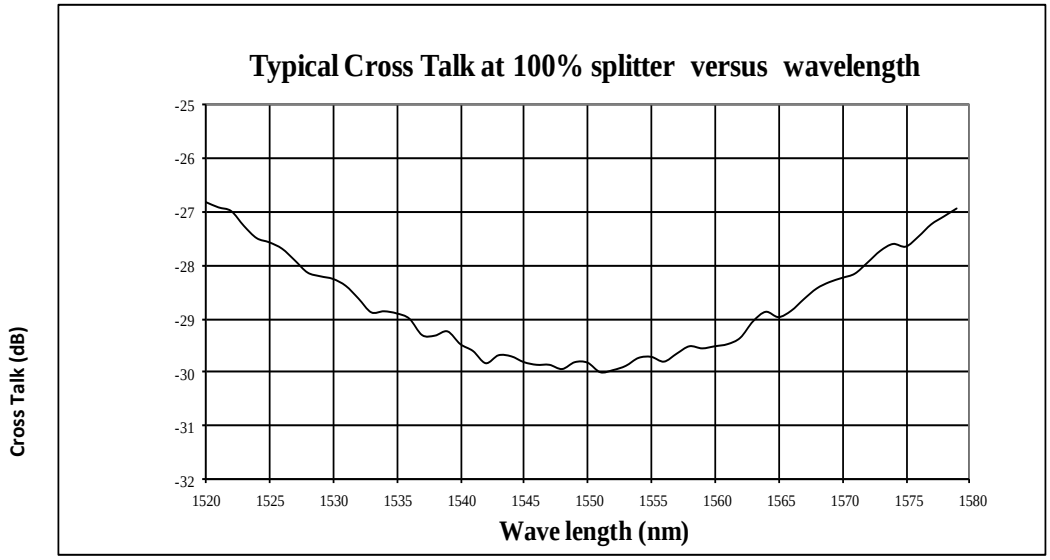
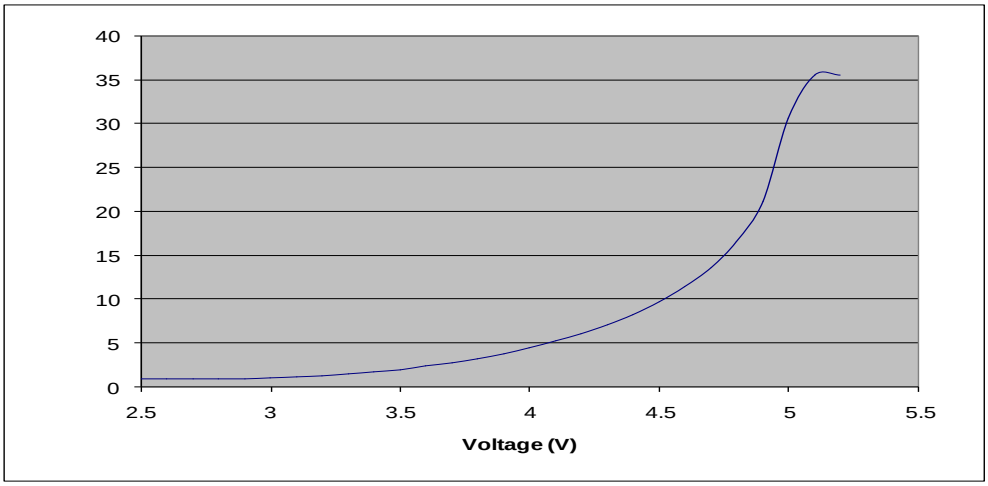
Wavelength Dependence



Typical Attenuation versus Voltage



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Ordering Information

	☐☐	☐	☐	☐	☐	☐	☐	☐
Prefix	**Type**	**Wavelength**	**Repetition**	**Channel**	**Fiber Type**	**Fiber Cover**	**Fiber Length**	**Connector**
NSVS-	1x2 = 12 2x2 = 22	1060 = 1 2000 = 2 1310 = 3 1480 = 4 1550 = 5 1625 =6 780 = 7 850 = 8 650 = E 550 = F 400 = G 1565~1620 = L Special = 0	20kHz = 2 100kHz = 3	1 = 1 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 7 = 7 8 = 8	SMF-28 = 1 HI1060 = 2 HI780 = 3 PM1550 = 5 PM850 = 8 PM980 = 9 Special = 0	Bare fiber = 1 900um tube = 3 Special = 0	0.25m = 1 0.5m = 2 1.0 m = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 LC/PC Duplex = 8 LC/APC = 9 LC/UPC = U Special = 0

Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness

Fibers with smaller core diameters (<5 μm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.