

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.

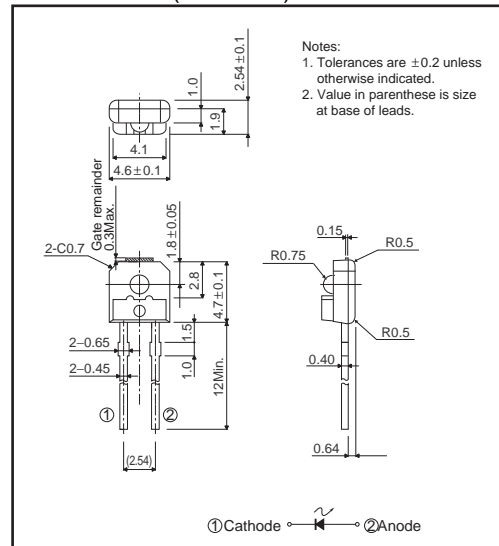
●Applications

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	$I_{E I}$	-	0.8	-	mW/sr	$I_F=10$ mA
Emitting strength II	$I_{E II}$	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

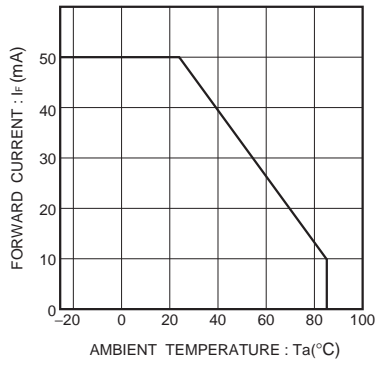


Fig.1 Forward current falloff

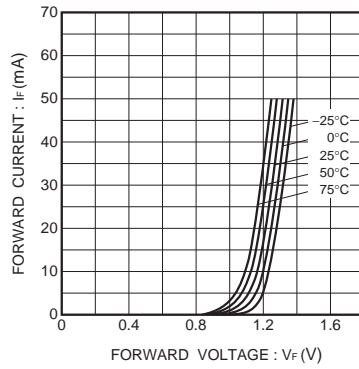


Fig.2 Forward current vs. forward voltage

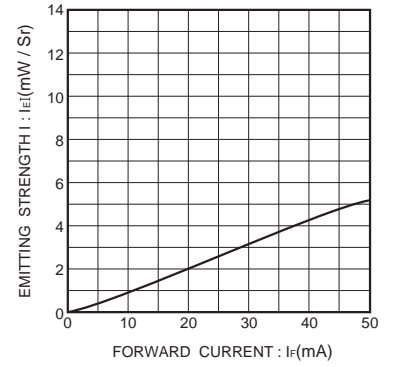


Fig.3 Emitting strength I vs. forward current

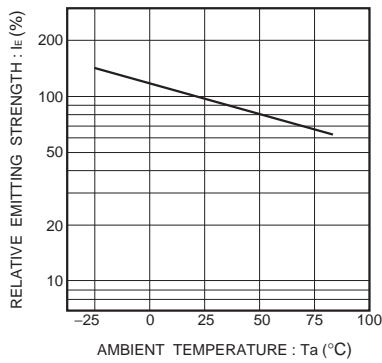


Fig.4 Relative emitting strength vs. ambient temperature

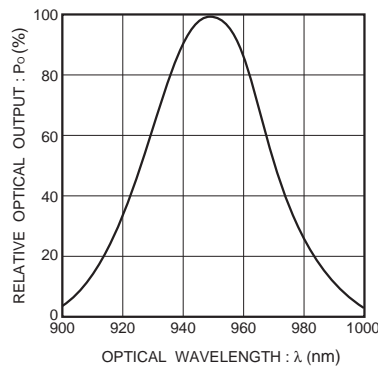


Fig.5 Wavelength

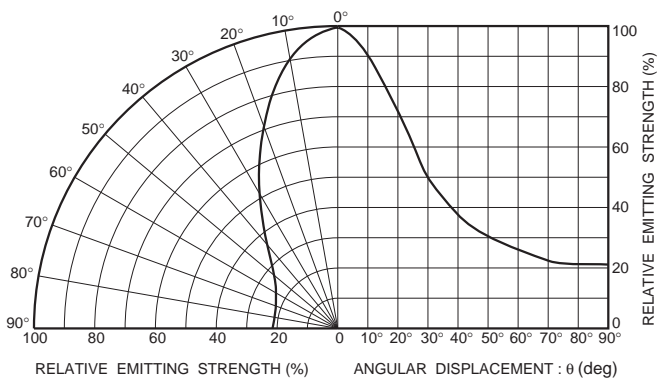


Fig. 6 Directional pattern

Notes

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