0.3mm Motion *et*MEMS™ Free Space Attenuator Chip

(Protected by US patents pending)

DATASHEET

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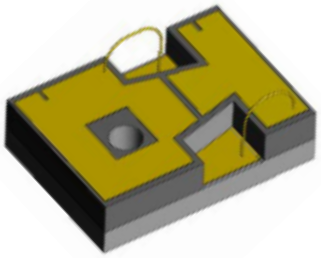

The etMEMS™ series of free space variable optic attenuator (FS-VOA) is based on a proprietary patent pending micro-electro-mechanical mechanism featuring exceptionally compact size with large shutter movement, simple construction, and direct drive. The etMEMS™ series of FS-VOA is designed to completely block a collimated light beam ≤ 300μm 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 shutter surface is coated with reflective Gold.

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

Specifications

Parameter	Min	Typical	Max	Unit
Attenuation Resolution		Continuous		
Shutter Movement		300		μm
Response Time		20	60	ms
Optical Power Handling		400		mW
Driving Voltage[1]		3.3	4	V
Device Resistance		60 [2]	95	Ohm
Power Consumption		190	210	mW
Resonant Frequency	1500			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.

Applications

- Power Control
- Power Regulate
- Channel Balance
- Instrumentation

RoHS COMPLIANT

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Rev 10/15/26

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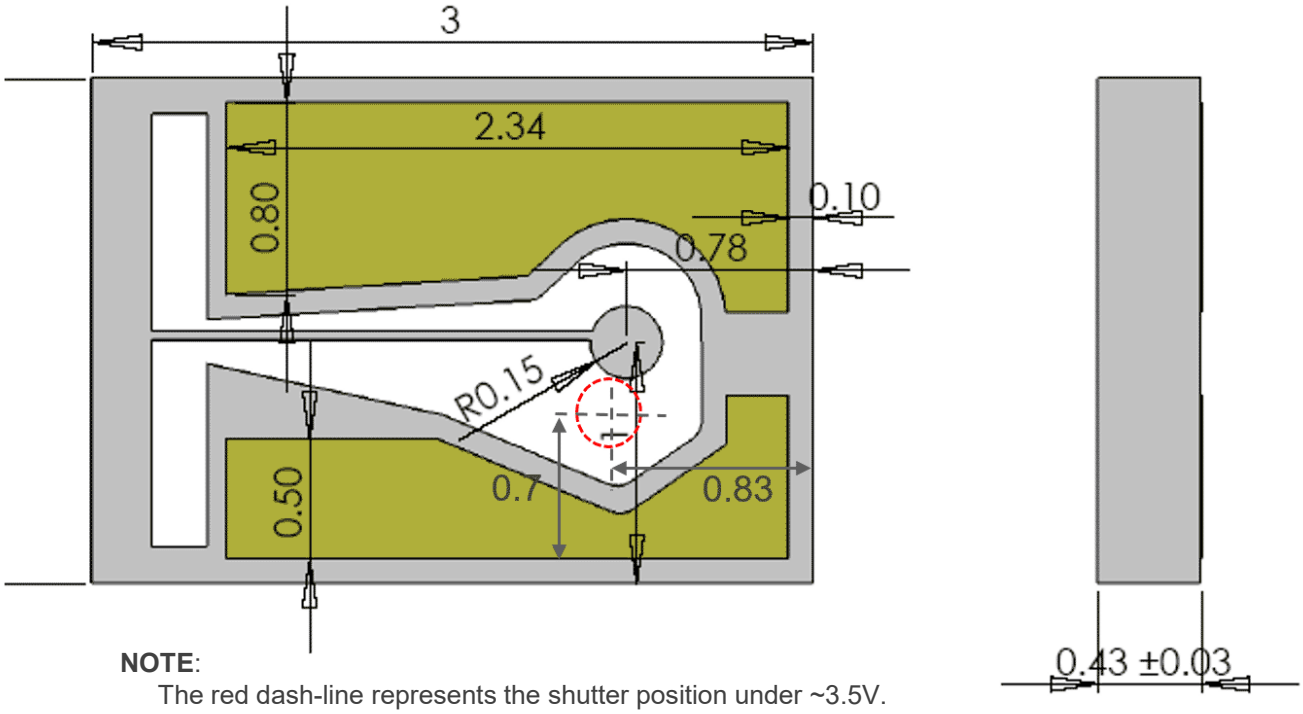
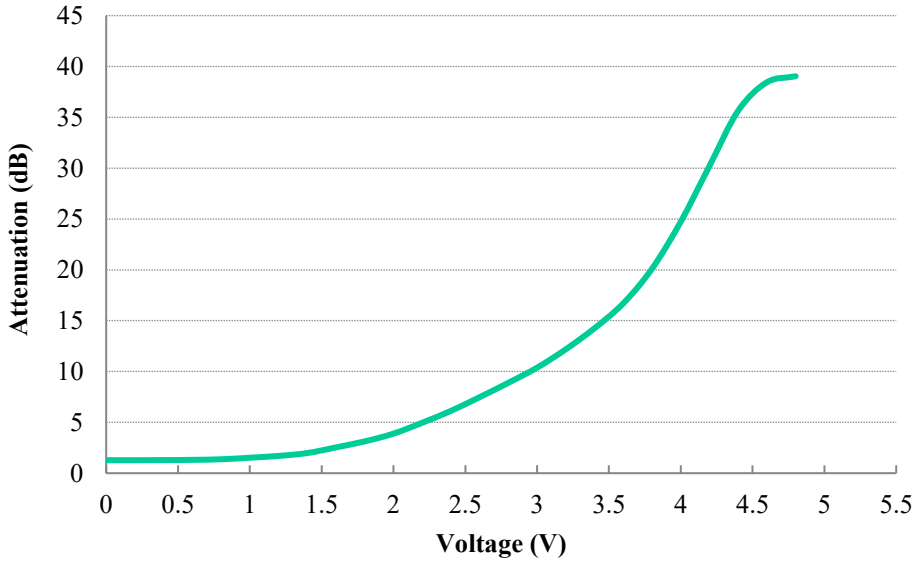
Mechanical Footprint Dimensions (mm)



