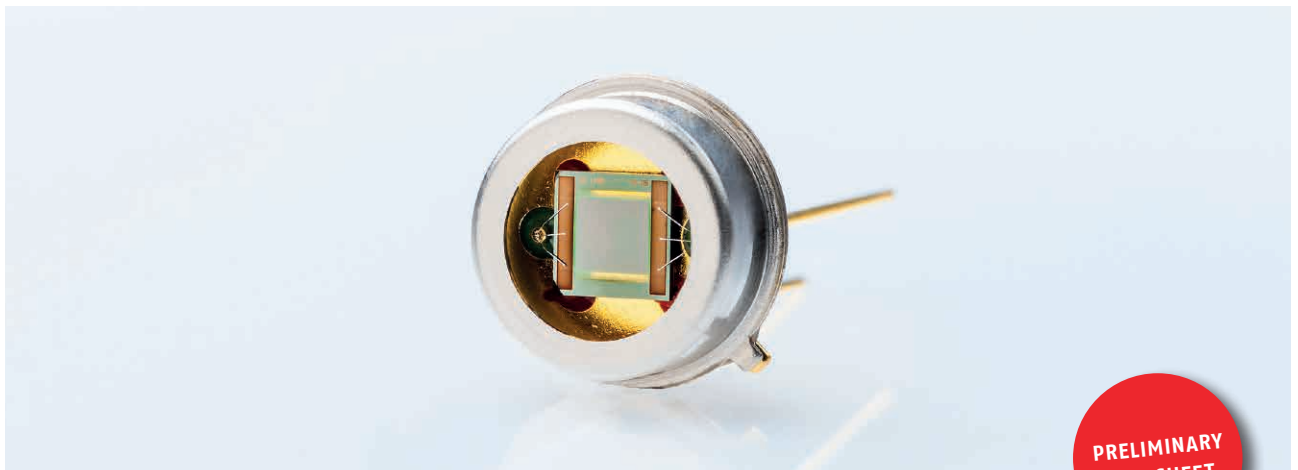


# JSIR 340-4

Economy MEMS C-MOSI® based infrared emitter for cost effective high volume NDIR gas sensing applications like home & building automation.



PRELIMINARY  
DATASHEET

The combination of MEMS standard technologies with CMOS compatible hot-plate resistance layer enables the production at high qualified but ordinary MEMS Fab production lines.

This is the opener for high volume and cost sensitive applications. The emitter's MEMS chips with focus of cost efficiency and low thermal time constant are developed by our supplier CMOS IR. Despite the focus on mass production and mass production applications, the emitter impresses with its high radiant power at hot plate temperatures of up to 800 °C and short time constants.

JSIR 340 sources are available in T0 packaging versions with cap or SMD package. The focus on SMD packages enables an effective automatic assembly process for our customers.

## FEATURES

- Cost efficient components standard MEMS technologies and CMOS compatible
- Effective automatic assembly process with SMD packages
- Hot-plate temperatures up to 800 °C appropriate radiation output
- High modulation depth due to low thermal mass

## APPLICATIONS

- NDIR gas detection
- Photoacoustic gas spectroscopy
- DIR & ATR spectroscopy

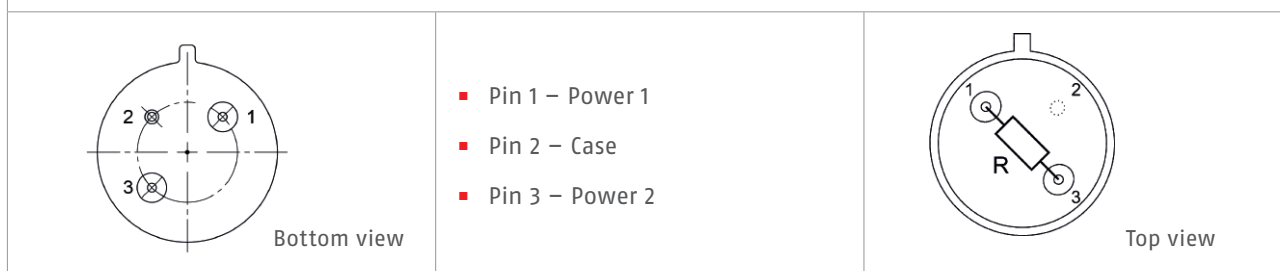
## TARGET GASES

- CO<sub>2</sub>, CH<sub>4</sub>, C<sub>3</sub>H<sub>8</sub>, C<sub>2</sub>H<sub>5</sub>OH
- Other infrared active gases

## Technical data

| Technical parameter                    | Open                 | Unit            |
|--|----------------------|-----------------|
| Spectral output range                  | 2 – 15               | μm              |
| Active area                            | 2.2 x 2.2            | mm <sup>2</sup> |
| Hot resistant <sup>1</sup>             | 19 ± 5               | Ω               |
| Temperature coefficient <sup>2</sup>   | typ. 1250            | ppm/K           |
| Time constant <sub>0-63 %</sub>        | typ. 15              | ms              |
| Nominal power consumption <sup>3</sup> | 650                  | mW              |
| Operation voltage <sup>4</sup>         | typ. 3.5             | V               |
| Operation current <sup>4</sup>         | typ. 185             | mA              |
| Recomended driving mode                | Power mode           |                 |
| Active area temperature <sup>1,5</sup> | 650 ± 30             | °C              |
| Window/filter                          | w/o                  |                 |
| Housing                                | T039 (modified)      |                 |
| Estimated lifetime <sup>6</sup>        | > 5000 h at 740 °C   |                 |
|  | > 100000 h at 650 °C |                 |
| <b>Absolute max. ratings</b>           |                      |                 |
| Input power <sup>3,5</sup>             | 1000                 | mW              |
| Housing temperature                    | 200                  | °C              |
| Active area temperature                | 800                  | °C              |

