**HSL EMIRS Series**

IR Sources for broad range Gas Analysis

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

The IRSource 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.

Latest 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.

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**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, NOx, SOx, anaesthetics)
- Photoacoustic gas detection
- Calibration sources

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**Electrical/Optical characteristics (T=25°C)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold Resistance</td>
<td>35</td>
<td>45</td>
<td>55</td>
<td>Ω</td>
<td></td>
</tr>
<tr>
<td>Hot Resistance</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical input power</td>
<td>450</td>
<td>mW</td>
<td></td>
<td>end of heating cycle</td>
<td></td>
</tr>
<tr>
<td>Operating voltage</td>
<td>5.7</td>
<td>6.3</td>
<td>V</td>
<td>450 mW</td>
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<tr>
<td>Operating current</td>
<td>80</td>
<td>90</td>
<td>mA</td>
<td>450 mW</td>
<td></td>
</tr>
<tr>
<td>Heating time constant</td>
<td>11</td>
<td></td>
<td>ms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling time constant</td>
<td>17</td>
<td></td>
<td>ms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak emission wavelength</td>
<td>4.8</td>
<td>µm</td>
<td></td>
<td>450 mW</td>
<td></td>
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<tr>
<td>Emissivity</td>
<td>0.9</td>
<td>0.95</td>
<td></td>
<td></td>
<td>1.5 to 10 µm</td>
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<tr>
<td>Lifet ime (measured)</td>
<td>&gt;48,500</td>
<td></td>
<td>Hours</td>
<td>50% duty cycle, 30 Hz, 450 mW, onaxis</td>
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<tr>
<td>Heating area</td>
<td>2.7 x 1.8</td>
<td></td>
<td>mm²</td>
<td></td>
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<tr>
<td>Case Temperature</td>
<td>47</td>
<td></td>
<td>°C</td>
<td></td>
<td>50% duty cycle, 30 Hz, 450 mW</td>
</tr>
</tbody>
</table>

**Package outline**

An optimized reflector design offers a gain of approx. 7 times in intensity on the optical axis.

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**Features:**
- Square wave voltage, constant amplitude 50% duty cycle.

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**Authorized distributor:**

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