

Mini etMEMS VOA with Input Power Monitor

(Vibration Insensitive, Directional and Unidirectional)

(patent protection US8666218B2)



DATASHEET

BUY NOW



Features

- Integrated
- Low Loss Device
- Custom Tap Ratios Available
- Compact Design

Applications

- Channel Monitoring
- Power Monitoring in Optical Interface Modules
- Gain Monitoring for Amplifier
- DWDM System Monitoring

The mini MEMS Variable Optical Attenuator Integrated with Input Optical Power Monitor is a hybrid fiber optical device that integrates a thin-film tap of flat spectral response and a high sensitivity PIN photodiode for power monitoring applications with a MEMS VOA. The Power Monitor minimizes component assembly costs and module footprint. The thermal MEMS VOA has little temperature dependence and drift. It is intrinsically more reliable than electrostatic MEMS VOAs.

The Power Monitor has low insertion loss and low dark current with high temperature stability over a wide wavelength range from 1260nm to 1620nm band.

Specifications

Parameter	Min	Typical	Max	Unit
Wavelength	1260		1620	nm
Insertion Loss ^[1]		0.6	0.8	dB
Polarization Dependent Loss ^[2]		0.15	0.8	dB
Wavelength Dependence Loss ^{[3],[4]}			0.3	dB
Attenuation Range		25	35	dB
Attenuation Resolution		Continuous		
Polarization Mode Dispersion ^[2]	0.005	0.01	0.05	ps
Return Loss	38			dB
Response Time			5	ms
TAP ratio	1	3	5	%
Tap Response @ 1550nm	12	15	40	mA/W
Wavelength Dependence Response		0.02	0.03	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
3dB Bandwidth (cutoff frequency)		10		MHz
Capacitance			6	pF
Power Consumption		130	180	mW
Operating Temperature	-5		75	°C
Storage Temperature	-40		85	°C
Reliability	Telcordia 1209 and 1221			

Note:

- [1]. Without connector and in room temperature. If the tap ratio higher than 3%, the insertion loss will increase.
- [2]. At attenuation equal or less than 20dB
- [3]. At 0dB attenuation and in whole temperature range
- [4]. Within 30nm Bandwidth

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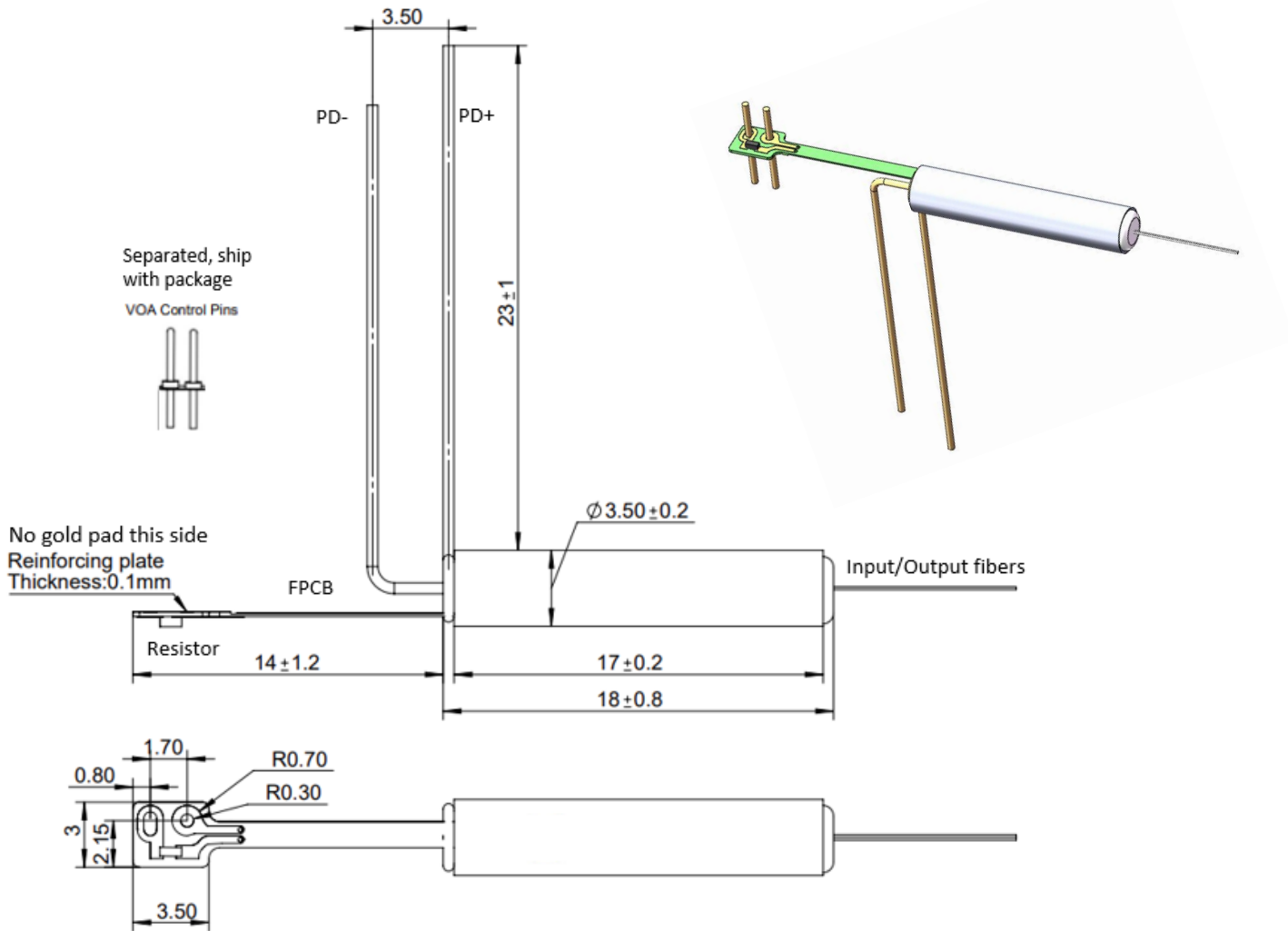


