Surface Mount High Output Infrared LEDs
SIM-030ST

● Applications
  • Light source for sensors

● Features
  1) High compact, low-profile
  2) High output, over a narrow angle
  3) Excellent temperature property
  4) Long life, high reliability
  5) Original optical technology is ultra-high-output surface mount infrared LEDs.

● Dimensions (Unit : mm)

- | Absolute maximum ratings (T_a = 25°C) |
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward current</td>
<td>I_F</td>
<td>100</td>
<td>mA</td>
</tr>
<tr>
<td>Pulse forward current*1</td>
<td>I_{FP}</td>
<td>1</td>
<td>A</td>
</tr>
<tr>
<td>Reverse voltage</td>
<td>V_R</td>
<td>5</td>
<td>V</td>
</tr>
<tr>
<td>Power dissipation</td>
<td>P_D</td>
<td>180</td>
<td>mW</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>T_{opr}</td>
<td>-25 to +85</td>
<td>°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>T_{stg}</td>
<td>-40 to +85</td>
<td>°C</td>
</tr>
</tbody>
</table>

*1 Pulse width 0.1msec, duty ratio1%
### Electrical and optical characteristics \((T_a = 25°C)\)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Conditions</th>
<th>Values</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward voltage</td>
<td>(V_F)</td>
<td>(I_F = 100,mA)</td>
<td>- 1.7 2.5</td>
<td>V</td>
</tr>
<tr>
<td>Reverse current</td>
<td>(I_R)</td>
<td>(V_R = 5,V)</td>
<td>- - 15</td>
<td>(\mu A)</td>
</tr>
<tr>
<td>Peak light emitting wavelength</td>
<td>(\lambda_{\text{peak}})</td>
<td>(I_F = 100,mA)</td>
<td>- 870 -</td>
<td>nm</td>
</tr>
<tr>
<td>Spectral line half width</td>
<td>(\Delta \lambda)</td>
<td>(I_F = 100,mA)</td>
<td>- 35 -</td>
<td>nm</td>
</tr>
<tr>
<td>View angle</td>
<td>(\theta_{1/2})</td>
<td>-</td>
<td>- (\pm 20) -</td>
<td>deg.</td>
</tr>
<tr>
<td>Radiant intensity</td>
<td>(I_E)</td>
<td>(I_F = 100,mA)</td>
<td>10 - 100</td>
<td>mW/sr</td>
</tr>
</tbody>
</table>

*Non-coherent infrared light emitting diode used.

*This product is not designed to be protected against electromagnetic wave.*
• Electrical and optical characteristics curves

Fig.1 Forward Current Falloff

Fig.2 Forward Current vs. Forward Voltage

Fig.3 Emitter Strength vs. Forward Current

Fig.4 Relative Emitter Strength vs. Ambient Temperature
● Electrical and optical characteristics curves

Fig. 5 Spectrum Data

![Graph of Spectrum Data](Image)

Optical Wavelength: $\lambda$ [nm]

Relative Radiant Intensity: [%]

0% 20% 40% 60% 80% 100%

700 750 800 850 900 950 1000 1050

Fig. 6 Radiant Intensity

![Graph of Radiant Intensity](Image)

Angle: [deg]

Relative Radiant Intensity: [%]

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

-90 -60 -30 0 30 60 90

IF = 100mA

Fig. 7 Wavelength vs. Ambient Temperature

![Graph of Wavelength vs. Ambient Temperature](Image)

Wavelength: $\lambda_p$ [nm]

850 855 860 865 870 875 880

Ambient Temperature: $T_a$ [°C]

0 25 50 75 100

IF = 100mA
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