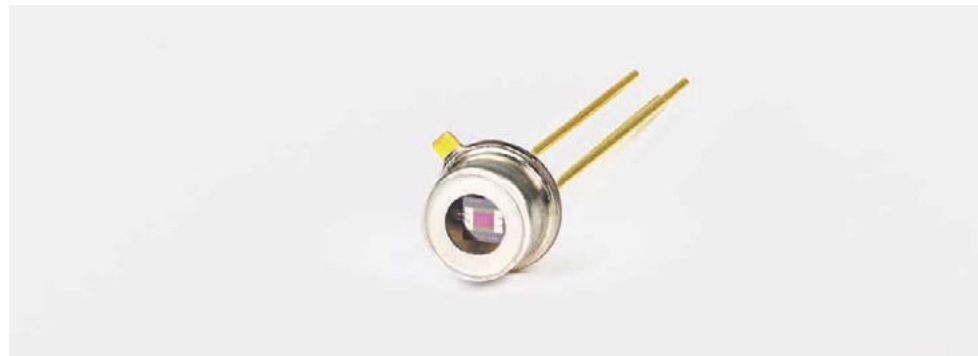


➤ PRODUCT DATA SHEET

JSIR 350-5

Premium MEMS based infrared radiation sources for NDIR gas analysis



Infrared radiation sources combining radiation-performance with low power-consumption for battery powered or handheld gas measurement devices.

The powerful IR emitters made by our MEMS fab NOVA IR consist of nanoamorphous carbon (NAC). They achieve membrane temperatures of up to 850 °C for a high and longterm stable radiation performance. JSIR 350-5 sources are available in different packaging options: TO housing with cap and reflector or SMD housing. The spectral performance can be individually optimized by various filters and filling gases.

FEATURES

- High membrane temperature up to 850 °C
- High modulation frequency
- Long lifetime (reliability due to high stability of the membrane)

APPLICATIONS

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

TARGET GASES

- CO₂, CO, NO₂, NH₃, SO₂, SF₆ and ripening gases such as C₂H₄ (ethylene) and C₂H₂ (acetylene)



- 1 - Multi layer hot plate membrane containing NAC layer
 2 - Bond pads
 3 - Si frame and membrane

PRODUCT DATA SHEET • IR sources • JSIR 350-5 | © Micro-Hybrid-Electronic GmbH | 2020-10

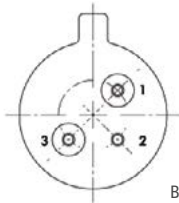
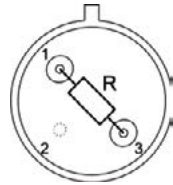
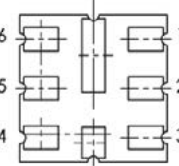
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 INFRARED COMPONENTS
AND SYSTEMS

Technical data

Technical parameter	Open, window Nz	Window Kr	Unit
Spectral output range	2 ... 15	2 ... 15	μm
Active area	0.65 x 0.65	0.65 x 0.65	mm ²
Hot resistant	40 ± 20	40 ± 20	Ω
Temperature coefficient ¹	typ. 500	typ. 500	ppm/K
Time constant _{0-63%}	typ. 8	typ. 13	ms
Nominal power consumption ²	175	110	mW
Operation voltage ³	typ. 2.6	typ. 2.1	V
Operation current ³	typ. 66	typ. 52	mA
Recommended driving mode	Power mode	Power mode	
Active area temperature ^{4,5}	610 ± 30	610 ± 30	°C
Window/filter	available	available	
Housing	T046 (modified), SMD	T046 (modified)	
Estimated lifetime ^{5,6}	> 100000 h at 610 °C	> 100000 h at 610 °C	
Absolute max. ratings			
Input power ^{2,5}	300	200	mW
Housing temperature	200	200	°C
Active area temperature	850	850	°C

Pin out

 <p>Bottom view</p>	<ul style="list-style-type: none"> ▪ Pin 1 – Power 1 ▪ Pin 2 – Case ▪ Pin 3 – Power 2 	 <p>Top view</p>
 <p>Bottom view</p>	<ul style="list-style-type: none"> ▪ Pin 3 – Power 1 ▪ Pin 4 – Power 2 	

