JDS Uniphase

Product Bulletin

VCB Series
Voltage-Controlled Optical Attenuators

PRELIMINARY

The VCB Series voltage-controlled attenuators have been specifically designed for highly reliable optical power control in network applications. Versions of the VCB Series are available with monitors for the attenuation setting, the output optical power, and/or the input optical power, eliminating the need for external tap couplers. The VCB is Telcordia GR-1221 compliant through the use of hermetic sealing technology and features latching capability. They have excellent optical performance over the C and L bands.

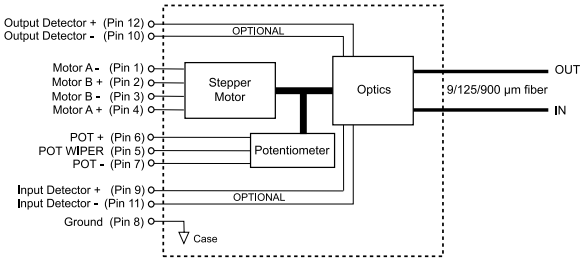
Each attenuator uses a stepper motor driven by an external IC driver to achieve fine attenuation resolution. The driver for the stepper motor is user-supplied to move the motor up or down in uniform step sizes, offering fine resolution. Latching operation is a standard feature; upon removal of the drive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

The attenuators can withstand the diverse environmental conditions encountered in network applications, ensuring high reliability, particularly during long quiescent periods.

Key Features
- High reliability for network applications
- Hermetically sealed
- Small size
- Optional integrated optical taps
- 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 WDMs and configurable networks
- Power control into receivers
- Local power monitoring and feedback attenuator settings using built-in input/output taps

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 or output monitoring tap detector	≤1.2 dB
	with input and output monitoring tap detectors	≤1.6 dB
Temperature dependence of attenuation[3]		≤0.15 dB
Wavelength dependence of attenuation[4]	flatness	<0.2 dB
	ripple[2]	≤0.05 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
Repeatability of attenuation setting		≤0.1 dB
Backlash in attenuation setting		≤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.

PRELIMINARY

Ordering Information

Indicate your requirements by selecting one option from each configuration table. Please print the corresponding codes in the available boxes to form your part number. For more information on this or other products and their availability, please contact your local JDS Uniphase sales representative or JDS Uniphase directly at 613 727-1303, or by fax 613 727-8284, or via email at sales@ca.jdsunph.com, or visit our Web site at www.jdsunph.com.

Sample: VCB3+1NC1.0NC1.0NC

VCB □ +1 N C □ . □ □ □ □ . □ □ □

Code	Filter
N	Normal

Code	Fiber Type
C	9/125/900 µm

Code	Tap
0	Without taps
1	With input tap only
2	With output tap only
3	With input and output taps

Code	Length 1
0.1	0.1 m
...	...
...	...
...	...
1.0	1.0 m (standard)
...	...
...	...
...	...
9.9	9.9 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
0.1	0.1 m
...	...
...	...
...	...
1.0	1.0 m (standard)
...	...
...	...
...	...
9.9	9.9 m

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

SMF-28 is a registered trademark of Corning Incorporated.

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