



## MEMS VARIABLE OPTICAL ATTENUATOR

### OVERVIEW

The **sercalo** variable attenuator allows the continuous adjustment of the attenuation with a 0 – 5 V control voltage. The highly reliable attenuation mechanism is based on a micromechanical shutter and features below 2 ms response time and only 0.5 dB insertion loss. The low insertion loss and the fast response time make it an ideal component for active power tuning in WDM networks.

The miniature package withstands rugged environments and is well suited for direct mounting on printed circuit boards.

### APPLICATIONS

- power management in DWDM transceivers
- remote attenuation control
- EDFA control

### ORDERING INFORMATION

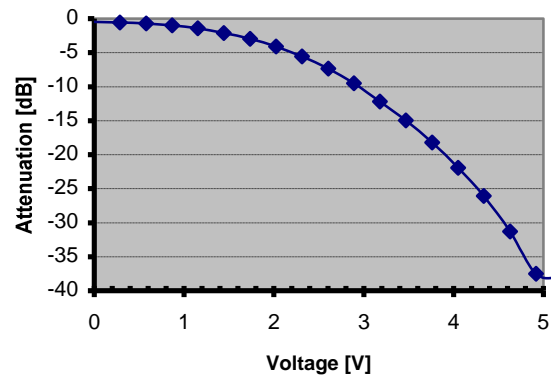
VP1-9N-12-16

### FEATURES

- reliable
- 0.4 dB insertion loss
- 2 ms response time
- low PDL
- miniature size
- non-latching

## DESCRIPTION

The **serealo** variable attenuator operates by moving an obstructing element into the optical beam between two single mode fibers. Fabricated by the latest silicon micromachining technology the device features low optical loss and small size. The position of the obstructing element can be adjusted by an integrated electrostatic actuator, resulting in a fast and hysteresis free response. As shown in the static voltage versus attenuation response, at low attenuation levels fine tuning of the attenuation is possible, whereas at high levels the tuning is coarser. Typically a maximum attenuation of over 40 dB is obtained with 5 V at the driver pin. The voltage on this pin is amplified by the built-in voltage converter to the appropriate voltage on the electrostatic actuator of the MEMS chip, which controls attenuation. The driver is ESD sensitive.



## TECHNICAL SPECIFICATIONS

	Unit	Min	Typ	Max
<b>VOA</b>				
Wavelength Range	nm	1240		1610
Insertion Loss	dB		0.4	0.8
Maximum Attenuation	dB	30	45	
Return Loss	dB		55	50
Polarisation Dependent Loss at 10 dB	dB		0.08	0.15
Polarisation Dependent Loss at 20 dB	dB		0.13	0.25
Spectral Flatness 1530-1570 nm at 10 dB	dB		0.2	0.5
Spectral Flatness 1530-1570 nm at 20 dB	dB		0.5	1.2
Response Time	ms		2	20
Fiber Pigtail	μm		9/125/900	
Durability	cycles		no wear out	
<b>Package</b>				
Voltage	V		5	5.25
Power Consumption	mW		50	
Operation Temperature	°C	0		70
Storage Temperature	°C	-40		85
Size (L x W x H)	mm		43 x 16.5 x 9.5	

## PIN CONNECTIONS

- 1 Supply 5 V
- 2 Control Signal 0-5 V
- 3 Ground 0 V

