

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.

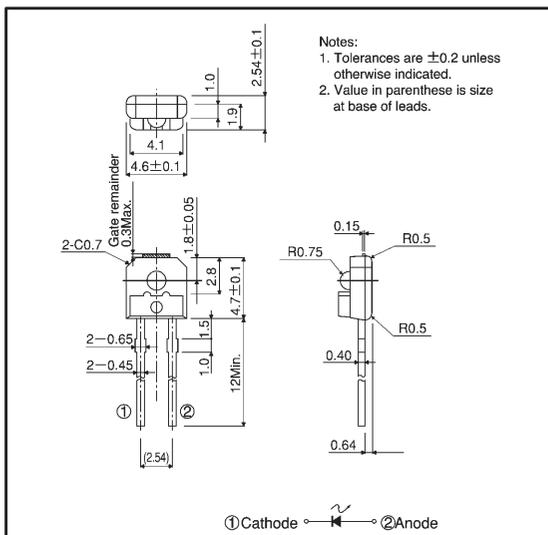
●Applications

Light source for sensors

●Features

- 1) Compact package (4.7×4.6 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.

●External dimensions (Units: mm)



●Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

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}^*	1.0	A
Operating temperature	T_{opr}	$-25 \sim +85$	$^\circ\text{C}$
Storage temperature	T_{stg}	$-30 \sim +100$	$^\circ\text{C}$

* Pulse width=0.1 msec, duty ratio 1%

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Emitting strength I	$I_{E I}$	—	0.8	—	mW/sr	$I_F=10\text{mA}$
Emitting strength II	$I_{E II}$	0.5	1.3	2.08	mA	$I_F=10\text{mA}^*$
Forward voltage	V_F	—	1.3	1.6	V	$I_F=50\text{mA}$
Reverse current	I_R	—	—	10	μA	$V_R=5\text{V}$
Peak light emitting wavelength	λ_P	—	950	—	nm	$I_F=10\text{mA}$
Spectral line half width	$\Delta \lambda$	—	40	—	nm	$I_F=20\text{mA}$
Half-viewing angle	$\theta_{1/2}$	—	± 30	—	deg	$I_F=50\text{mA}$
Response time	$t_r \cdot t_f$	—	1	—	μs	$I_F=50\text{mA}$
Cut-off frequency	f_c	—	1.0	—	MHz	$I_F=50\text{mA}$

* According to our measurement procedures.

●Electrical and optical characteristic curves

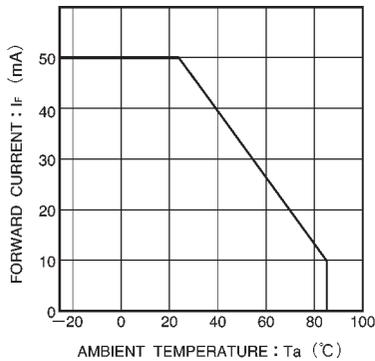


Fig.1 Forward current falloff

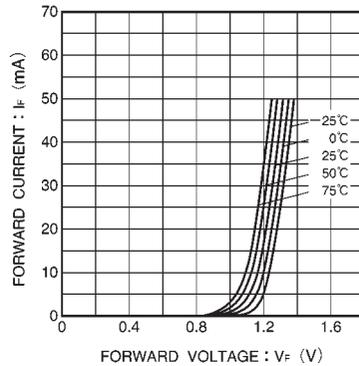


Fig.2 Forward current vs. forward voltage

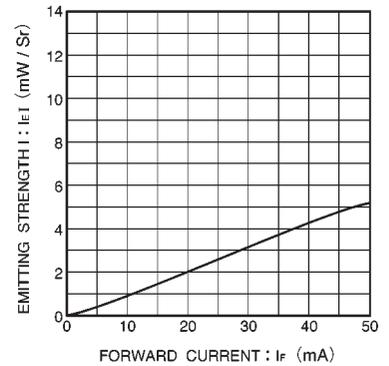


Fig.3 Emitting strength I vs. forward current

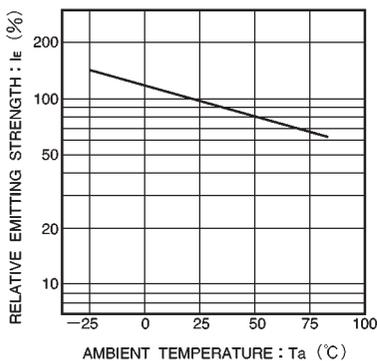


Fig.4 Relative emitting strength vs. ambient temperature

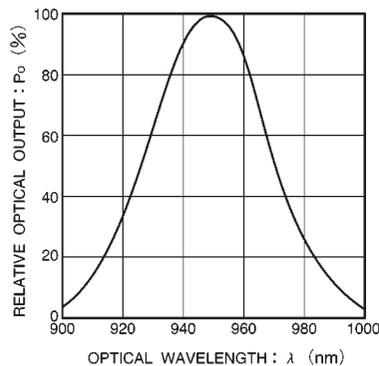


Fig.5 Wavelength

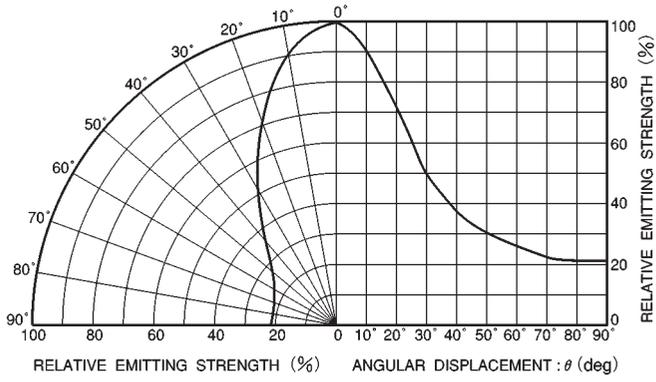


Fig. 6 Directional pattern