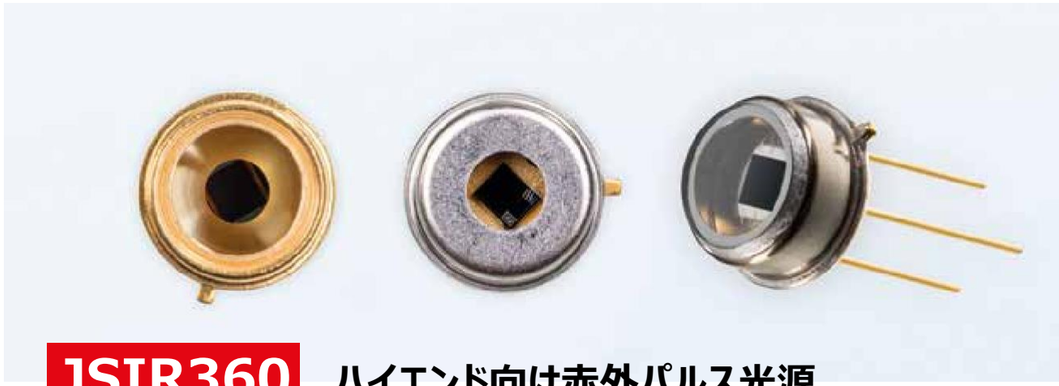
MicroHybrid社製　赤外光源

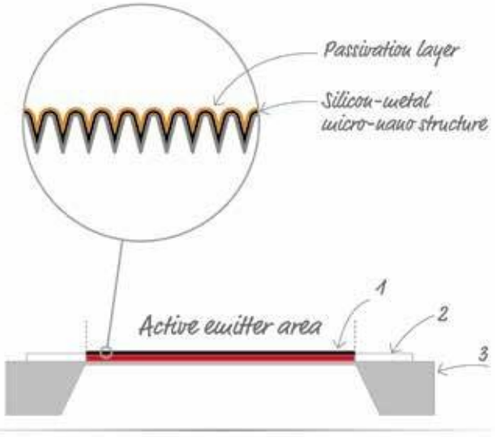


JSIR360　ハイエンド向け赤外パルス光源

High-end MEMS based infrared emitter with black-silicon emission layer for NDIR gas analysis in the long wave length range for ambitious medical and industrial applications.

By implementation of a sophisticated micro-nano structured silicon-metal emissions layer at a MEMS hot-plate emitter chip, Micro-Hybrid offers infrared sources with true black body radiation characteristic. The extraordinary performance IR emitter MEMS chips are defined by hot-plate temperatures up to 850° C in combination with a spectral broadband emission coefficient ε nearly 1. This enables highest radiation intensities over a wide infrared wavelength range. Besides the high infrared output intensity our successful development focused on the long term stability. JSIR 360 sources are available in different TO packaging versions with cap or reflector as well as in SMD housings. Various backfill gases in hermetically sealed TO packages produce highly efficient versions and less power dissipation for e.g. battery-powered applications.

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



1 – Multilayer hot plate membrane: black Si + metal & passivation layers
2 – Bond pads
3 – Si frame and membrane

FEATURES

- True black body radiation behavior
- Highest radiation intensities by hot-plate temperatures up to 850° C in combination with emission coefficient ε ~ 1
- Long lifetime by thermal-mechanical adjusted membrane
- Spectral drift free behavior also in hermetically sealed packages
- HermeSEAL® technology empowering application in harsh environments

APPLICATIONS

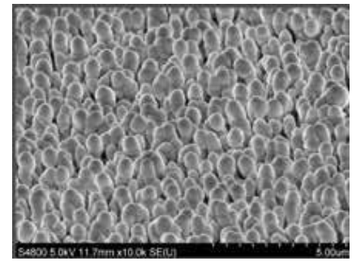
- NDIR gas analysis, DIR & ATR spectroscopy, Photoaccoustic gas spectroscopy

TARGET GASES

- CO_2, CO, NO_2, NH, SOx SF_6 and ripening gases such as C_2H (ethylene) and C_2H_2 (acetylene)
- Anesthetic gases, CH_4, C_3H_8, C_2H_5OH

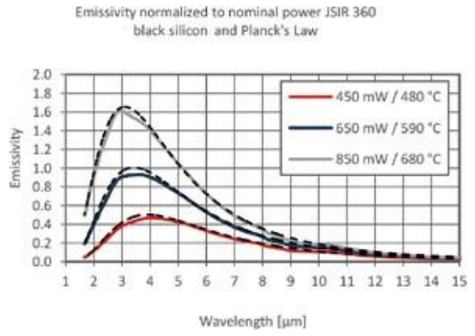
GENERAL ARRANGEMENT

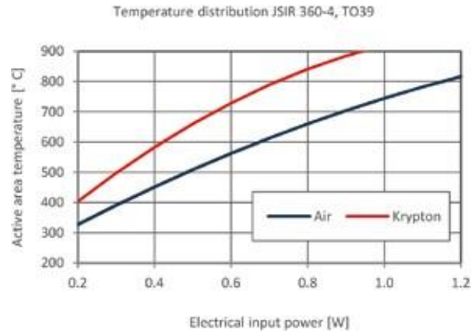
The MEMS chip used in our infrared emitters consists of a multi-layer hot plate membrane containing a high temperature stable metal heater layer as well as advanced silicon-metal micro-nano structured surfaces on top. A final passivation layer guarantees long term stability of the emission behavior at hot-plate temperatures up to 850° C. The emitter chip is based on a silicon sub- strate with a back etched membrane. All thin film processes are conducted by CMOS compatible materials.



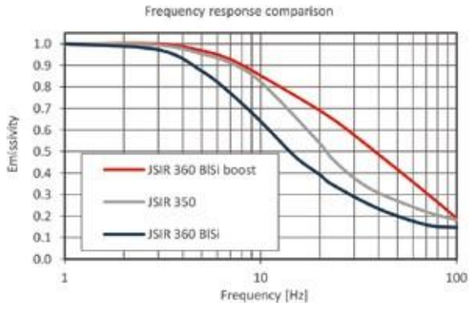
OPERATING CHARACTERISTICS

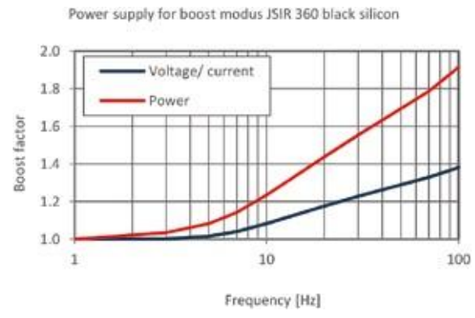
Emissivity and temperature distribution





Typical frequency response in different operating modes





JSIR360-4-AL-C-D5.8-0-0

Housing	TO39
Add-on	Cap
Window/filter	Available
Filling gas	No
Active area [mm²]	2.2 x 2.2
Power consumption	Normal

株式会社 アイ・アール・システム
〒206-0041　東京都多摩市愛宕4-6-20　IRSビル
電話:042-400-0373　FAX:042-400-0374
E-mail: office@irsystem.com　Homepage: https://www.irsystem.com