

Liquid Crystal Based Variable Optical Attenuator



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	dB	0.15	0.2	0.25	0.3
	@20dB	Max	dB	0.25	0.4	0.35	0.5
Wavelength Dependent Loss	@10dB	Max	dB	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 (without driver)	-	V	0 ~ 30 Peak to Peak, 10 KHz Square Wave				
Driving Voltage (with driver)	-	V	0 ~ 5 DC				
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	φ7.2 × 23.5 without driver 36.3 × 12.7 × 11.5 with driver				

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.

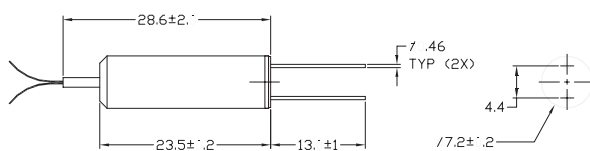
Features/Benefits

- Small footprint in a coaxial package
- 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

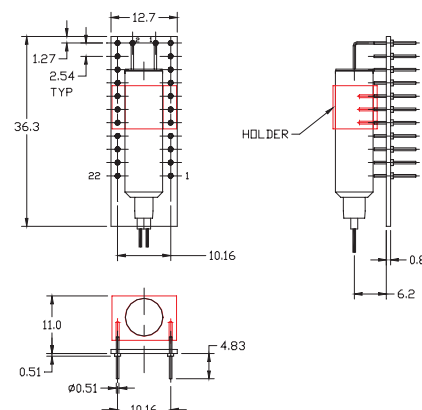
- Channel balancing in DWDM systems (pre-emphasis)
- Power equalization in optical add/drop modules and optical cross-connects
- Gain-tilt and power adjustment in EDFAs
- Receiver protection

VOA Dimensions



Unit: mm

VOA + Driver Assembly Diagram



Driver Characteristics

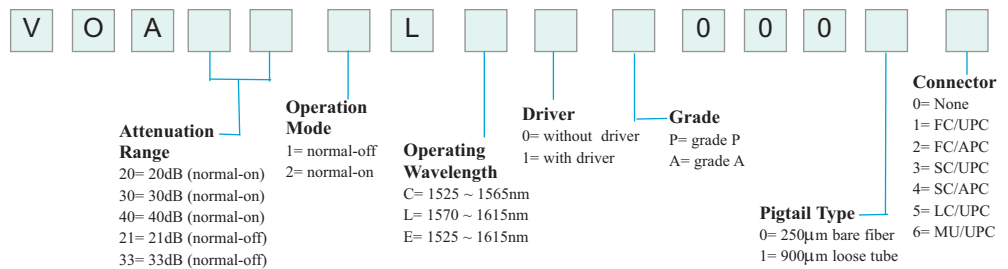
Parameter	Unit	Specification
Power Supply	V	+ 5
Power Consumption	mW	≤ 300
Driving Voltage	V	0 ~ 5
Dimension (excluding electric pin)	mm	36.3 × 12.7 × 1.3
Electric Pin Dimension	mm	φ0.51 × 4.83
Electric Pin Pitch	mm	2.54

Driver Pin Assignment

Pin	Function	Pin	Function
1	NC	12	VOA pin B (for off-board connection)*
2	GND	13	NC
3	NC	14	NC
4	NC	15	NC
5	NC	16	NC
6	NC	17	NC
7	Analog Input (0 to 5V)	18	NC
8	GND	19	NC
9	+5V Power Supply	20	NC
10	NC	21	GND
11	VOA Pin A (for off-board connection)*	22	NC

* Pin 11 and 12 can be used to test VOA. Otherwise, please let these two pins open and don't connect them to the ground.

Ordering Information



This product information is subject to change without notice.