Surface Mount High Output Infared LEDs
SIM-040ST

●Applications

- Light source for sensors
  (proximity sensors, signal transmission applications)

●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)

![Dimensions Diagram]

- Internal connection diagram

- Notes:
  1. Unspecified tolerance shall be ±0.15.
  2. Dimension in parenthesis are show for reference.

●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 ratio 1%
### Electrical and optical characteristics \((T_a = 25^\circ C)\)

<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>-</td>
<td>1.7</td>
</tr>
<tr>
<td>Reverse current</td>
<td>(I_R)</td>
<td>(V_R = 5V)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Peak light emitting wavelength</td>
<td>(\lambda_p)</td>
<td>(I_F = 100) mA</td>
<td>-</td>
<td>870</td>
</tr>
<tr>
<td>Spectral line half width</td>
<td>(\Delta\lambda)</td>
<td>(I_F = 100) mA</td>
<td>-</td>
<td>35</td>
</tr>
<tr>
<td>View angle</td>
<td>(\theta/2)</td>
<td>-</td>
<td>-</td>
<td>(\pm 20)</td>
</tr>
<tr>
<td>Radiant intensity</td>
<td>(I_E)</td>
<td>(I_F = 100) mA</td>
<td>20</td>
<td>-</td>
</tr>
</tbody>
</table>

* This product is not designed to be protected against electromagnetic wave.
* Non-coherent infrared light emitting diode used.
Electrical and optical characteristics curves

**Fig. 1 Forward Current Falloff**

**Fig. 2 Forward Current vs. Forward Voltage**

**Fig. 3 Radiant intensity vs. Forward current**

**Fig. 4 Relative Radiant vs. Ambient Temperature**
• Electrical and optical characteristics curves

Fig. 5 Spectral data

![Spectral data graph showing relative radiant intensity vs. optical wavelength.]

Optical Wavelength: $\lambda_p$ [nm]

Relative Radiant Intensity

-700 - 1050

Fig. 6 Radiant intensity

![Radiant intensity graph showing relative radiant intensity vs. angle.]

Relative Radiant Intensity: [%]

Angle: [deg]

$P_r = 100 mA$

Fig. 7 Wavelength vs. Ambient temperature

![Wavelength vs. ambient temperature graph.]

Wavelength: $\lambda_p$ [nm]

Ambient Temperature: $T_a$ [°C]

$P_r = 100 mA$
Notes

1) The information contained herein is subject to change without notice.

2) Before you use our Products, please contact our sales representative and verify the latest specifications:

3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors. Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. ROHM shall have no responsibility for any damages arising out of the use of our Products beyond the rating specified by ROHM.

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5) The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM or any other parties. ROHM shall have no responsibility whatsoever for any dispute arising out of the use of such technical information.

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7) The Products specified in this document are not designed to be radiation tolerant.

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