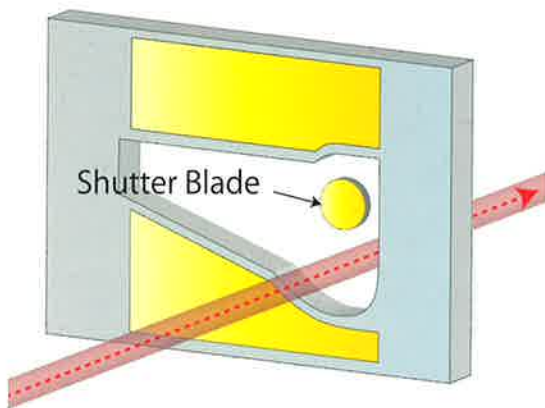
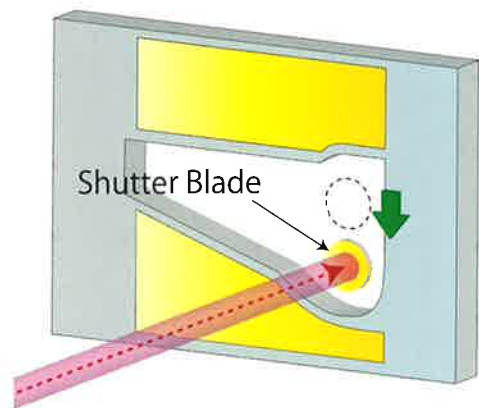




## MEMS VOA Shutter 300 (SHAS-01A)



Fully Open (No voltage)



Fully Closed (about 3.7V)

### ☆Key feature

- MEMS device by SPP MEMS technology (since 1995)
- Shutter (knife-edge) type VOA enables space-saving installation
- Shock & vibration resistant

### ☆Application

- Transceivers, modulators, etc. for Optical Communication Market

### ☆Key Specification (Please see the reverse side of this brochure)

- Chip Size : 2.06 x 2.96 x 0.3mm
- Shutter blade Dia. : 0.32mm
- Driving Voltage : 3.7V (Typical)
- Resonant Frequency of the shutter : higher than 2,000Hz



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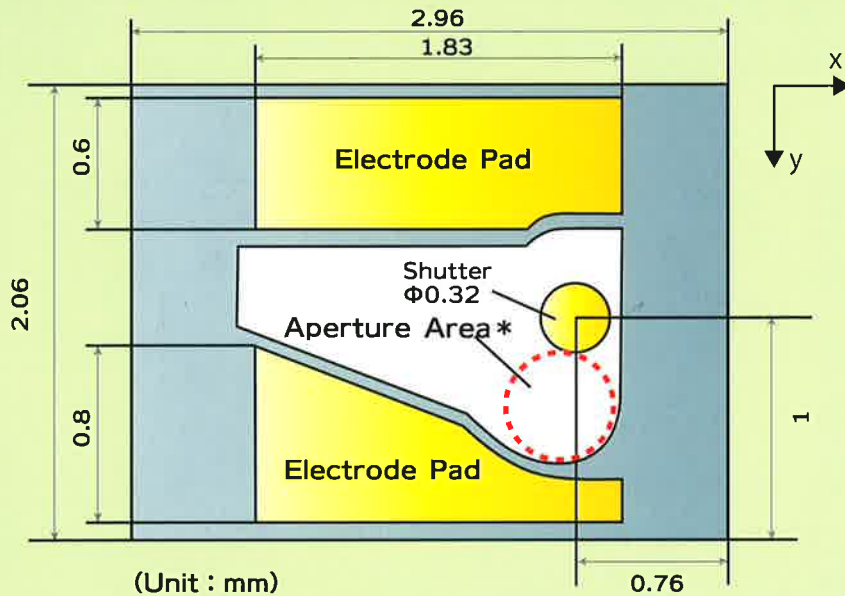
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Sumitomo Precision Products



We define the "Aperture Area" as  $\phi 0.49\text{mm}$  round area within a red colored circle in the left side figure. The red colored circle inscribes on the lower area of the shutter blade and upper edge of the chip as shown on the left figure.

**Size/ Dimension :**

	Dimension
Chip	2.06mm×2.96mm、0.3mm(t)
Shutter Blade	Min $\phi 310\mu\text{m}$ 、Typ $\phi 320\mu\text{m}$
Aperture Area	Min $\phi 460\mu\text{m}$ 、Typ $\phi 490\mu\text{m}$

**Basic Specification :**

	Min	Typ	Max	Unit	Note
Operating Temp.	-40	—	+85	°C	
Attenuation Resolution	Continuous			—	
Resonant Frequency	2000	—	—	Hz	
Driving Voltage $V_{voa}$	—	3.7	4.0	V	See below (※)
Power Consumption	—	240	290	mW	See below (※)

※On condition when the shutter blade moves  $350\mu\text{m}$  down to "y" direction (see figure shown above).  
 • Gold film is deposited on shutter blade and electrode pad

**Reliability Test Result:**

Test	Additional Information	SS(*1)
Vibration	20G、20 ~ 2000Hz、4min/cy、4cy/axis、non-powered	11
Mechanical Shock	1500G、0.5ms、5times/direction	11
High-Temperature Storage	85°C、2000hr	11
Low-Temperature Storage	-40°C、2000hr	11
Temp. Cycling	-40 ~ 85°C、1000cycles、dwell time 30min、Ramping 10°C/min	11
High-Temperature Operations	85°C(N2atmosphere)、2000hr	11

As a result of tests shown above, we have confirmed all test pieces satisfied Telcordia GR-468-CORE requirement. This test is carried out for reference purpose. Formal testing within customer's product is recommended.  
 (\*1) SS=Sample Size



Quality management system of MEMS Sensors & Systems department of Sumitomo Precision Products Co., Ltd. is ISO 9001 certified.



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