¹ 0 °C - 850 °C

² at power on-state

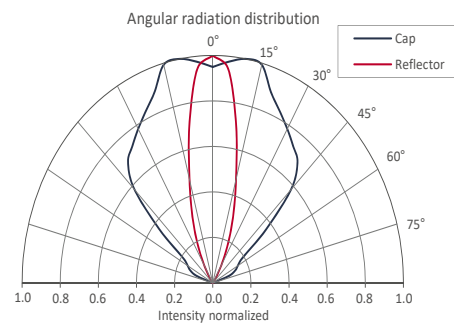
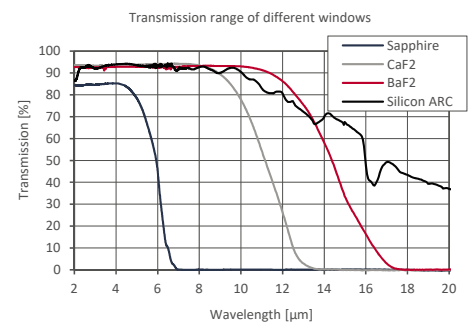
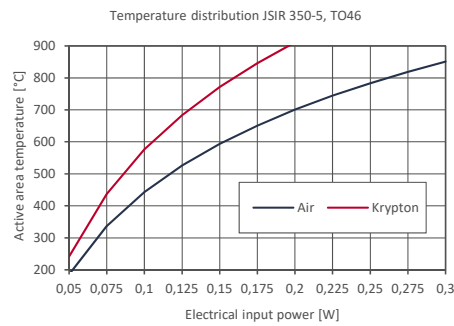
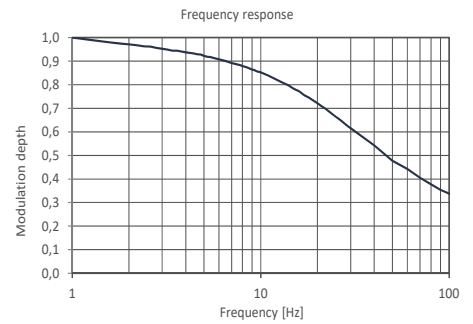
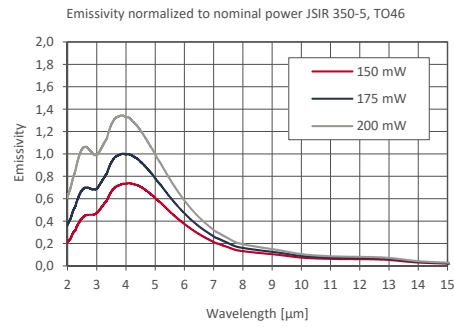
³ with 40 Ω

⁴ DC power (nominal power)

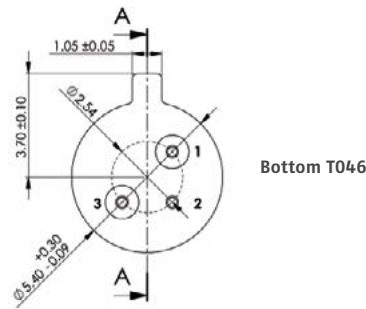
⁵ at T_{amb} = 25 °C

⁶ at 1 Hz, 50 % duty cycle, MTTF 63 % (membrane fracture, preliminary results)

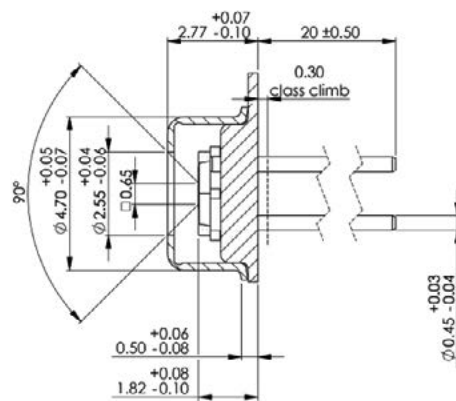
Typical operating characteristics of IR sources › JSIR 350-5 without window