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Mechanical Footprint Dimensions (Unit:mm)



Electrical Driving Instruction

- The VOA is a resistor load without polarity and not ESD sensitive. The maximum control voltage is 5 V, higher than this value may cause device damage.
- The Tap is extremely ESD sensitivity, once damaged it may take a while to degrade. Always shorting the two pins when handling it. The black conductive foam should not be removed.

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Ordering Information

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Prefix	Tap Ratio	Wavelength	VOA Off State	Directivity	Fiber Type	Fiber Cover	Fiber Length	Connector
MOAP-	3% =03 Special =00	C+L =2 1310 =3 1550 =5 1260-1620 =B Special =0	Transparent=1 Opaque=2	N0=1 Yes=2	SMF-28=1 PM1550=2 Special=0	Bare fiber=1 900um tube=3 Special=0	0.25m=1 0.5m=2 1.0m=3 Special=0	None=1 FC/PC=2 FC/APC=3 SC/PC=4 SC/APC=5 ST/PC=6 LC/PC=7 LC/APC=8 Special=0

NOTE:

“transparent” means no attenuation without applying a controlling voltage, the “opaque” means the highest attenuation without applying a controlling voltage.

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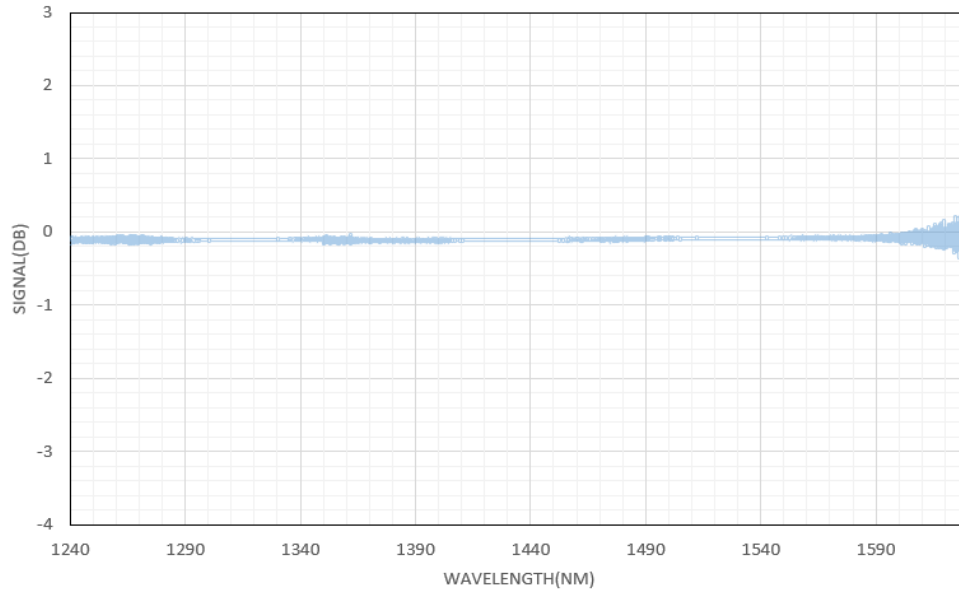
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Typical Insertion Loss vs Wavelength (1240-1630nm)

1x2 MEMS Switch



Response 0~20dB

