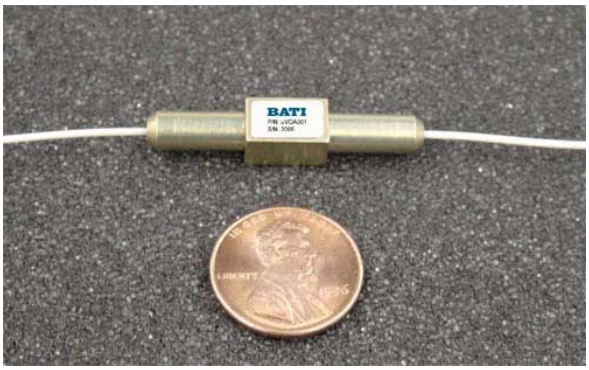
Eclipse™ Micro Variable Optical Attenuators

High-speed attenuation control with modulation capability



Boston Applied Technologies' Micro Variable Optical Attenuator (μVOA) is a voltage controlled optical variable attenuator. Based on the patented proprietary OptoCeramic® technology platform, the Eclipse™ μVOA provides high speed, high dynamic range, low insertion loss, low polarization dependence loss and the best reliability in a very compact package. The devices also enable polarization independent modulation of an optical signal traveling over standard single mode fiber while simultaneously maintaining a specified level of attenuation.

Features

- Precise, high-speed attenuation control
- Excellent optical performance
- All solid-state construction in a compact rugged package
- Superb temperature stability
- Meets or exceeds Telcordia GR1221, GR910, and GR1209 specifications
- Enables polarization insensitive modulation up to 1MHz

Applications

- Channel Equalization/pre-emphasis
- Optical amplification
- Instrumentation
- Wavelength tagging or supervisory channel encoding (using modulation function)

BATI
Boston Applied Technologies, Incorporated

Key Optical Specifications

	Performance	
Attributes[1,2]	**µVOA001**	**µVOA002**
Wavelength[3]	1530-1565, 1570-1610 nm	1530-1565, 1570-1610 nm
Insertion Loss	≤ 0.9 dB	≤ 0.6dB (≤ 0.4 dB, A version)
Dynamic Range	≥ 20 dB	≥ 25 dB
Spectral Flatness @ 15 dB Attenuation	0.5 dB max. 0.3 dB typical	0.1 dB typical[4]
Polarization Dependent Loss @ 1550nm and 15dB Attenuation	0.5 dB maximum 0.3 dB typical	0.1 dB typical[4]
Response Time (Full Range)[5]	< 30 µs	< 30 µs
Attenuation Resolution	Continuous	Continuous
Input Power	≤ 500 mW	≤ 500 mW
Return Loss	≥ 55 dB	≥ 55 dB
Device Capacitance	300 pF typical	300 pF typical
Modulation Rate	≤ 1 MHz	≤ 1 MHz
Modulation Depth[5]	0.5 dB typical	0.5 dB typical
Operating Temperature Range	0°C to 70°C	0°C to 70°C
Storage Temperature Range	-40°C to 85°C	-40°C to 85°C
Dimensions (L x W x H)	35 x 6.5 x 6 (mm)	35 x 6.5 x 6 (mm)

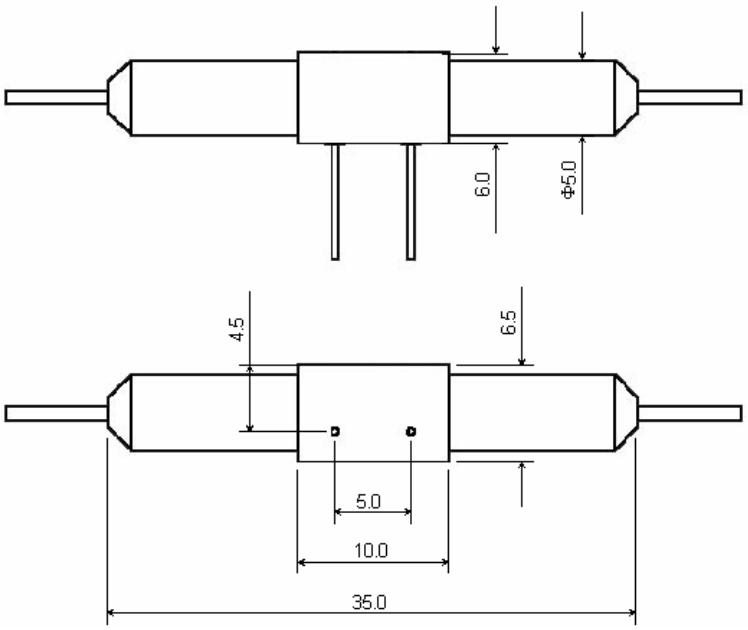
Notes:

1. Unless otherwise specified, all measurements are at 25°C
2. Normally opaque at zero applied voltage for µVOA001, normally transparent at zero applied voltage for µVOA002
3. 1310nm and other wavelength also available.
4. For applications attenuating a single wavelength utilizing BATI's feedback circuit. Contact BATI for special multi-wavelength µVOA002.
5. Devices with less than 1µs are also available.
6. Measured at 3 dB attenuation with a 20V sinusoidal signal at 150 kHz.

System Design Considerations

The µVOAs are designed to be used in a closed control loop. System performance combines the VOA characteristics above with those of the support circuitry. Configurations with either attenuation or output power control are possible. In both cases, the user electronically sets a desired value and the circuitry automatically adjusts the VOA to maintain it. Contact BATI for complete design information. An evaluation kit containing a fully functional system based on output power control is available.

Mechanical Footprint of µVOA



Notes:

1. All dimensions are in millimeters with a tolerance of 0.1 mm.
2. Pin diameter is 0.45 mm.

For More Information

For More information about Boston Applied Technologies' leadership in variable optical attenuation and modulation technology and other optical networking modules and components, visit our website at www.bostonati.com.

To obtain additional technical information or to place an order for this product, please contact us:

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