

# 8 Channel MEMS Variable Attenuation Array

(Compact Size, 8 channels, 0-5V, 780-2640nm, 40/70dB attenuation, SM, MM, PM)



(Protected by U.S. patent 8,666,218 and other patents pending)

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## Features

- Low Loss
- High Reliability
- Low Power Consumption
- Compact

## Applications

- Gain Control
- Power Equalizer

The MEMS series VOA array utilizes a micro-electro-mechanical mechanism with a compact design, simple construction, and easy direct drive, delivering exceptional optical performance. We offer two versions: one with high repeatability and attenuation of up to 40dB and another less precise version with up to 70 dB attenuation. Each channel in the VOA is controlled by directly applying an electrical voltage.

The MEMS series VOA array complies with Telcordia 1209 and 1221 reliability standards.

A version designed for reliable operation in vibration-prone environments is available as an option.

## Specifications

Parameter	Min	Typical	Max	Unit
Operating Wavelength	850~1310, 1260~1620			nm
Insertion Loss (without connector)		0.6	0.8	dB
Attenuation Dynamic Range	40		55	dB
Repeatability (0-60 °C)		0.3	0.5	dB
Polarization Dependent Loss (SM, 0~15dB)		0.1	0.2	dB
Extinction Ratio (PM)	18	22		dB
Return Loss	SM, PM:	50		dB
	MM:	35		dB
Wavelength Dependent Loss <sup>[1]</sup>		0.45	0.8	dB
Response Time (0~20dB)		1	3	ms
Optical Power Handling (CW)		300	400	mW/ch
Polarization Mode Dispersion		≤ 0.05		ps
Optical Cross Talk		≥ 65		dB
Attenuation Resolution		Continuous		dB
Max. Power Consumption		< 0.2 <sup>[2]</sup>		W
Electric Power Input (DC)		5		V
Electrical Control Signal		0 ~ 5		V
Operating Temperature		-20 ~ +75		°C
Storage Temperature		-40 ~ +85		°C
Relative Humidity Range		0 ~ 85		%

### Notes:

[1]. Within 40nm band, 0~20dB

[2]. At the maximum attenuation 50dB for all 8 channels

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# 8 Channel MEMS Variable Attenuation Array

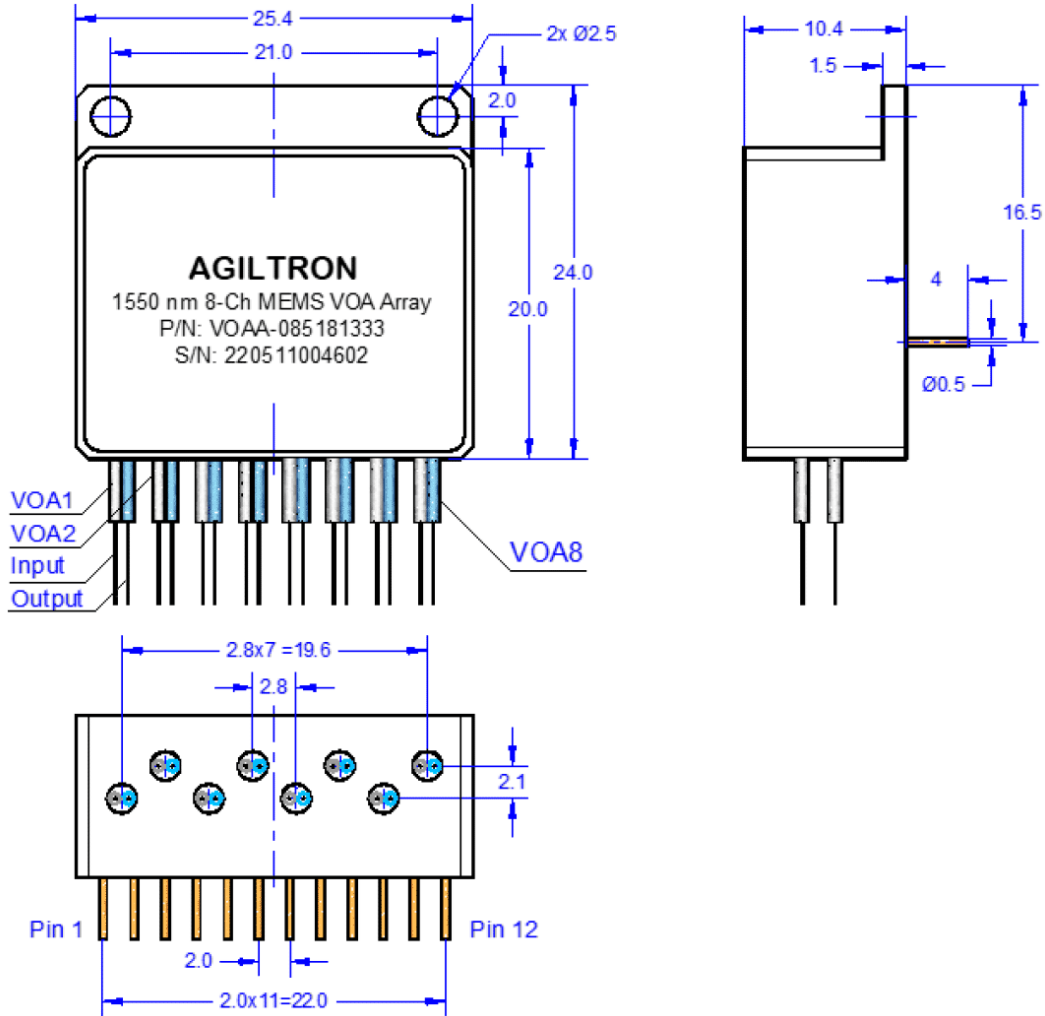
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### Dimensions (mm)



