



SINGLE CHANNEL 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 0.6 dB insertion loss. The low insertion loss and the high dynamic range 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

- electronic power management
- remote attenuation control
- On/Off switch

ORDERING INFORMATION

VA1-9N12-16

FEATURES

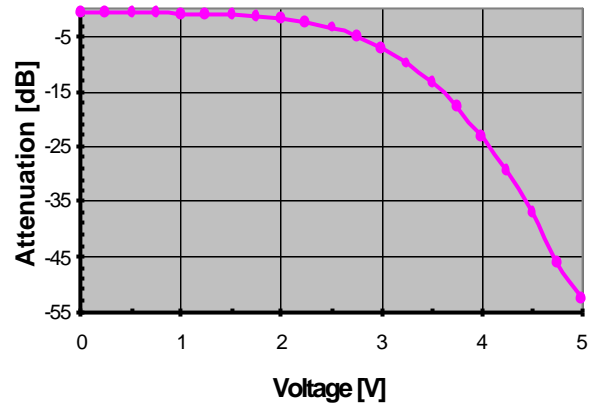
- reliable
- 0.6 dB insertion loss
- 2 ms response time
- 40 dB dynamic range
- miniature size
- non-latching

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DESCRIPTION

The **Sercalo** 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
VOA				
Wavelength Range	nm	1240		1600
Insertion Loss	dB		0.6	1.0
Maximum Attenuation	dB	40	45	
Return Loss	dB		45	30
Polarisation Dependent Loss ¹	dB		0.2	0.5
Response Time	ms		2	4
Fiber Pigtail	µm		9/125/900	
Durability	cycles		no wear out	
Package				
Voltage	V		5	5.2
Power Consumption	mW		50	
Operation Temperature	°C	0		70
Storage Temperature	°C	-40		85
Size (L x W x H)	mm		50 x 25 x 10	

¹ values around 10 dB attenuation. At lower attenuation levels PDL is proportionally lower.

PIN CONNECTIONS

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

Either of the channels is present.

