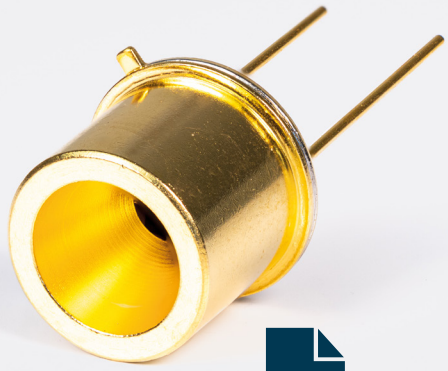
MICRO-HYBRID

JSIR 350-4

By combining standard silicon material technology with NAC coatings, Micro-Hybrid offers MEMS products with exceptional performance.



PRELIMINARY

Applications

- NDIR gas analysis
- DIR spectrocopy
- ATR spectroscopy
- PAS spectroscopy

Target gases

- CO_2, CO, N_2O, NH, SO_2, SF_6 and ripening gases such as C_2H_4 (ethylene) and C_2H_2 (acetylene)

Features

- Broad emissivity 2 - 15 µm
- High membrane temperature up to 850 °C
- High radiation output
- High modulation frequency
- Long lifetime (reliability due to high stability of the membrane)
- HermeSEAL® technology available - see special datasheet

Additional product information

The powerful IR emitters made by our MEMS fab NOVA IR consist of nanoamorphic carbon (NAC). They reach membrane temperatures of up to 850 °C for a high and long-term stable radiation performance. JSIR 350-4 sources are available in different packaging options with cap and reflector. The spectral behavior can be individually adapted by various windows. Technical parameters such as time constant and power consumption can be adjusted with different filling gases.

Only at Micro-Hybrid: HermeSEAL® technology - a unique process that creates hermetically sealed emitters for use in harsh environments.

PRODUCT DATA SHEET › IR sources › JSIR 350-4 | © Micro-Hybrid-Electronic GmbH | 2022-04 | All rights reserved.

Online shop for IR components and sensors
Filter products simply by selecting the desired properties and request your quotation.

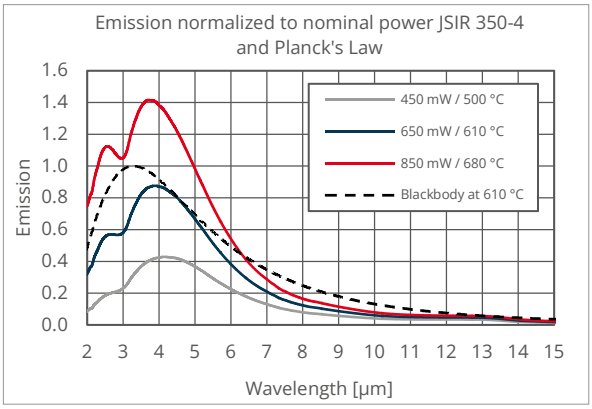
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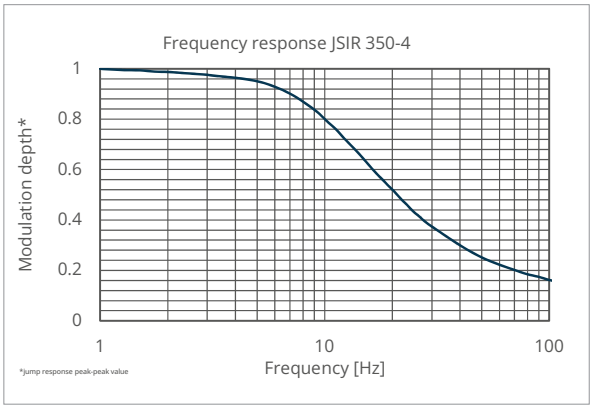
Technical data

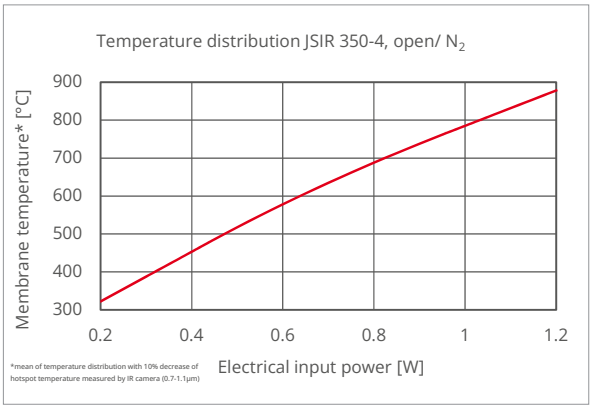
Technical parameter	Open / window N_2	Unit
Spectral output range	2 ... 15	µm
Active area	2.2 x 2.2	mm^2
Hot resistant [1]	40 ± 20	Ω
Temperature coefficient [2]	typ. 500	ppm/K
Time constant $_{0\text{-}63\ \%}$	typ. 12.5	ms
Nominal power consumption [3]	650	mW
Operation voltage [4]	typ. 4.9	V
Operation current [4]	typ. 132	mA
Recommended driving mode	Power mode	
Active area temperature [1,5,6]	610 ± 30	°C
Window	Availalabe: Sapphire, BaF_2, CaF_2, Si ARC, other on request	
Housing	TO39	
Estimated lifetime [7,8]	> 5000 h at 740 °C	
	> 100000 h at 610 °C	
Absolute max. ratings		
Input power [3,5]	1200	mW
Housing temperature [8]	120	°C
Active area temperature	850	°C

