0.5mm Motion *et*MEMS™ Free Space Attenuator Chip

(Protected by US patents pending)

DATASHEET

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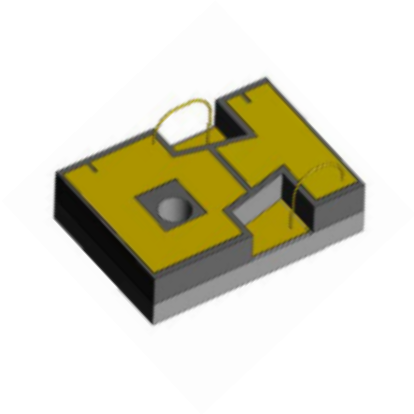

The etMEMS™ series of free space variable optic attenuator (FS-VOA) is based on a proprietary patent pending micro-electro-mechanical mechanism featuring exceptionally compact size with large shutter movement, simple construction, and direct drive. The etMEMS™ series of FS-VOA is designed to completely block a collimated light beam ≤ 500µm 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 700µm is available, please contact us.

Features

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

Applications

- Power Control
- Power Regulate
- Channel Balance
- Instrumentation

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.

Rev 02/08/25

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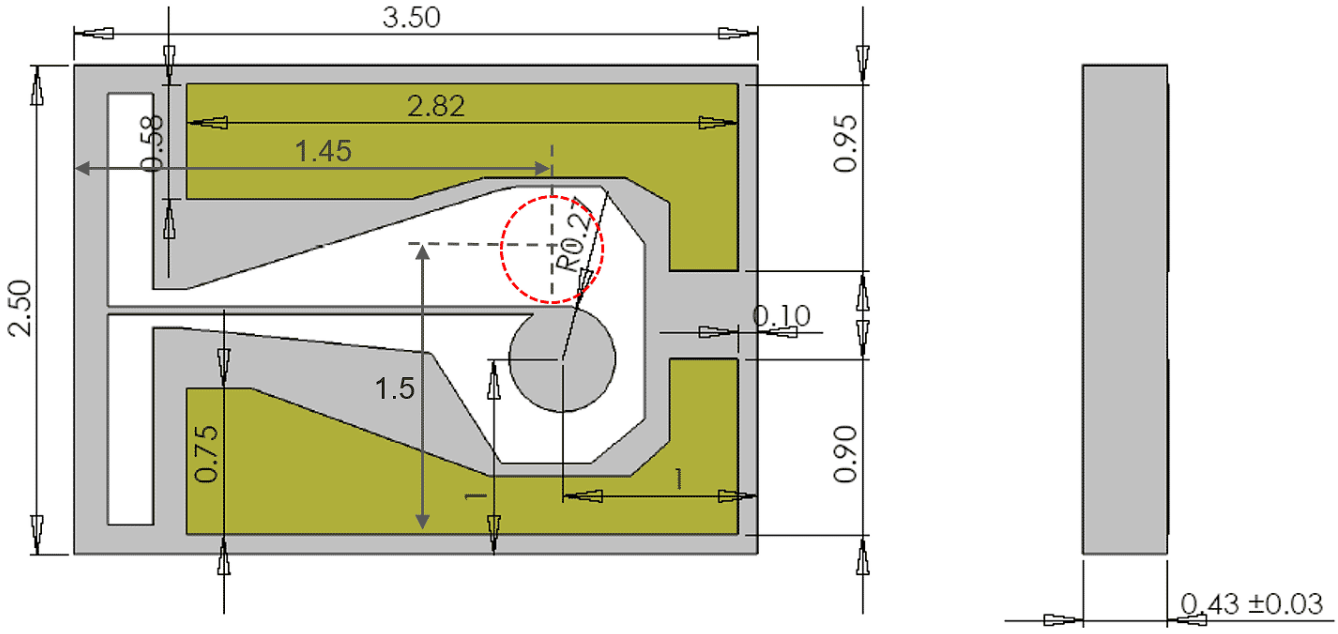
Mechanical Footprint Dimensions (mm)

