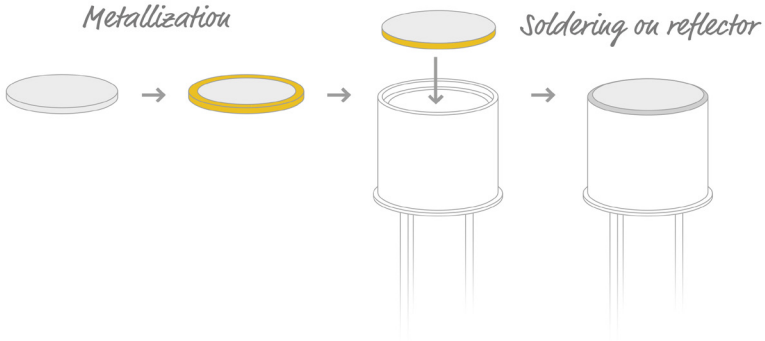
JSIR 350-4 HermeSEAL® technology

The hermetic cap allows new applications in harsh environments – such as high temperature, high partial gas pressure and high humidity.

Features

- Increased lifetime by reduction of oxidation processes
- Backfilling with different gases possible on request
- High safety level for explosion proof applications
- Ideal for battery or stand-alone applications with low power supplies*
- Long-term stable



Additional product information

In cooperation with JENOPTIK Optical Systems GmbH our R&D engineers developed a method to hermetically seal IR sources.
By soldering a metalized filter on the reflector or cap Micro-Hybrid´s infrared sources perform high efficient* and long term stable. This new technology effects IR components to be impenetrable to gases. The components do not show any permeation of water vapor or (environmental) gases compared to glued elements.

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. The innovative filter and window elements can be customized in size and optical coating according to customer specifications. This innovation represents a huge potential of improvement in the field of NDIR gas analysis.

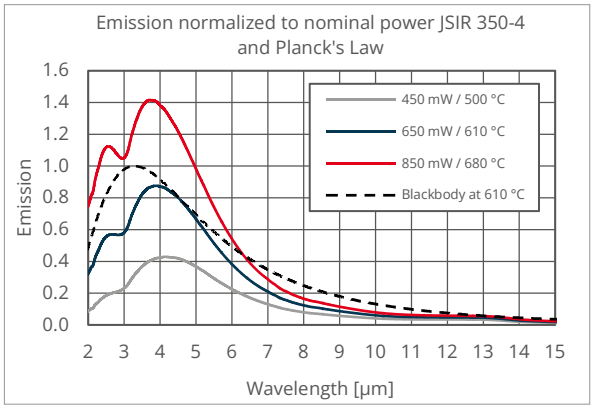
*by using thermal insulating backfill gases or variation of modulation frequency

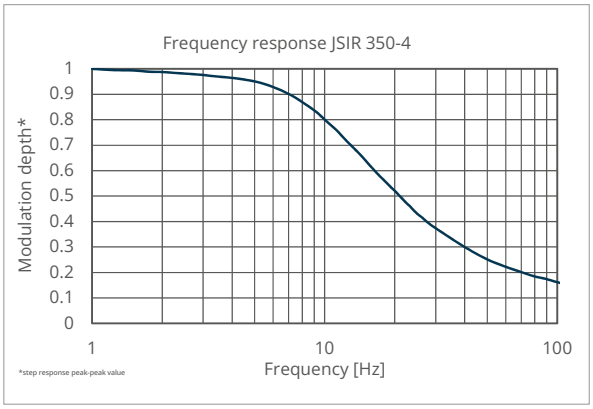
Technical data

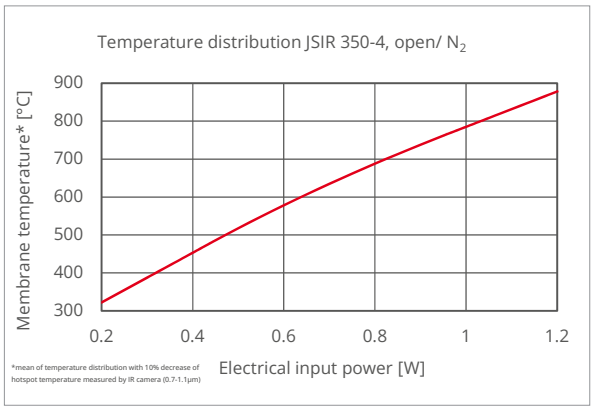
Technical parameter	Window N_2	Unit
Spectral output range	2 ... 15	µm
Active area	2.2 x 2.2	mm^2
Hot resistant [1]	40 ± 20	Ω
Temperature coefficient [2]	typ. 500	ppm/K
Time constant $_{0\text{-}63\ \%}$	typ. 12.5	ms
Nominal power consumption [3]	650	mW
Operation voltage[4]	4.9	V
Operation current [4]	132	mA
Recommended driving mode	Power mode	
Active area temperature [1,5,6]	610 ± 30	°C
Window	Si ARC, Sapphire	
Housing	TO39	
Estimated lifetime [7,8]	> 5 000 h at 740 °C	
	> 100 000 h at 610 °C	
Absolute max. ratings		
Input power [3,5]	1 200	mW
Housing temperature [8]	125 with Si ARC window 185 with Sapphire window	°C
Active area temperature	850	°C