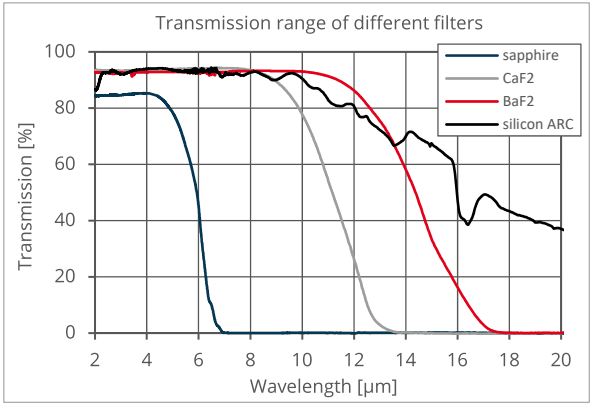
[1] At nominal power
[2] 25 °C - 800 °C
[3] At power on-state
[4] With 40 Ω hot restistant
[5] At T_{amb} = 25 °C
[6] Mean of temperature distribution with 10% decrease of hotspot temperature measured by IR camera (0.7-1.1µm)
[7] Continuous mode, MTTF 63 % (membrane fracture, calculated values based on Arrhenius)
[8] Including ambient temperature

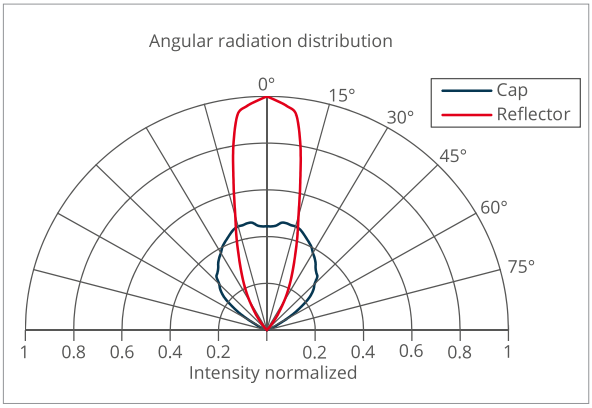
Typical operating characteristics

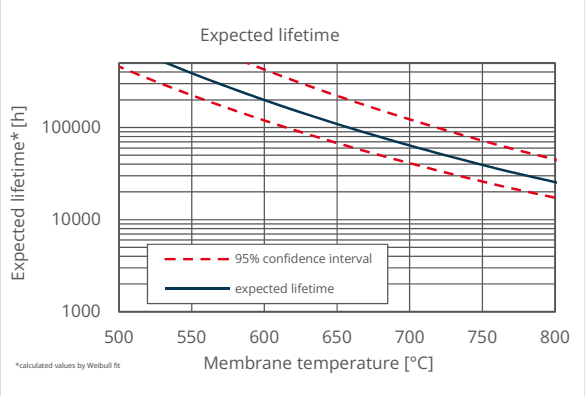






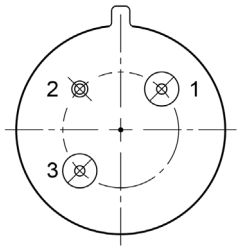






Electrical schemata

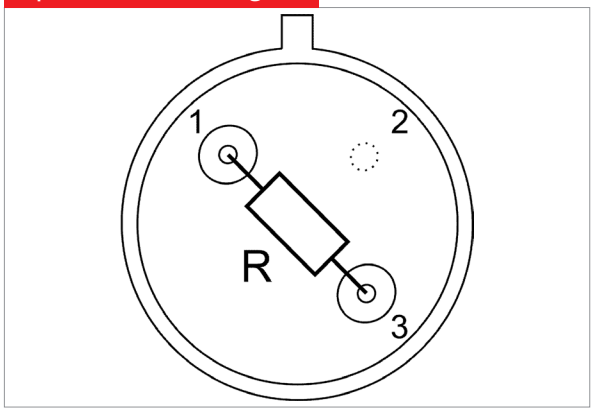
Pin out (bottom view)