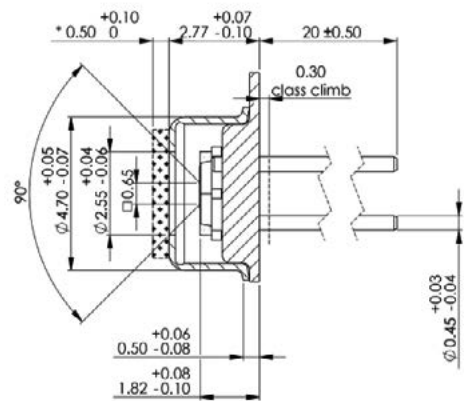
Mechanical drawings



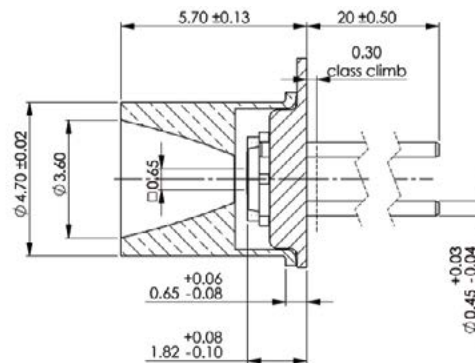
Side view – JSIR 350 cap open



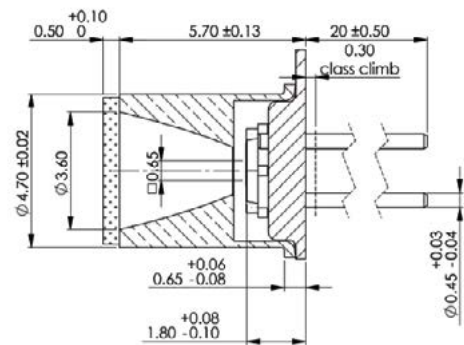
Side view – JSIR 350 cap with filter



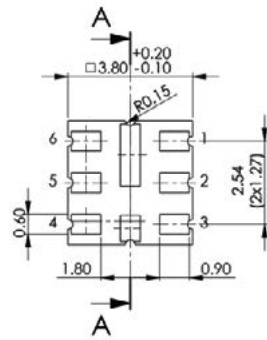
Side view – JSIR 350 reflector open



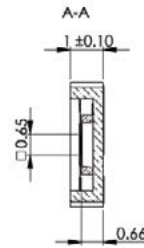
Side view – JSIR 350 reflector with filter



Bottom view - JSIR 350 SMD



AA - JSIR 350 SMD



all geometrical dimensions in mm

Product overview

Article		Type	Filling gas	Temp. min	Temp. max	Aperture	Filter	Active area
JSIR350-5-BL-C-D2.55-0-0	s	T046 with cap		-20 °C	85 °C	2.55 mm	w/o	0.65 x 0.65 mm ²
JSIR350-5-BL-C-D2.55-2-A1	d	T046 with cap	Kr	-20 °C	85 °C	2.55 mm	Sapphire	0.65 x 0.65 mm ²
JSIR350-5-BL-C-D2.55-2-A2	d	T046 with cap	Kr	-20 °C	85 °C	2.55 mm	CaF ₂	0.65 x 0.65 mm ²
JSIR350-5-BL-C-D2.55-2-A4	d	T046 with cap	Kr	-20 °C	85 °C	2.55 mm	BaF ₂	0.65 x 0.65 mm ²
JSIR350-5-BL-C-D2.55-1-A1	d	T046 with cap	N ₂	-20 °C	85 °C	2.55 mm	Sapphire	0.65 x 0.65 mm ²
JSIR350-5-BL-C-D2.55-1-A2	d	T046 with cap	N ₂	-20 °C	85 °C	2.55 mm	CaF ₂	0.65 x 0.65 mm ²
JSIR350-5-BL-C-D2.55-1-A4	d	T046 with cap	N ₂	-20 °C	85 °C	2.55 mm	BaF ₂	0.65 x 0.65 mm ²
JSIR350-5-BL-R-D3.6-0-0	s	T046 with reflector		-20 °C	85 °C	3.6 mm	w/o	0.65 x 0.65 mm ²
JSIR350-5-BL-R-D3.6-2-A2	d	T046 with reflector	Kr	-20 °C	85 °C	3.6 mm	CaF ₂	0.65 x 0.65 mm ²
JSIR350-5-BL-R-D3.6-2-A4	d	T046 with reflector	Kr	-20 °C	85 °C	3.6 mm	BaF ₂	0.65 x 0.65 mm ²
JSIR350-5-BL-R-D3.6-1-A1	d	T046 with reflector	N ₂	-20 °C	85 °C	3.6 mm	Sapphire	0.65 x 0.65 mm ²
JSIR350-5-BL-R-D3.6-1-A2	d	T046 with reflector	N ₂	-20 °C	85 °C	3.6 mm	CaF ₂	0.65 x 0.65 mm ²
JSIR350-5-BL-R-D3.6-1-A4	d	T046 with reflector	N ₂	-20 °C	85 °C	3.6 mm	BaF ₂	0.65 x 0.65 mm ²
JSIR350-5-CS-0-S2.8-0-A7	s	SMD	Air	-20 °C	85 °C	2.8 mm	Silicon	0.65 x 0.65 mm ²

s in stock d on demand

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.

NOVA IR and **CMOSIR** are companies of Micro-Hybrid Electronic GmbH.