



# 0.7mm Movement Free Space etMEMS™ Attenuator/Shutter Chip

(Protected by US patents pending)

## Product Description

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 easy direct drive. The **etMEMS™** series of FS-VOA is designed to completely block a collimated light beam  $\leq 700 \mu\text{m}$  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 systems.

The different movement FS-VOA chip up to 700um is available, please contact us.

## Performance Specifications

FS Series VOA/Shutter	Min	Typical	Max	Unit
Attenuation Resolution	Continuous			
Shutter Movement	700			$\mu\text{m}$
Response Time	20		60	ms
Optical Power Handling	500			mW
Driving Voltage <sup>[1]</sup>	4		5	V
Device Resistance	100 <sup>[2]</sup>			Ohm
Power Consumption				210 mW
Resonant Frequency	100			Hz
Operating Temperature	-5		75	°C
Storage Temperature	-40		85	°C
Reliability	Telcordia 1209 and 1221			
Package Dimension	See drawing below			mm

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

### Features

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

### Applications

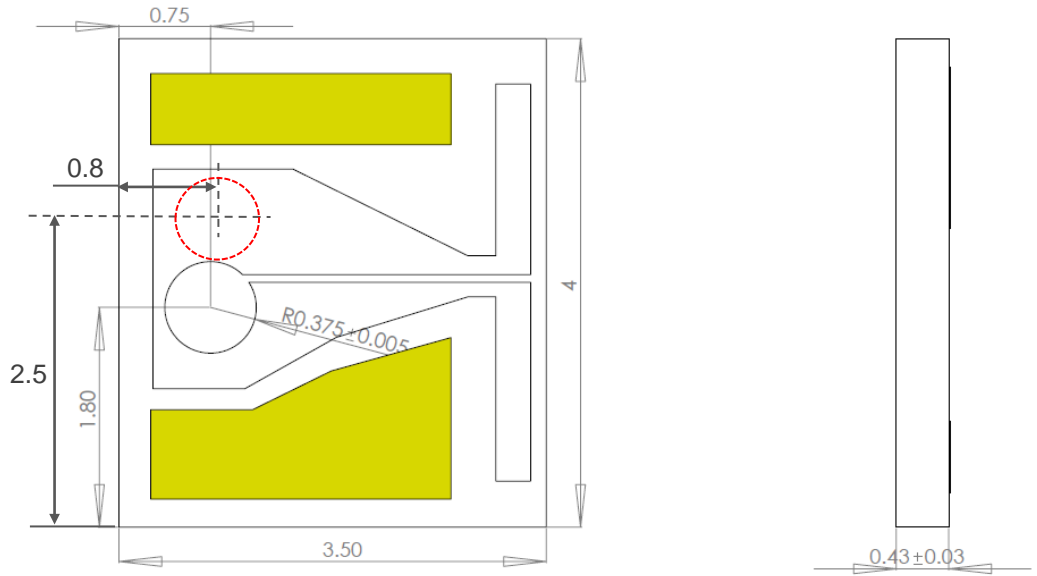
- Power Control
- Power Regulate
- Channel Balance
- Instrumentation



Revised on 5/2/21  
 (Click here for latest revision)

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## Mechanical Footprint Dimensions (mm)

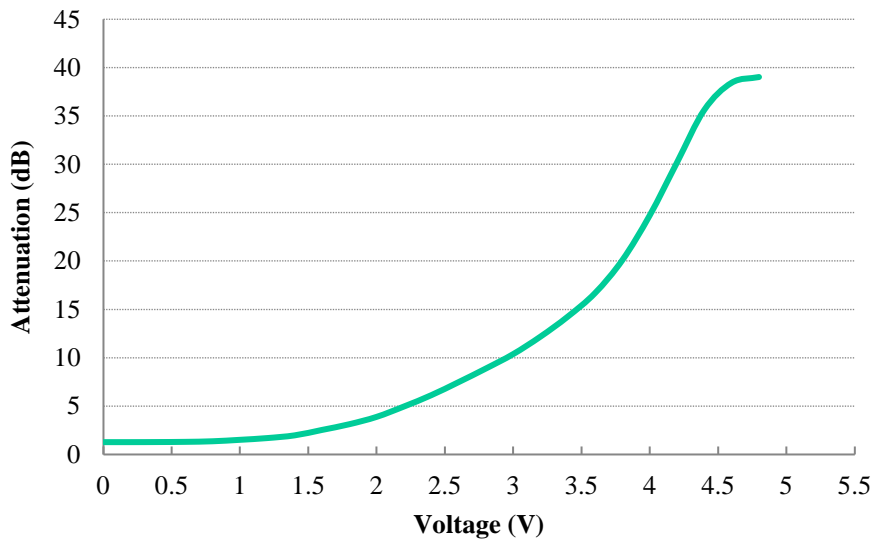


### NOTES

- The red dash-line represents the shutter's position under ~4V.

\*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.

## Order Instruction

### P/N: FSVOA-70111010C (Standard)

FSVOA -	7 0	1	<input type="checkbox"/>	1	0	<input type="checkbox"/>	0	C
	Shutter size	Wavelength	VOA type	Shutter surface	Package Configuration	Chip design	Electric connection	
	φ700um = 70 <sup>[1]</sup>	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.