- Pin 1 – Power 1
- Pin 2 – Case
- Pin 3 – Power 2

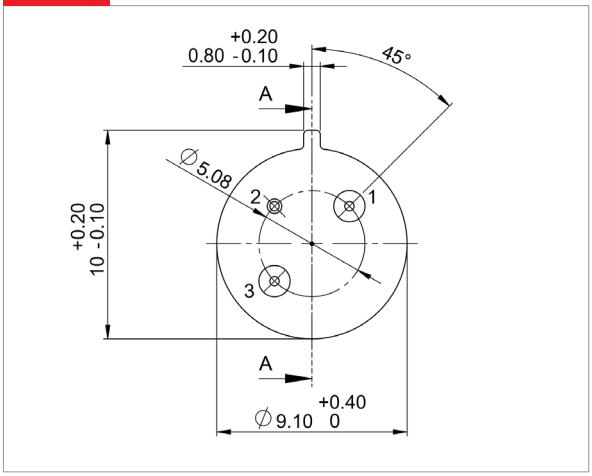
Circuits

Equivalent circuit diagram



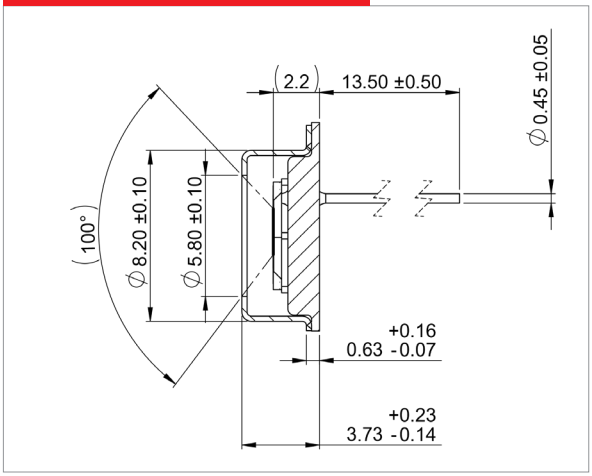
Mechanical drawings

Bottom

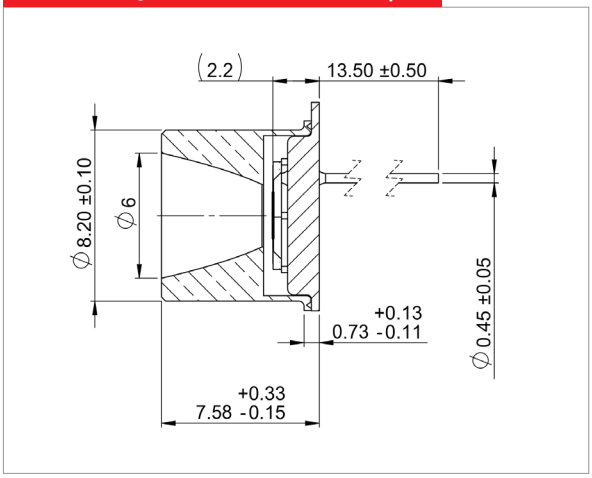


→ All geometrical dimensions in mm

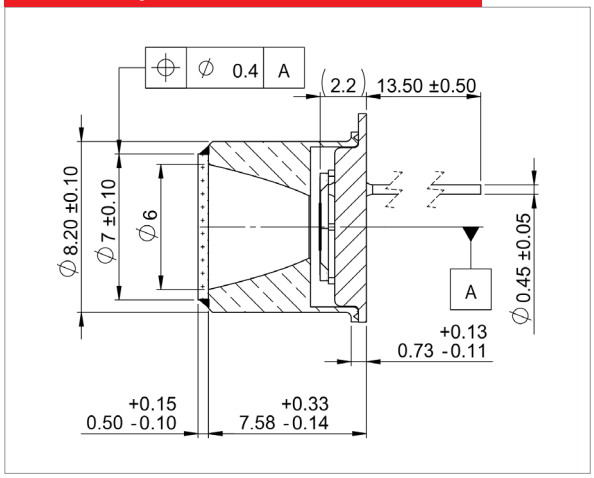
Sectional – JSIR 350-4 cap open



Sectional – JSIR 350-4 refelector open



Sectional – JSIR 350-4 reflector with filter



Product overview

Article	Type	Filling gas	Temp. min	Temp. max	Aperture	Window
JSIR350-4-AL-C-D5.8-0-0	TO39 with cap	None	-20 °C	180 °C	5.8 mm	Open
JSIR350-4-AL-R-D6.0-0-0	TO39 with reflector	None	-20 °C	180 °C	6.0 mm	Open
JSIR350-4-AL-R-D6.0-N2-A1	TO39 with reflector	N_2	-20 °C	85 °C	6.0 mm	Sapphire
JSIR350-4-AL-R-D6.0-N2-A2	TO39 with reflector	N_2	-20 °C	85 °C	6.0 mm	CaF_2
JSIR350-4-AL-R-D6.0-N2-A4	TO39 with reflector	N_2	-20 °C	85 °C	6.0 mm	BaF_2
JSIR350-4-AL-R-D6.0-N2-A7	TO39 with reflector	N_2	-20 °C	85 °C	6.0 mm	Si ARC

Disclaimer

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