

LinkX™ UltraVOA™ Single-Channel

Mellanox's LinkX UltraVOA uses silicon photonics to deliver reliable solid-state current controlled optical attenuation enabling ultra-fast control of signal levels in optical networks. The Variable Optical Attenuator (VOA) consists of a reliable silicon p-i-n diode structure built across a silicon optical waveguide. As current is applied through the diodes, the free carriers in the waveguide absorb photons, creating a current-controlled variable attenuation.

Because the physical effect is based on electronic control, the response time of the VOA is fast—less than 1 μ s in typical situations. This VOA is well suited to the most demanding applications in metro and long-haul transmission applications. The high speed of these VOAs makes them particularly useful for optical transient suppression and analog signal modulation applications.




Table 1 - Optical Specifications

Specification	Units	Min	Typical	Max	Notes
Operating Wavelengths	nm	1525		1565	L-Band Available
Insertion Loss	dB		1.6	1.8	Without connectors
Operational Attenuation	dB	0		25	Default attenuation is 0 dB at no applied current
Response Time (0-25 dB)	μ s		1.0	2.0	10 – 90% step response
PDL (0-10 dB Attenuation)	dB		0.2	0.4	
PDL (10-25 dB Attenuation)	dB			0.5	
Wavelength Dependence of Attenuation	dB			1.0	At 10 dB attenuation
Optical Return Loss	dB	40			
Chromatic Dispersion	ps/nm	-0.05		0.05	
PMD	ps		0.05	0.1	
Optical Input Power/Ch	dBm			23	
Attenuation Variation With Temperature	dB/°C			0.10	At 10 dB attenuation
Attenuation Stability	dB	-0.25		0.25	Constant temperature and wavelength over 1 hour

Table 2 - Electrical Specifications

Specification	Units	Min	Typical	Max	Notes
Operating Current	mA		55	65	At 25 dB Attenuation
Forward Voltage	V			4.5	At 25 dB Attenuation

HIGHLIGHTS

KEY FEATURES

- High Speed <1 μ s
- Attenuation Range >25 dB
- All solid state design
- Compact package

APPLICATIONS

- Channel power equalization
- Optical transient suppression
- Analog signal modulation
- Power control in WDM and configurable networks

COMPLIANCE

- Telcordia Qualified
- RoHS 6/6

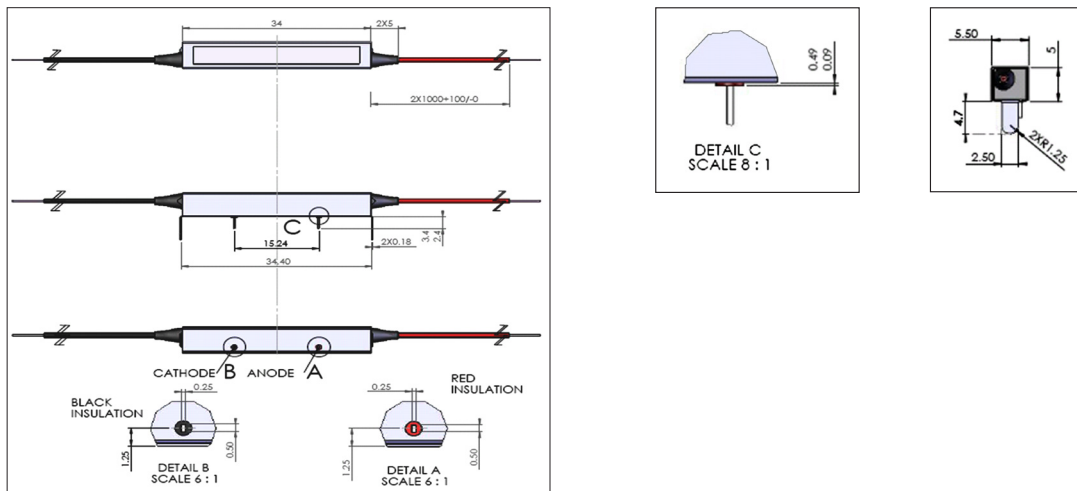
Table 3 - Environmental Specifications

Specification	Units	Min	Typical	Max	Notes
Operating Temperature	°C	0		75	Case Temperature
Storage Temperature	°C	-40		85	Ambient
Operating Relative Humidity	%			85	

Table 4 - Maximum Ratings

Specification	Units	Min	Typical	Max	Notes
Optical Input Power/Ch	dBm			25	
Electrical Power Dissipation	mW			500	
Current	mA			100	
Reverse Bias Voltage	V			20	
Soldering Temperature	°C			240	
Soldering Time	sec			5	

Package Drawing



Package Dimension

Length: 32mm
 Width: 5.5mm
 Height: 5mm

Fiber Length

Fiber length is 1 meter on each side

Fiber Type

SMF 28E Ribbon Fiber

Ordering Part Number	Description
K100-3210-80-00	VOA, 1ch 250µ coating SMF, 1m pigtail, no connectors
K100-3210-81-11	VOA, 1ch 900µ loose-tube jacket, SMF, 1m pigtail with LC/UPC optical connectors
K100-3210-81-15	VOA, 1ch 900µ loose-tube jacket, SMF, 1m pigtail with LC/APC optical connectors
K100-3210-81-21	VOA, 1ch 900µ loose-tube jacket, SMF, 1m pigtail with FC/UPC optical connectors
K100-3210-81-25	VOA, 1ch 900µ loose-tube jacket, SMF, 1m pigtail with FC/APC optical connectors
K100-3210-81-41	VOA, 1ch 900µ loose-tube jacket, SMF, 1m pigtail with SC/UPC optical connectors
K100-3210-81-45	VOA, 1ch 900µ loose-tube jacket, SMF, 1m pigtail with SC/APC optical connectors



350 Oakmead Parkway, Suite 100, Sunnyvale, CA 94085
 Tel: 408-970-3400 • Fax: 408-970-3403
www.mellanox.com