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

### Driving Instruction

Pin 1	VOA 1 (0 ~ 5V)	Pin 7	VOA 5 (0 ~ 5V)
Pin 2	VOA 2 (0 ~ 5V)	Pin 8	VOA 6 (0 ~ 5V)
Pin 3	VOA 3 (0 ~ 5V)	Pin 9	VOA 7 (0 ~ 5V)
Pin 4	VOA 4 (0 ~ 5V)	Pin 10	VOA 8 (0 ~ 5V)
Pin 5	GND	Pin 11	GND
Pin 6	GND	Pin 12	5V power supply

**NOTE:** The control signal current is less than 0.2mA

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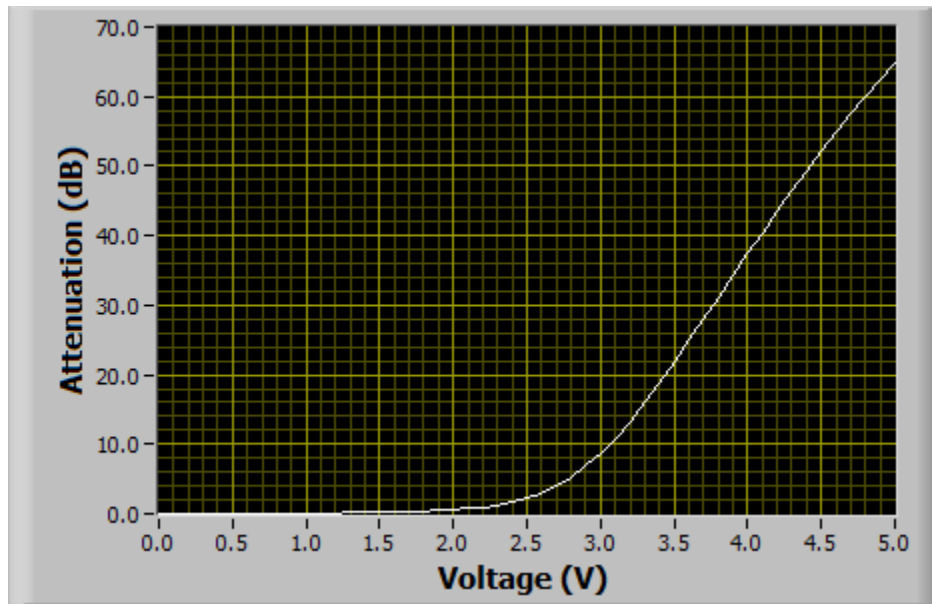


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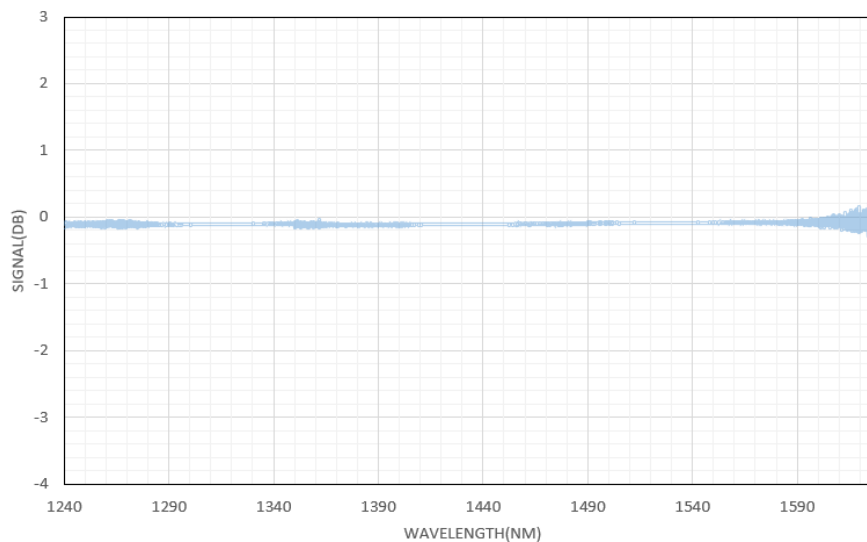
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### VOA array typical attenuation curve

8-Channel MEMS VOA array typical attenuation curve



### Typical Insertion Loss vs Wavelength (1240-1630nm)



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### Ordering Information

Prefix	Type	Wavelength	Off State	Attenuation	Fiber Type	Fiber Cover	Fiber Length	Connector
<b>VOAA-</b>	8-ch = 08 7-ch = 07 6-ch = 06 5-ch = 05 4-ch = 04 3-ch = 03 2-ch = 02 V8-ch <sup>[1]</sup> = V8	1060 = 1 C+L = 2 1310 = 3 1550 = 5 780 = 7 850 = 8 850~1310 = A 1260~1620 = B Special = 0	Transparent = 1 Opaque = 2 Special = 0	40dB = 8 70dB = 7	SMF28 = 1 HI1060 = 2 HI780 = 3 MM50/125 = 5 MM62.5/125 = 6 PM1550 = B PM1310 = D PM980 = E PM850 = F Special = 0	Bare fiber = 1 0.9mm tube = 3 Special = 0	0.25 m = 1 0.5 m = 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 Duplex LC/PC = 8 LC/APC = A LC/UPC = U Special = 0

[1]. For operating in vibration environment

**Note:**

“transparent” means no attenuation without applying a controlling voltage-off state, the “opaque” means the highest attenuation without applying a controlling voltage.