

Multi-Channel VOA Array with Integrated Monitor

(integrated power control and power monitor module)



(patent pending)

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Features

- Highly Reliable
- Highly precise
- Low IL
- Large dynamic range

Applications

- Optical Power Control
- Optical Power Regulation
- Optical Power Balance
- Instrumentation



The Multi-channel Variable Fiber Optical Attenuator with Integrated Power Monitor Module (VOA-TAPM) is designed to provide the precision control of a steady output optical power or attenuation independent of environmental variations or input laser instability. The input-tap and output-tap are integrated with VOAs in a compact module. The module eliminates laser power variations, such as PDL, WDL, TDL, etc., and is particularly suitable for continuous optical power regulation and transient optical suppression, as well as analog signal modulation applications. The module is a platform ready for customization with a control electronics option.

Specifications

Parameter	Min	Typical	Max	Unit
Central Wavelength	780~1100	1260~1360	1510~1620	nm
Channel Number	4	8		
Insertion Loss ^[1]		1.5		dB
Attenuation Range		30		dB
Control Voltage		3.5	5	V
ILPM (Input/Output) Accuracy		± 0.1		dB
Return Loss ^[2]	55			dB
Maximum Input Power			20	dBm
Minimum Detectable Power	-30			dBm
VOA Response Time	0.1		5	ms
Electrically Power Consumption/Channel			0.2	W
Resolution	Continuous			
Operating Temperature	-20 ~ 70			°C
Storage Temperature	-40 ~ 85			°C
Fiber Type	Corning SMF-28 or MMF or PMF			

Notes:

[1]. Measured without connector

[2] Noted as SM fiber

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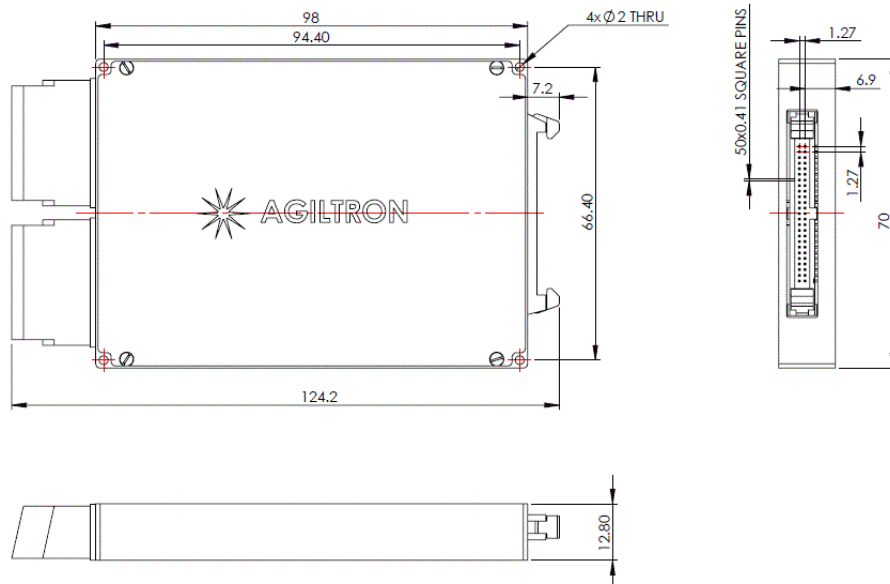
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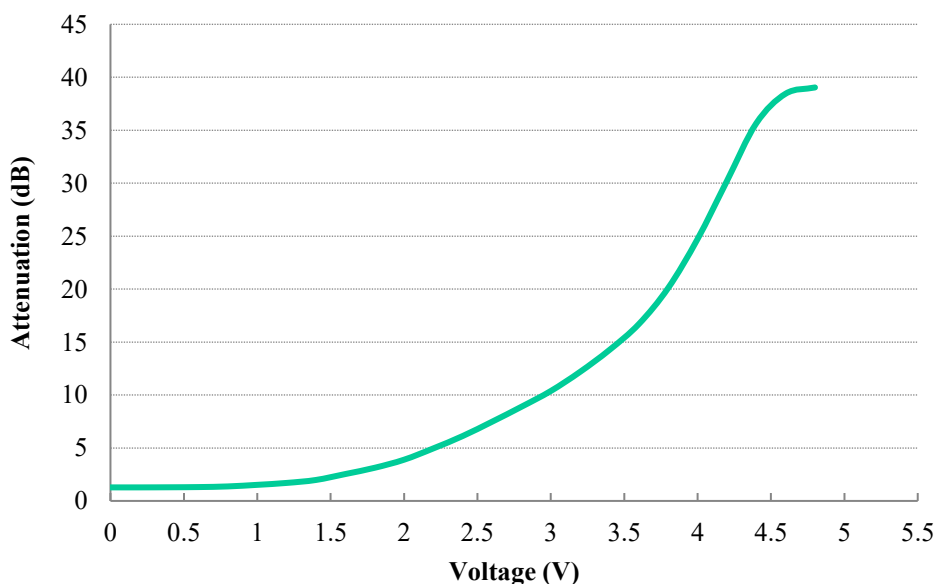
Mechanical Footprint Dimensions (Units: inch)