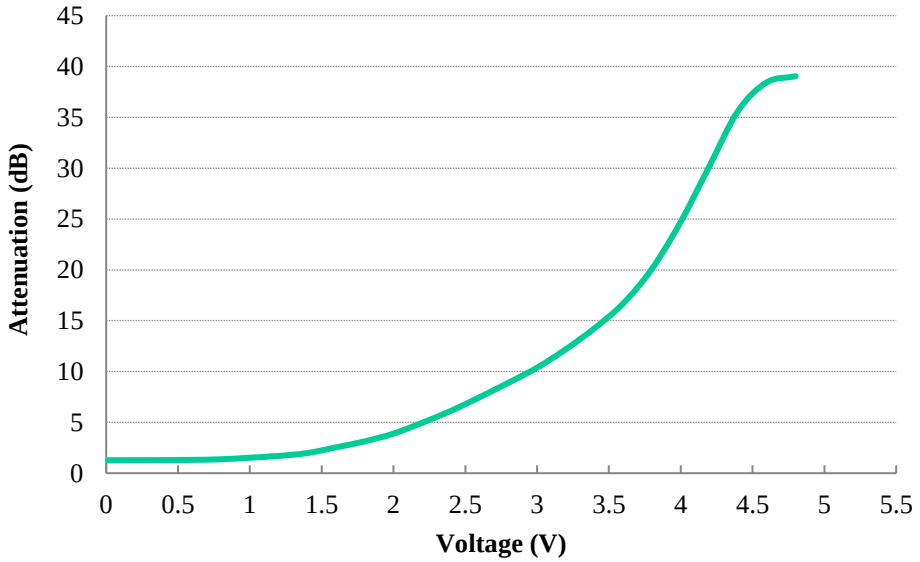


NOTE:

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 6V.

Ordering Information

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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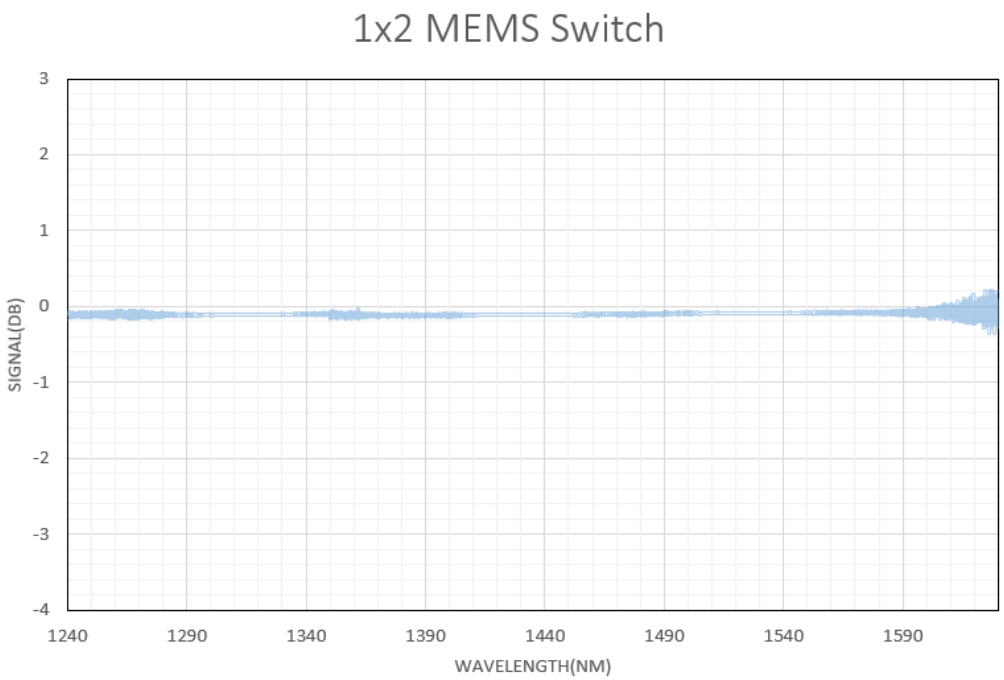
Typical Insertion Loss vs Wavelength (1240-1630nm)



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