NOTE:
The red dash-line represents the shutter position under ~3.5V.

*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 5V.

Ordering Information (Part Number)

P/N: FSVOA-30111010C (Standard)

	30	1	☐	1	0	☐	0	C
Prefix	**Shutter size**	**Wavelength**	**VOA Type**	**Shutter Surface**	**Package Configuration**	**Chip Design**	**Electric Connection**	
FSVOA-	Ø300μm [1] = 30	Broadband = 1	Standard = 1 Special = 0	Gold coated = 1	Standard = 1 No hold-chip = 0	Standard = 1 Special = 0	No PIN = 0	Bare chip = C

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

[2]. The different orientation or customization might be available, please contact us.

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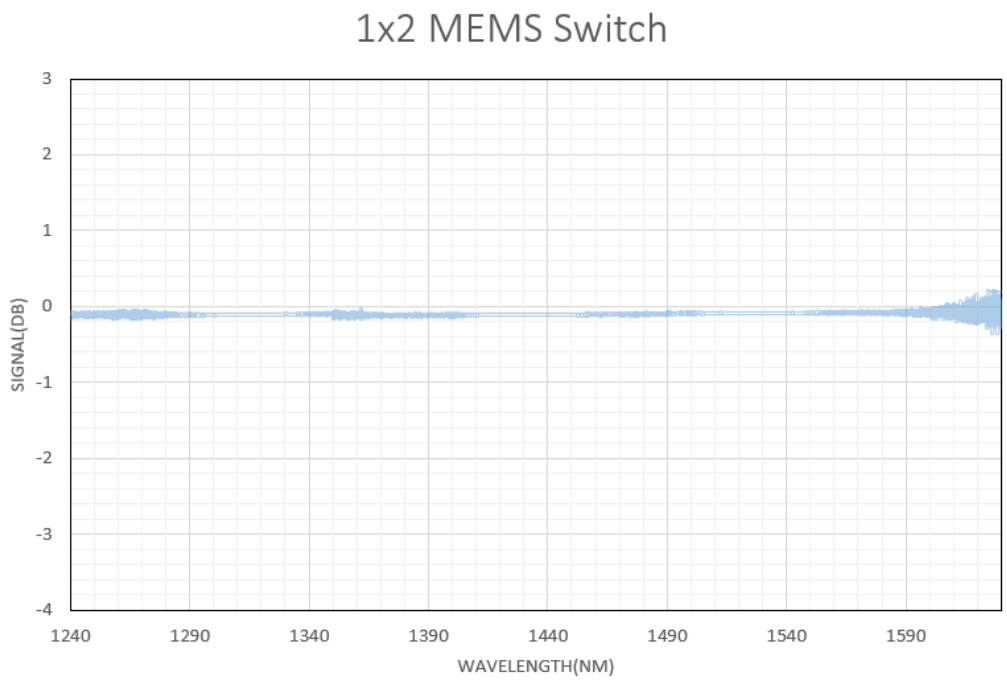
Typical Insertion Loss vs Wavelength (1240-1630nm)



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