Note: Typical size for 4 Channel module only.

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

VOA Performance



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Electric PIN Assignment

The connector J9 supports a 50 pin ribbon cable with 50 mil centers. Samtec EHF-125-01-L-D-RA-K or equivalent connector should be used.

The pin definition will be provided in the application note

Ordering Information (Part Number)

Prefix	ILPM	Channel number	Wavelength	Off State	Package Type	Fiber Type	Connector ^[1]
VTAP-	Input ILPM only = 10 Output ILPM only = 01 Input & Output ILPM = 11	Ex. 4 channels = 04	1060nm = 1 1260-1620 = 2 1310nm = 3 1410nm = 4 1550nm = 5 850nm = 8 Special = 0	Normally open = 1 Normally closed = 2	Standard = 1 Special = 0	Select below	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 LC/APC = 8 LC/UPC = U Special = 0

[1]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

Fiber Type Selection Table:

1	SMF-28	34	PM1550	71	MM 50/125μm
02	SMF-28e	35	PM1950	72	MM 62.5μm
03	Corning XB	36	PM1310	73	MM 105/125μm
04	SM450	37	PM400	74	MM200 μm
05	SM1950	38	PM480	75	MM300 μm
06	SM600	39	PM630	76	MM400 μm
07	Hi780	40	PM850	77	MM600 μm
08	SM800	41	PM980	78	IRZS23
09	SM980	42	PM780	79	IRFS32
10	Hi1060	43	PM350	80	PCF
11	SM400	44	PM405	81	UV180nm
12		45	PM460	82	LMA-PM-10
13		46		83	MM 1mm

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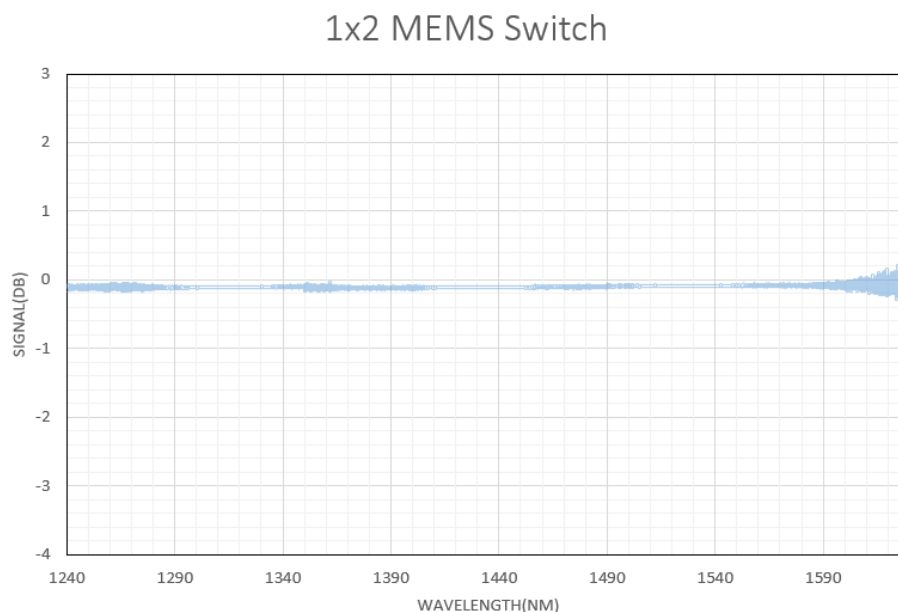
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Typical Insertion Loss vs Wavelength (1240-1630nm)



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