The HMS Series of CMOS compatible thermopile sensor chips in TO46 (or TO18) and even smaller transistor housings, features good sensitivity, small temperature coefficient of sensitivity as well as high reproducibility and reliability. The smaller package sizes benefit applications in which sensor mounting is a critical parameter. Especially the ultra small HMS Z11 F5.5 sensor with high symmetry (no orientation tab) opens new design and application possibilities. The HMS M-types offer the possibility to integrate an infrared lens into a TO46 housing and to reduce the field of view accordingly. The smaller chip TP1 is well suited for temperature measurements which require a precise measuring spot whereas the chip type TP2 offers higher signal.

Ordering Information:
HMS / package shape / chip type / w/wo thermistor / opt. L lens with focal length f / F desired filter type,
e.g.: HMS J11 F5.5
e.g.: HMS M11 L3.0 F8.0

<table>
<thead>
<tr>
<th>Parameter</th>
<th>HMS Z11</th>
<th>HMS J11</th>
<th>HMS J1c1</th>
<th>HMS J21</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>element size</td>
<td>0.61²</td>
<td>0.61²</td>
<td>0.76²</td>
<td>1.2²</td>
<td>mm²</td>
</tr>
<tr>
<td>voltage response</td>
<td>22</td>
<td>22</td>
<td>30</td>
<td>63</td>
<td>V mm/W</td>
</tr>
<tr>
<td>sensitivity</td>
<td>58</td>
<td>58</td>
<td>52</td>
<td>44</td>
<td>V/W</td>
</tr>
<tr>
<td>resistance R_t</td>
<td>86</td>
<td>86</td>
<td>75</td>
<td>84</td>
<td>k Ohm</td>
</tr>
<tr>
<td>TC of resistance R_t²</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>% / K</td>
</tr>
<tr>
<td>noise</td>
<td>38</td>
<td>38</td>
<td>35</td>
<td>37</td>
<td>nV / Hz¹/²</td>
</tr>
<tr>
<td>detectivity²</td>
<td>0.9 x 10⁶</td>
<td>0.9 x 10⁶</td>
<td>1.1 x 10⁶</td>
<td>1.4 x 10⁶</td>
<td>cm Hz¹/² / W</td>
</tr>
<tr>
<td>time constant</td>
<td>&lt; 6</td>
<td>&lt; 6</td>
<td>8</td>
<td>10</td>
<td>ms</td>
</tr>
<tr>
<td>thermistor reference</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>kOhm</td>
</tr>
<tr>
<td>temp.coeff.of thermistor B³</td>
<td>3940</td>
<td>3940</td>
<td>3940</td>
<td>3940</td>
<td>K</td>
</tr>
<tr>
<td>field of view</td>
<td>95</td>
<td>120</td>
<td>100</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>operating temperature</td>
<td>-20...120</td>
<td>°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>storage temperature</td>
<td>-40...120</td>
<td>°C</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) without filter, Tobj=100°C, DC
2) at Tamb=25°C
3) 25°C, 50°C
4) degree at 50% signal level
* same as J11, without orientation nose

Filter types for temperature measurements
Filter types for Gas Analysis