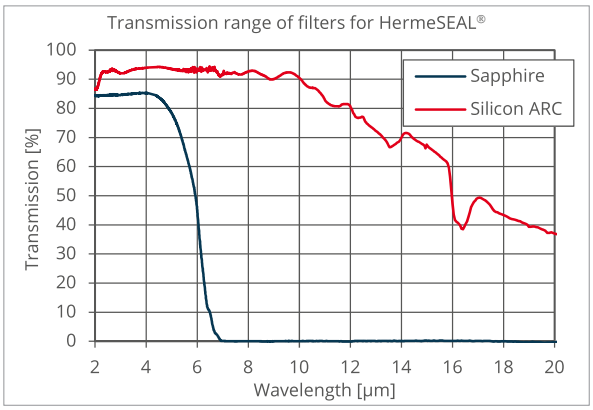
[1] At nominal power
[2] 25 °C - 800 °C
[3] At power on-state
[4] With 40 Ω hot restistant
[5] At T_{amb} = 25 °C
[6] Mean of temperature distribution with 10 % decrease of hotspot temperature measured by IR camera (0.7-1.1µm)
[7] Continuous mode, MTTF 63 % (membrane fracture, calculated values based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

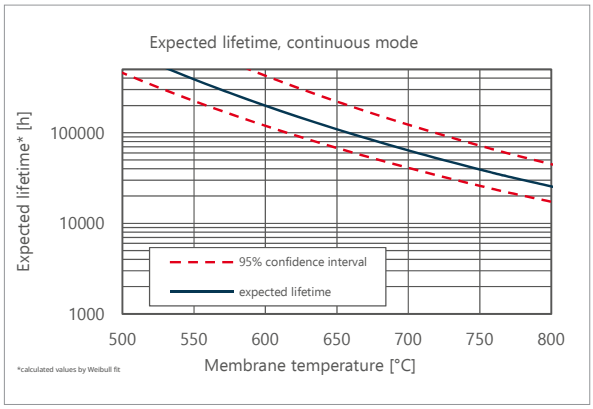
Typical operating characteristics





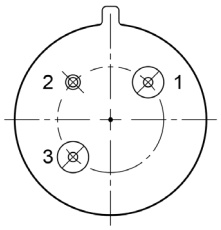






Electrical schemata

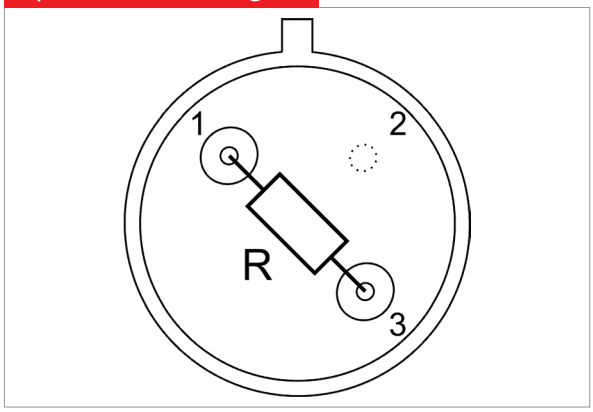
Pin out (bottom view)



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

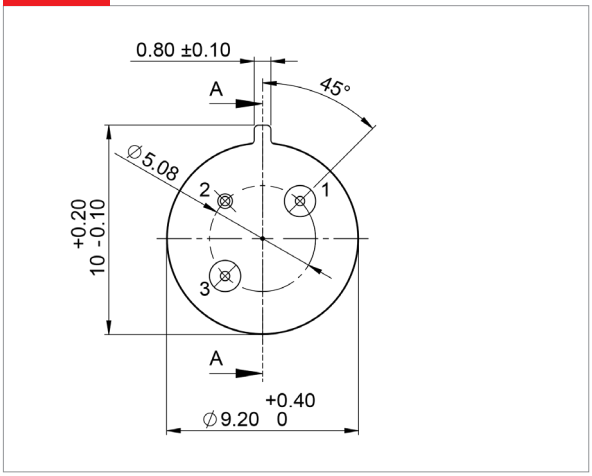
Circuits

Equivalent circuit diagram



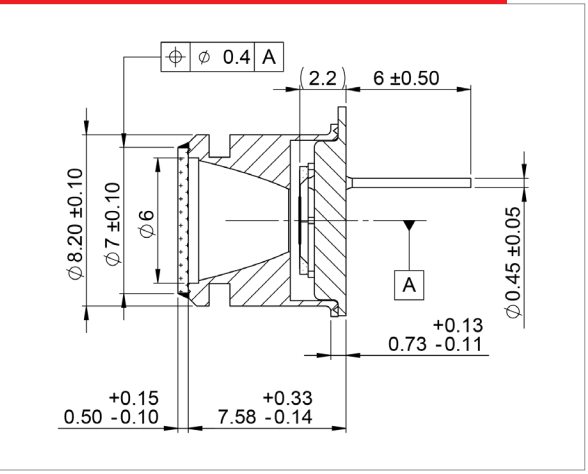
Mechanical drawings

Bottom



→ All geometrical dimensions in mm

Sectional – JSIR 350 reflector, soldered filter



Product overview

Article	Type	Filling gas	Temp. min	Temp. max	Aperture	Window
JSIR350-4-AL-R-D6.0-N2-A1-I	TO39 with reflector	N_2	-20 °C	185 °C	6.0 mm	Sapphire
JSIR350-4-AL-R-D6.0-N2-A7-I	TO39 with reflector	N_2	-20 °C	125 °C	6.0 mm	Si ARC

Disclaimer