Temperature sensing for digital camera

As cameras become more powerful and offer higher resolution, faster speed, and more integrated features, temperature protection is critical to ensure their long term performance and reliability.

In a digital single-lens reflex (DSLR) camera, monitoring the CMS sensor, lens, and frame allows the CPU to take action on reducing thermal noise. The **TMP112** is well suited for monitoring the components because of its low-power and 0.5°C accuracy. In addition, monitoring the temperature protects the system against extreme temperatures.

In digital still cameras (DSC) and drone cameras, space is limited and therefore requires smaller components. The **LMT70** can be conveniently placed within a small space because of its tiny package size of 0.88 x 0.88 mm. As with the DSLR camera, monitoring the temperature can help prevent overheating.

TI’s temperature sensor portfolio includes a broad selection of analog or digital output, and leaded, or chip-scale packages that have conveniently small footprints for cameras. These devices are also high in accuracy and low in power consumption, and do not require any calibration.

<table>
<thead>
<tr>
<th>Part number</th>
<th>Interface</th>
<th>Accuracy (max)</th>
<th>Operating range</th>
<th>Supply range</th>
<th>Package type</th>
<th>Package footprint</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMP112</td>
<td>I²C / SMBUS</td>
<td>0.5°C</td>
<td>-40°C to 125°C</td>
<td>1.4 V to 3.6 V</td>
<td>SOT-563</td>
<td>1.60 x 1.60 mm</td>
</tr>
<tr>
<td>LMT70</td>
<td>Analog</td>
<td>0.2°C</td>
<td>-40°C to +150°C</td>
<td>2.0 V to 5.5 V</td>
<td>DSBGA</td>
<td>0.88 x 0.88 mm</td>
</tr>
</tbody>
</table>
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