

Infrared light emitting diode, side-view type

SIM-22ST

The SIM-22ST is a GaAs infrared light emitting diode housed in side emission. High output with $\phi 1.5$ lens.

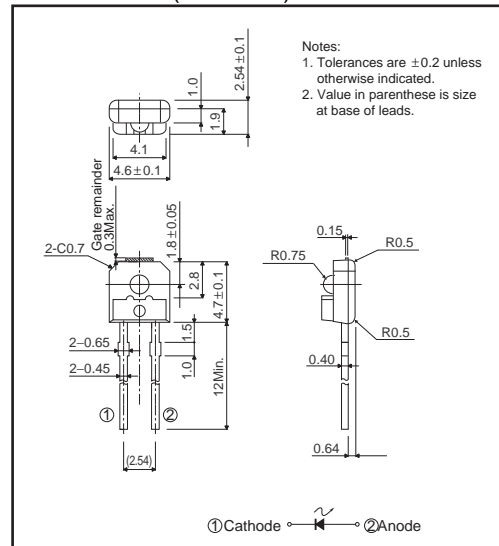
●Applications

Light source for sensors

●Features

- 1) Compact package (4.7x4.6 mm) with lens.
- 2) High efficiency, high output.
- 3) Emission spectrum well suited to silicon detectors ($\lambda_P = 950$ nm).
- 4) Good current-optical output linearity.
- 5) Long life, high reliability.

●Dimensions (Unit : mm)



●Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|-----------------------|------------|-------------|------|
| Forward current | I_F | 50 | mA |
| Reverse voltage | V_R | 5 | V |
| Power dissipation | P_D | 80 | mW |
| Pulse forward current | I_{FP}^* | 0.5 | A |
| Operating temperature | T_{opr} | -25 to +85 | °C |
| Storage temperature | T_{stg} | -30 to +100 | °C |

* Pulse width = 0.1ms, duty ratio 1%

●Electrical and optical characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------------|-----------------|------|----------|------|---------|--------------|
| Emitting strength I | I_{EI} | - | 0.8 | - | mW/sr | $I_F=10$ mA |
| Emitting strength II | I_{EII} | 0.48 | 1.3 | 1.94 | mA | $I_F=10$ mA* |
| Forward voltage | V_F | - | 1.3 | 1.6 | V | $I_F=50$ mA |
| Reverse current | I_R | - | - | 10 | μ A | $V_R=5$ V |
| Peak light emitting wavelength | λ_P | - | 950 | - | nm | $I_F=10$ mA |
| Spectral line half width | $\Delta\lambda$ | - | 40 | - | nm | $I_F=20$ mA |
| Half-viewing angle | $\theta_{1/2}$ | - | ± 30 | - | deg | $I_F=50$ mA |
| Response time | $t_r \cdot t_f$ | - | 1.0 | - | μ s | $I_F=50$ mA |
| Cut-off frequency | f_c | - | 1.0 | - | MHz | $I_F=50$ mA |

* According to our measurement procedures.

●Electrical and optical characteristic curves

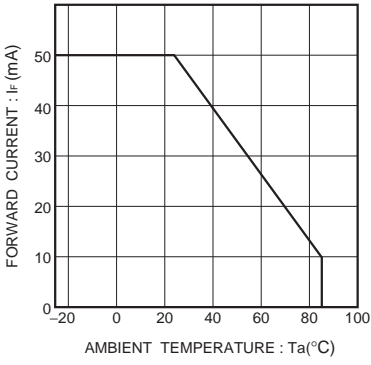


Fig.1 Forward current falloff

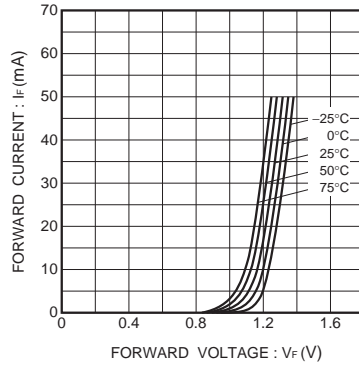


Fig.2 Forward current vs. forward voltage

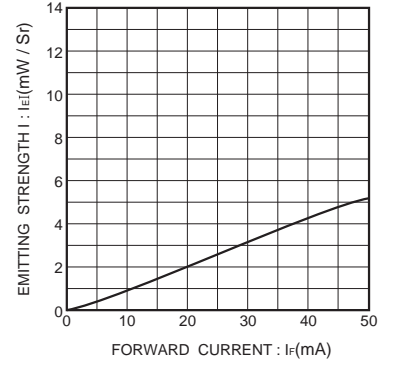


Fig.3 Emitting strength I vs. forward current

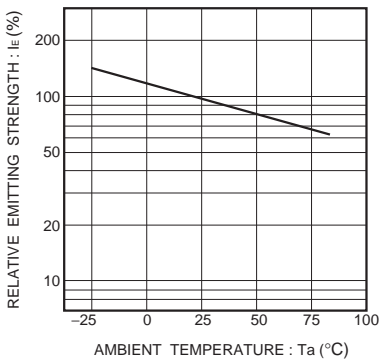


Fig.4 Relative emitting strength vs. ambient temperature

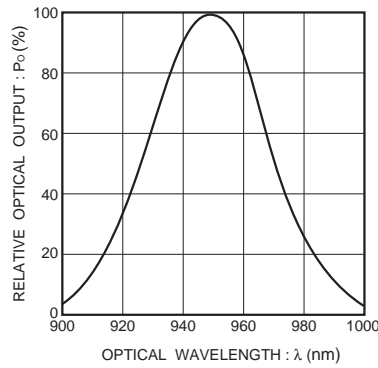


Fig.5 Wavelength

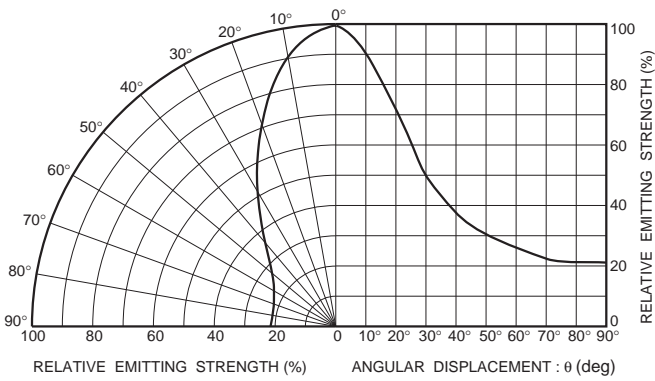


Fig. 6 Directional pattern

Notes

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