

etMEMS™ Variable Optical Attenuator Integrated With Input Tap (Voltage & Current control)

(US patent 8,666,218 and other patents pending)

Product Description

The etMEMS™ Series VOA with input tap is based on a micro-electro-mechanical mechanism featuring integrated compact design, simple construction, easy direct drive, excellent optical performance of ultra low insertion loss, low PDL, and broad wavelength operation range. The etMEMS™ Series VOA is compliant with the Telcordia 1209 and 1221 reliability standards. The etMEMS™ Series VOA is available in either normally-open or normally-closed configurations and with an integrated input tap option. The VOA is driven with an electrical current at low voltage or a converted voltage, and the attenuation can be continuously adjusted with the applied current.



Performance Specifications

etMEMS™ TVOA	Min	Typical	Max	Unit
Wavelength	1260-1360 and/or 1510-1620			nm
Insertion Loss ¹	0.3	0.5	0.8	dB
Polarization Dependent Loss ²		0.15	0.4	dB
Wavelength Dependence Loss ^{3,4}			0.2	dB
Temperature Dependence Loss ³		0.05	0.2	dB
Attenuation Range		25	35	dB
Attenuation Resolution	Continuous			
Polarization Mode Dispersion ²	0.005	0.01	0.05	ps
Return Loss	45			dB
Response Time			5	ms
Tap Response @ 1550nm	12	15	40	mA/W
Wavelength Dependence Response	0.010	0.020	0.025	dB/nm
Polarization Dependence Response ²	0.02	0.10	0.25	dB
Temperature Dependence Response			0.01	dB/°C
Dark Current at 5V bias @ 23°C			1	nA
Dark Current at 5V bias @ 70°C		30	70	nA
3dB Bandwidth (cutoff frequency)	10			MHz
Capacitance		12		pF
Power Consumption		30	100	mW
Optical Power		300	500	mW
Operating Temperature	-5		75	°C
Storage Temperature	-40		85	°C
Reliability	Telcordia 1209 and 1221			
Fiber Type	Corning SMF28			
Package Dimension ⁵	Φ6.1 X 35.2			mm

Notes:

- Without connector and in room temperature
- At attenuation equal or less than 20dB
- At 0dB attenuation and in whole temperature range
- Within 30nm Bandwidth
- Length can be shorter (minimum=25mm)

Features

- VOA + Tap
- Compact Size
- Low Cost
- High Reliability
- Low IL, PDL, WDL and TDL
- Direct Low Voltage Drive

Applications

- Power Control
- Power Regulation
- Channel Balance
- Instrumentation



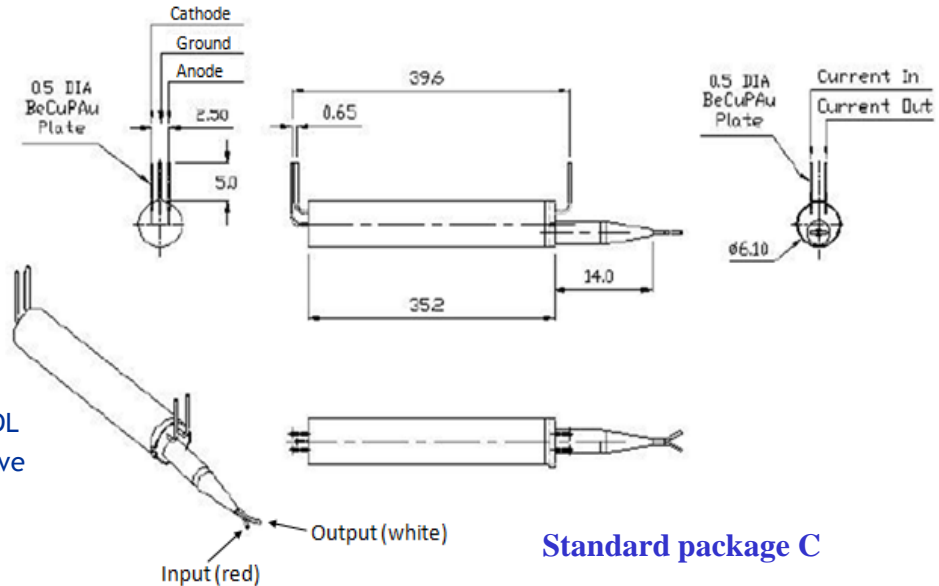
Revision: 03-10-15

15 Presidential Way, Woburn, MA 01801 Tel: (781) 935-1200 Fax: (781) 935-2040

www.agiltron.com

etMEMS™ Variable Optical Attenuator Integrated With Input Tap (Voltage & Current control)

Mechanical Footprint Dimensions (Unit:mm)



Standard package C

Features

- VOA + Tap
- Compact
- Low Cost
- High Reliability
- Low IL, PDL, WDL & TDJ
- Direct Low Voltage Drive