### Pin out



<sup>1</sup> at nominal power

<sup>2</sup> 0 °C – 700 °C

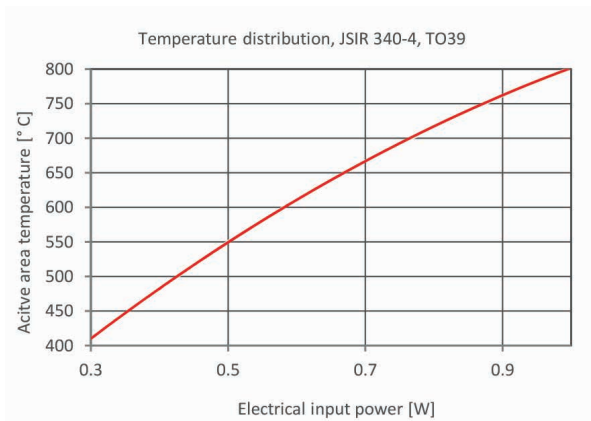
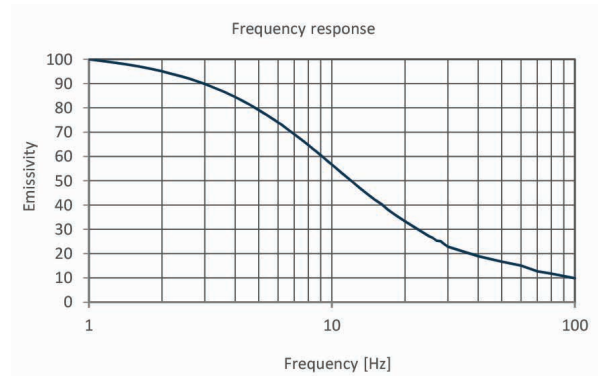
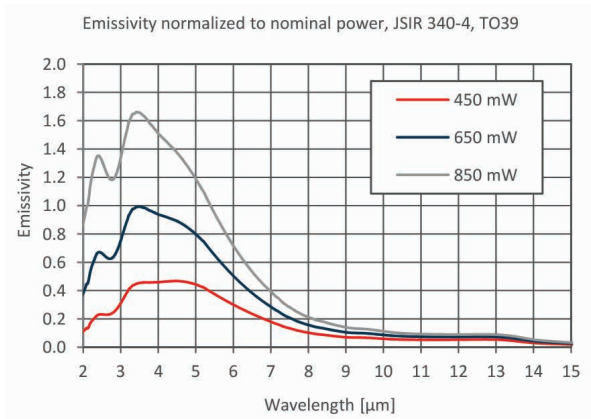
<sup>3</sup> at power on-state

<sup>4</sup> with 19 Ω

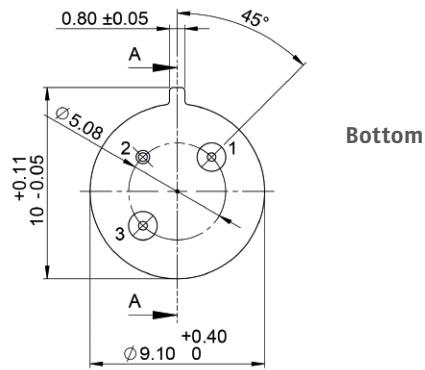
<sup>5</sup> at T<sub>amb</sub> = 25 °C

<sup>6</sup> at 1 Hz, 50 % duty cycle, MTF 63 % (membrane fracture, preliminary results)

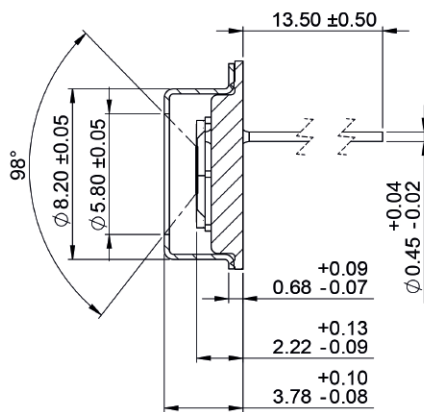
## Typical operating characteristics of IR sources › JSIR 340-4



## Mechanical drawings



### AA - JSIR 340 cap open



## Product overview

| Article                 |          | Type          | Filling gas | Temp. min | Temp. max | Aperture | Filter | Active area               |
|-------------------------|----------|---------------|-------------|-----------|-----------|----------|--------|---------------------------|
| JSIR340-4-AL-C-D5.8-0-0 | <b>S</b> | T039 with cap |             | -20 °C    | 85 °C     | 5.8 mm   | w/o    | 2.2 x 2.2 mm <sup>2</sup> |

**S** in stock

Micro-Hybrid's offer includes IR emitter of our subsidiaries **NOVA IR** and **CMOSIR**.  
All IR emitters are supplied in a T0 or SMD housing. We ship from stock and on demand.

### Micro-Hybrid-Shop

Micro-Hybrid products available at [www.microhybrid.com/shop](http://www.microhybrid.com/shop). Filter products simply by selecting the desired properties and request your quotation.

**NOVA IR** and **CMOSIR** are companies of Micro-Hybrid Electronic GmbH.  
For more information go to [www.microhybrid.com](http://www.microhybrid.com).