Voltage-Controlled Optical Attenuators

VCB Series

Key Features

- **High reliability for network applications**
- **Hermetically sealed**
- **Small size**
- **Integrated optical tap (optional)**
- **Potentiometer feedback to monitor attenuator settings**
- **Mountable on printed circuit board (PCB)**
- **Latching capability**
- **Single or multichannel applications**
- **Low loss**

Applications

- Power equalization in multichannel optically amplified networks
- Gain-tilt control in optical amplifiers
- Power control into narrowband wavelength division multiplexers (WDMs) and configurable networks
- Power control into receivers
- Local power monitoring and feedback attenuator settings use integrated input tap

The JDSU VCB Series of voltage-controlled optical attenuators is specifically designed for highly reliable optical power control in network applications. These devices are available with an input tap for optical monitoring purposes, eliminating the need for external tap couplers. They are Telcordia GR-1221 compliant, through the use of hermetic sealing technology, and feature latching capabilities. They show excellent optical performance over the C and L bands.

Each attenuator uses a stepper motor driven by an external IC driver to achieve fine attenuation resolution. The driver for the stepper motor is user-supplied to move the motor up or down in uniform step sizes. Latching operation is a standard feature; upon removal of the drive voltage, the most recent attenuation setting is retained.

JDSU attenuators withstand the diverse environmental conditions encountered in network applications. They ensure high reliability, particularly during long quiescent periods.

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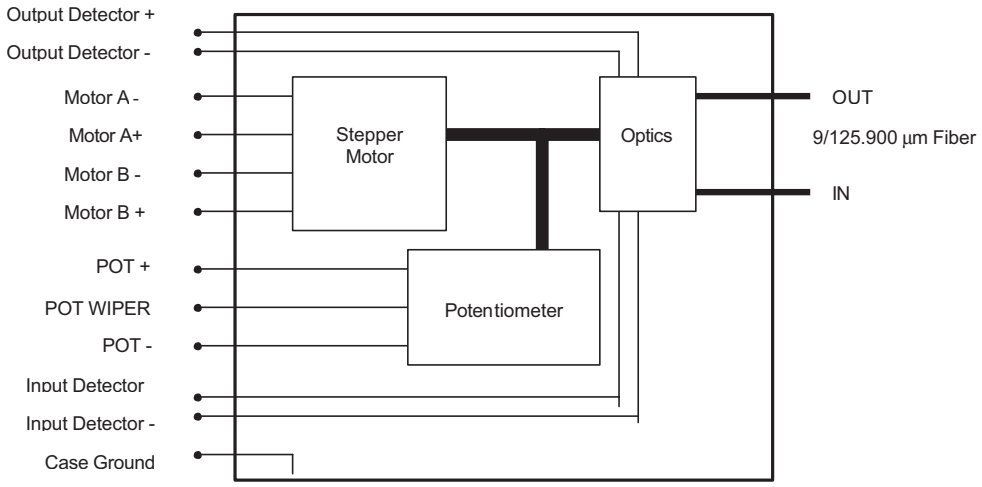
Configuration



Specifications

Parameter	Specification
Optimized wavelength range	1525 to 1575 nm (L-band version available)
Attenuation range	>30 dB
Attenuation resolution	≤0.1 dB
Minimum insertion loss[1]	
Straight-through channel[2]	≤0.6 dB
With input monitoring tap detector	≤1.2 dB
Attenuation temperature dependence[3]	≤0.15 dB
Attenuation wavelength dependence	
Flatness	Greater of 0.1 or 0.05 plus 1% of attenuation
Ripple[2]	≤0.6 dB
Polarization dependent loss[1,4]	<0.2 dB
Polarization mode dispersion	≤0.10 ps
Return loss[1]	>50 dB
Response speed[5]	≤100 ms
Attenuation setting repeatability	≤0.1 dB
Attenuation setting backlash	≤0.2 dB
Fiber type	SMF-28 with 900 µm buffered jacket
Maximum optical power	50 mW
Dimensions (W x H x D)[6]	25 x 12 x 50 mm
Operating temperature	-5 to 70 °C
Storage temperature	-40 to 85 °C

1. Excluding connectors.
2. Tapless model.
3. Relative to 23 °C.
4. For attenuation up to 15 dB over the optimized wavelength range.
5. Considering 3 dB attenuation change.
6. Excluding strain relief and connector pins.

Ordering Information

For more information on this or other products and their availability, please contact your local JDSU account manager or JDSU directly at 1-800-498-JDSU (5378) in North America and +800-5378-JDSU worldwide or via e-mail at customer.service@jdsu.com.

Sample: VCB0+1NC1.0NC1.0NC

VCB □ +1NC □□.□□

Code	Tap
0	Without taps
1	With input tap only

Code	Length 1
1.0	1.0 m
2.0	2.0 m

Code	Connector Type 1
NC	No connector
FP	FC/HPC
FA	FC/APC
SC	SC/HPC
SU	SC/APC
SP	ST/HPC

Code	Length 2
1.0	1.0 m
2.0	2.0 m

Code	Connector Type 2
NC	No connector
FP	FC/HPC
FA	FC/APC
SC	SC/HPC
SU	SC/APC
SP	ST/HPC

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