Electrical Connector Configurations

Parameter	Minimum ⁶	Typical ⁶	Maximum ⁶	Unit
Control Voltage ⁷	0.02	3	5	V
Control Current ⁷	10	40	60	mA

Note: 6 At 20dB attenuation

7 Voltage control is realized through matching with resistor. Customer may specify.

Applications

- Power Control
- Power Regulation
- Channel Balance
- Instrumentation

Ordering Information

Type	Wavelength	Off State	Package	Fiber	Fiber Length	Connector
Input tap current control=12	1310=3 1550=5 C+L=2 1310/1550=8 Special=0	Transparent=1 Opaque=2	Standard C=3 Special=0	SMF-28=1 Customized=2	Bare fiber=1 900um loose tube=3 Special=0	None=1 FC/PC=2 FC/APC=3 SC/PC=4 SC/APC=5 ST/PC=6 LC=7 Special=0
Input tap voltage control=13						



Revision: 03-10-15

etMEMS™ TVOA Typical Tap Performance Charts (1)

Features

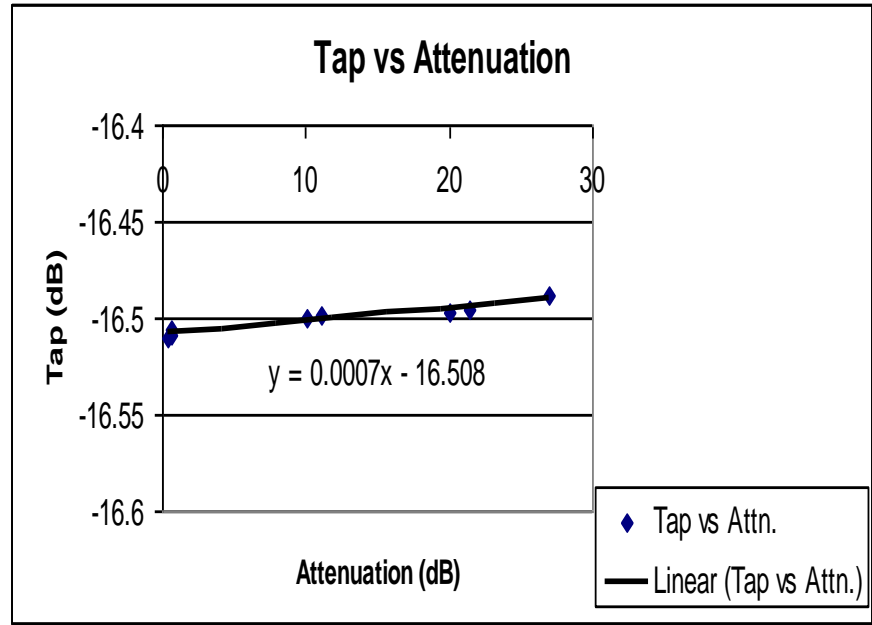
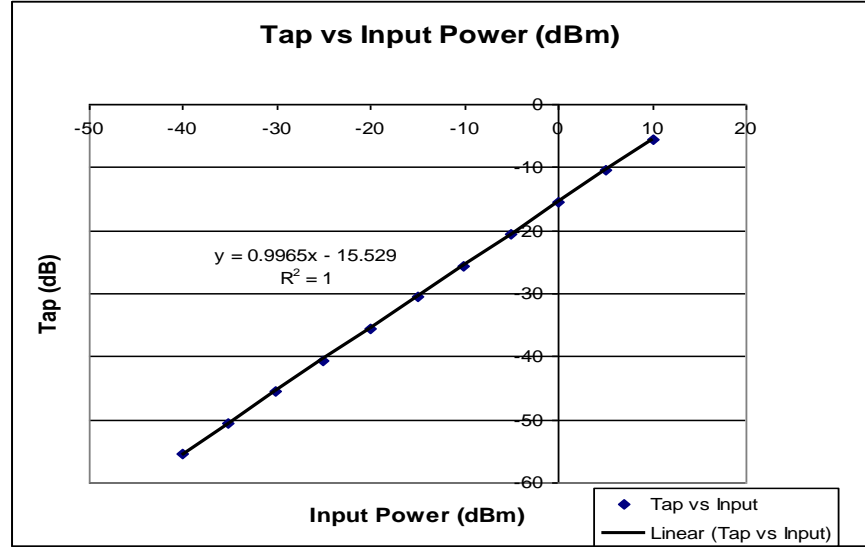
- VOA + Tap
- Compact
- Low Cost
- High Reliability
- Low IL, PDL, WDL & TDL
- Direct Low Voltage Drive

Applications

- Power Control
- Power Regulation
- Channel Balance
- Instrumentation



Revision: 03-10-15



MEMS TVOA Typical Tap Performance Charts (2)

Features

- VOA + Tap
- Compact
- Low Cost
- High Reliability
- Low IL, PDL, WDL & TDL
- Direct Low Voltage Drive

Applications

- Power Control
- Power Regulation
- Channel Balance
- Instrumentation



Revision: 03-10-15

