

HSL EMIRS Series

IR Sources for broad range Gas Analysis



LEISTER Microsystems

Features:

- Thermal black body source
- Wide wavelength range (2-16 μm)
- Fast electrical modulation
- High modulation depth
- No moving parts
- Low power consumption
- Long term stable output

Applications:

- Infrared gas detection & monitoring (e.g. CO, CO₂, NO_x, SO_x, anaesthetics)
- Photoacoustic gas detection
- Calibration sources

The IR Source is a micro-machined electrically modulated thermal infrared emitter with a compact package, no mechanical moving parts and a long lifetime.

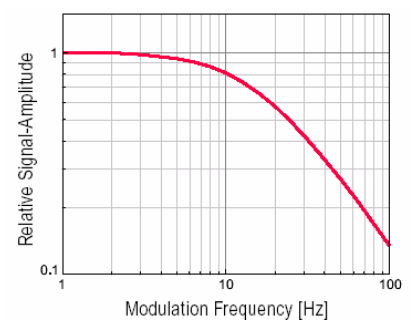
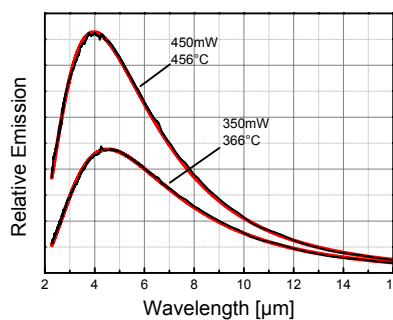
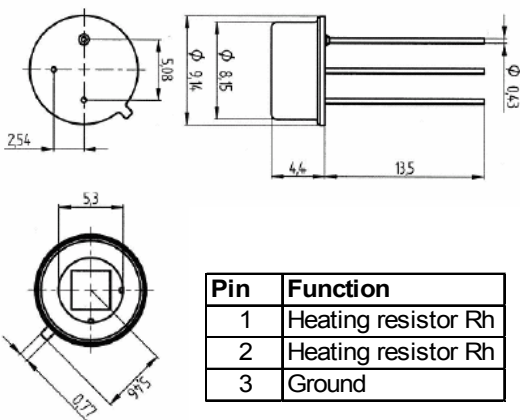
The IR Source is based on a resistive heating element, integrated on a thin dielectric membrane. The low thermal mass permits a fast direct electrical modulation of the IR radiation.

A patented technology allows to manufacture highly reliable modulated IR sources with true black body characteristics and very high emissivity. This results in low power consumption and long life time with constant emission characteristics.

Electrical/Optical characteristics (T_c=25°C)

| Parameter | Min | Typ | Max | Unit | Conditions |
|--------------------------|-----|---------|-----|--------------------|--|
| Cold Resistance | 35 | 45 | 55 | Ω | |
| Hot Resistance | | 72 | | Ω | 450 mW |
| Electrical input power | | 450 | | mW | end of heating cycle |
| Operating voltage | | 5.7 | 6.3 | V | 450 mW |
| Operating current | | 80 | 90 | mA | 450 mW |
| Heating time constant | | 11 | | ms | |
| Cooling time constant | | 17 | | ms | |
| Peak emission wavelength | | 4.0 | | μm | 450 mW |
| Emissivity | 0.9 | 0.95 | | | VIS to 15 μm |
| Lifetime (measured) | | >40'000 | | hours | 50% duty cycle, 30 Hz, 450 mW, ongoing |
| Heating area | | 2.1x1.8 | | mm ² | |
| Case Temperature | | 47 | | $^{\circ}\text{C}$ | 50% duty cycle, 30 Hz, 450 mW |

Package outline:



Square wave voltage, constant amplitude 50% duty cycle.

EMIRS200-40/53-0 IR Source with cap, without window
(A variety of window materials, filters and optical waveguides are optionally available).

Authorized distributor:

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