

# Liquid Crystal Based 8-Channel Variable Optical Attenuator Array



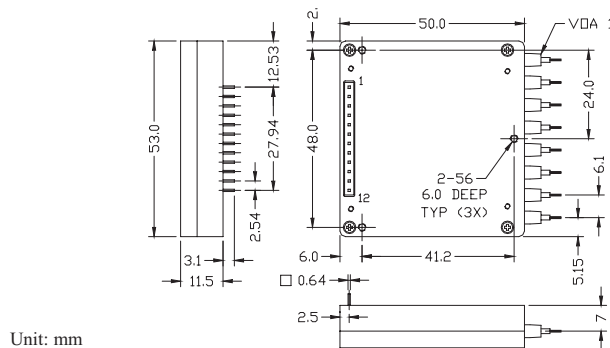
## Specifications

Parameters		Unit	Normal-on		Normal-off	
			Grade P	Grade A	Grade P	Grade A
Operating Wavelength Range	-	nm	C-band , L-band or C- & L-band			
Attenuation Range	Min	dB	20, 30 or 40		21 or 33	
Insertion Loss	Max	dB	1.0	1.2	1.1	1.3
Polarization Dependent Loss	@10dB	Max	0.15	0.2	0.25	0.3
	@20dB	Max	0.25	0.4	0.35	0.5
Wavelength Dependent Loss	@10dB	Max	0.4 @ C-band or L-band			
Polarization Mode Dispersion	Max	ps	0.1			
Chromatic Dispersion	Max	ps/nm	0.2			
Return Loss	Min	dB	45			
Attenuation Resolution	Min	dB/mV	Continuous			
Maximum Optical Power	Min.	mW	300			
Response Rise Time	Max	ms	5			
Response Fall Time	Max	ms	35 (-5°C ~ 23°C), 15 (23°C ~ 70°C)			
Driving Voltage (DC)	-	V	0 ~ 5			
Power Supply (DC)	-	V	+ 5			
Power Consumption	Max	mW	200			
Operating Temperature	-	°C	-5 ~ 70			
Storage Temperature	-	°C	-40 ~ 85			
Fiber Pigtail	-	-	SMF-28, 250µm bare fiber or 900µm loose tube, 1.0 ± 0.1m			
Dimensions	-	mm	50 x 53 x 11.5			

Note 1: insertion loss and return loss don't include connectors.

Note 2: response time includes contributions from electrically driving circuits; measured between 10 % and 90 % of maximum attenuation.

## Dimensions



## Ordering Information

A	V	O	A			0	8			1		0		
				Attenuation Range		Operation Mode		Operating Wavelength		Grade		Connector		
				20= 20dB (normal-on) 30= 30dB (normal-on) 40= 40dB (normal-on) 21= 21dB (normal-off) 33= 33dB (normal-off)		1= normal off 2= normal on		C= 1525 ~ 1565nm L= 1570 ~ 1615nm E= 1525 ~ 1615nm		P= grade P A= grade A		0= None 1= FC/UPC 2= FC/APC 3= SC/UPC 4= SC/APC 5= LC/UPC 6= MU/UPC		
				Pigtail Type										
				0= 250µm bare fiber 1= 900µm loose tube										

This product information is subject to change without notice.

## Features/Benefits

- Small footprint
- Built-in driver
- Continuous tuning without moving parts
- Resistant to mechanical vibration
- Wide operating wavelength range
- Low PDL, WDL
- Slow tuning slope without backlash and hysteresis
- Low cost

## Applications

- Channel balancing in DWDM systems (pre-emphasis)
- Power equalization in optical add/drop modules and optical cross-connects
- Gain-tilt and power adjustment in EDFAs
- Receiver protection

## Driver Pin Assignment

Pin	Function
1	5V DC
2	Channel 1 driving
3	Channel 2 driving
4	GND
5	Channel 3 driving
6	Channel 4 driving
7	Channel 5 driving
8	GND
9	Channel 6 driving
10	Channel 7 driving
11	GND
12	Channel 8 driving

Pin dimension is 0.64 x 0.64mm and pin pitch is 2.54mm.