

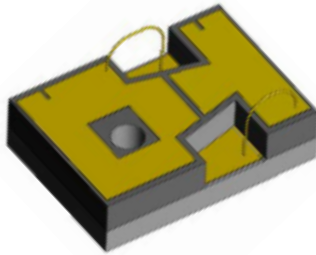
0.5mm Motion etMEMS™ Free Space Attenuator Chip



(Protected by US patents pending)

DATASHEET

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Features

- Compact
- High Reliability
- Low IL, PDL, WDL & TDL
- Intrinsic tolerance to ESD

Applications

- Power Control
- Power Regulate
- Channel Balance
- Instrumentation



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Rev 05/08/26

The **etMEMS™** series of free space variable optic attenuator (FS-VOA) is based on a proprietary patent pending micro-electro-mechanical mechanism featuring exceptionally compact size with large shutter movement, simple construction, and direct drive. The **etMEMS™** series of FS-VOA is designed to completely block a collimated light beam $\leq 500\mu\text{m}$ in diameter and be operated in air without the need for hermetic seal and is fully compliant with the Telcordia 1209 and 1221 reliability standards. The device is ideally suited to be integrated into laser and coherent detection systems.

The different movement FS-VOA chip up to $700\mu\text{m}$ is available, please contact us.

Specifications

Parameter	Min	Typical	Max	Unit
Attenuation Resolution		Continuous		
Shutter Movement		500		μm
Response Time		20	40	ms
Optical Power Handling		500		mW
Driving Voltage ^[1]		3.5	4.5	V
Device Resistance		70 ^[2]	100	Ohm
Power Consumption		210	250	mW
Resonant Frequency	200			Hz
Operating Temperature	-5		75	°C
Storage Temperature	-40		85	°C
Reliability	Telcordia 1209 and 1221			
Package Dimension	See drawing below			

Note:

- [1]. For full dynamic range.
[2]. At voltage 4V.

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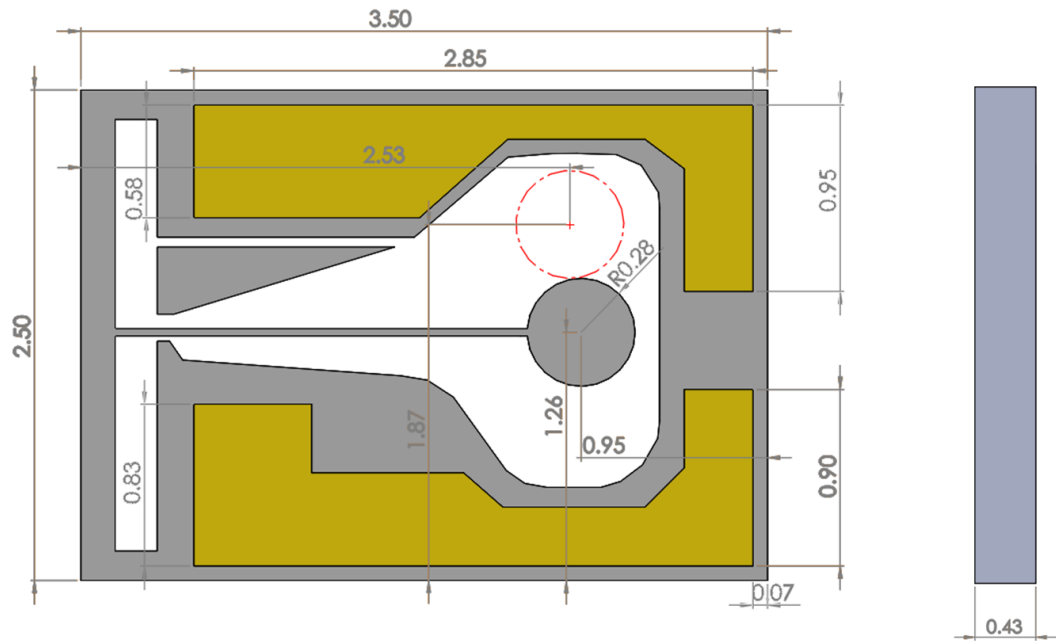
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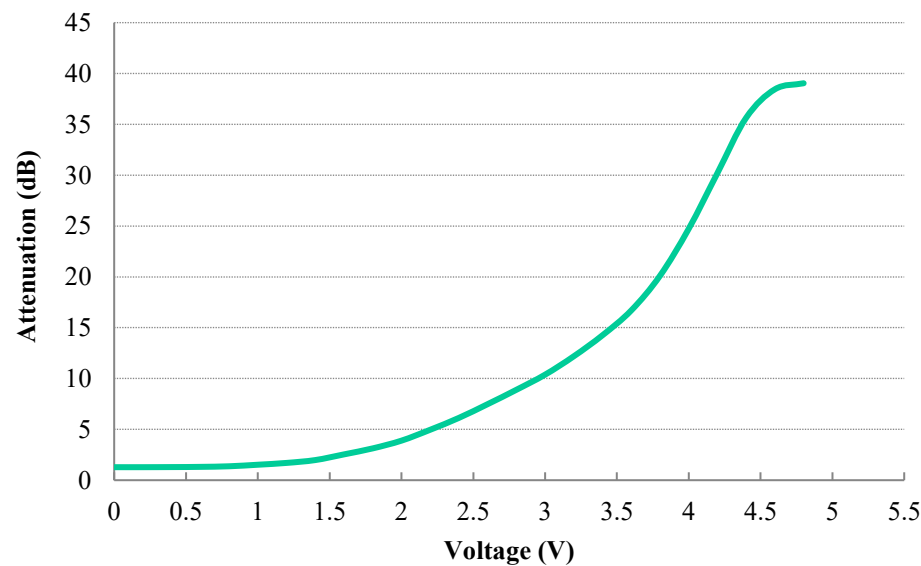
Mechanical Footprint Dimensions (mm)



