

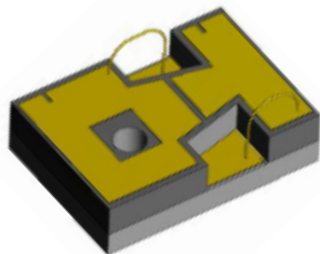
# 0.26mm Motion etMEMS™ Free Space Attenuator Chip



(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  $\leq 260\mu\text{m}$  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.

## 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		260		$\mu\text{m}$
Response Time		20	60	ms
Optical Power Handling		400		mW
Driving Voltage <sup>[1]</sup>		3.5	4	V
Device Resistance		60 <sup>[2]</sup>	95	Ohm
Power Consumption		190	210	mW
Resonant Frequency	1000			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 3.5V.

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Rev 02/08/25

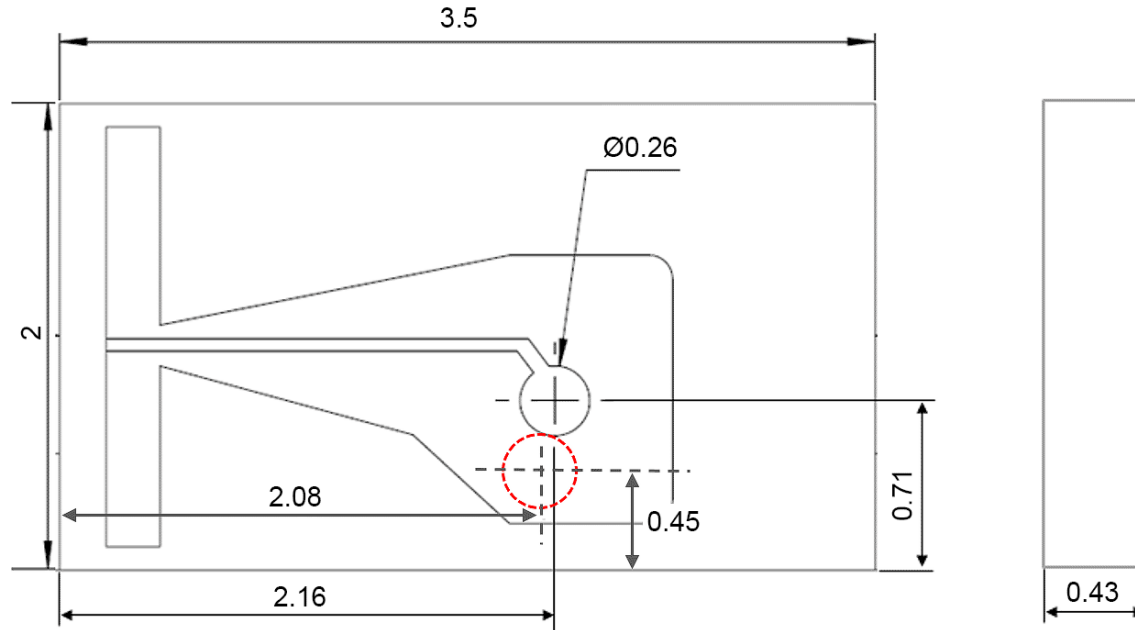
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### Mechanical Footprint Dimensions (mm)

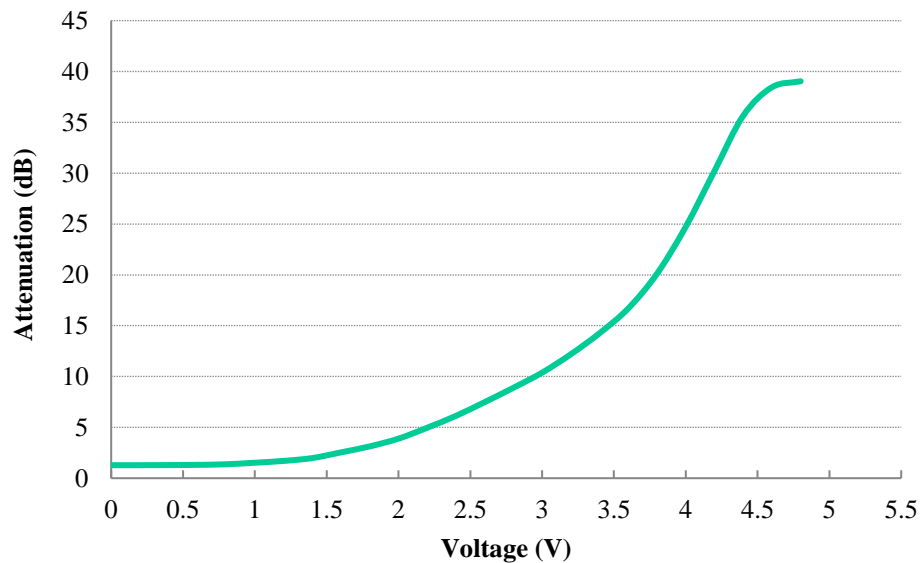


#### NOTE:

The red dash-line represents the shutter position under  $\sim 3.5$ V.

\*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 5V.

### Ordering Information

P/N: FSVOA-26111010C (New standard)

FSVOA-261110101-C (Old)

Prefix	Shutter size	Wavelength	VOA Type	Shutter Surface	Chip Package	Chip Design	Electric connection	
FSVOA-	Ø260µm <sup>[1]</sup> = 26	Broadband = 1	Standard = 1 Special = 0	Gold = 1	Bare = 2 Sub-mount <sup>[2]</sup> = 1 Special = 0	Standard = 1 Special = 0	No PIN = 0	C

[1]. Different shutter size is available, please check another size FS-VOA chip datasheet.

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

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### Typical Insertion Loss vs Wavelength (1240-1630nm)

1x2 MEMS Switch