NOTE:
The red dash-line represents the shutter position under ~4.5V.

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

VOA Performance



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Electronic Driving Instruction

NOTES:

- Electrode pads on front surface are for control voltage without polarity.
- Do not apply more than 5.5V.

Ordering Information (Part Number)

P/N: FSVOA-50111010C (Standard)

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Prefix	Shutter size	Wavelength	VOA Type	Shutter Surface	Chip Package	Chip Design	Electric Connection	
FSVOA-	Ø500µm ^[1] = 50	Broadband = 1	Standard = 1 Special = 0	Gold = 1	Bare = 2 Sub-mount ^[2] = 1 Special = 0	Standard = 1 Special = 0	No PIN = 0	

[1]. The different shutter size is available, please check other size FS-VOA chip data sheet.

[2]. Flying wires type; two leads are provided

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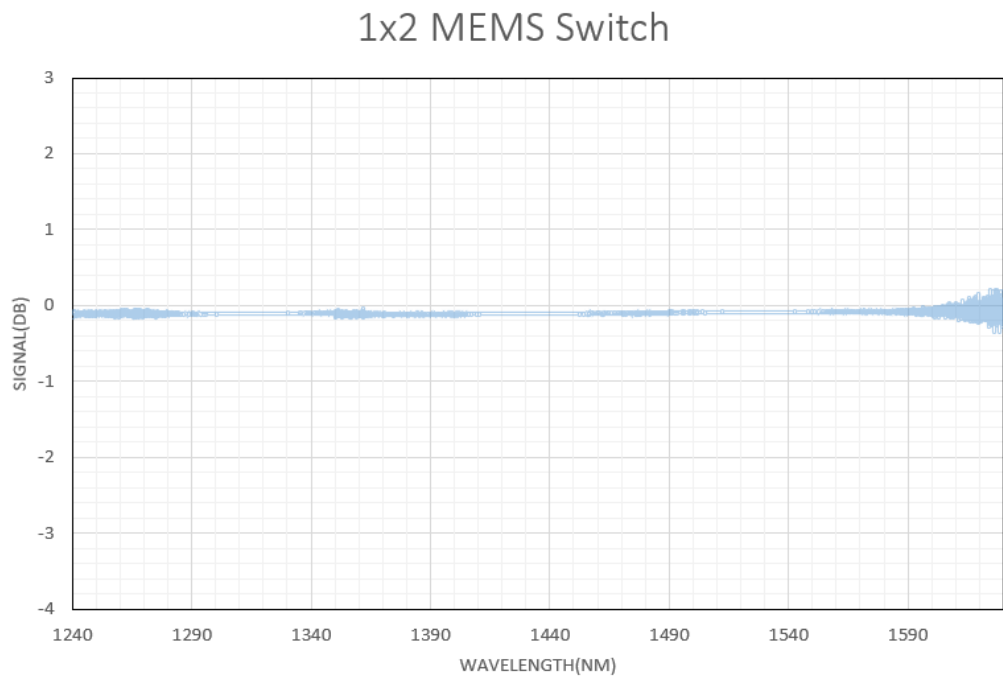
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Typical Insertion Loss vs Wavelength (1240-1630nm)



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