Infrared light emitting diode, side-view type

SIM-20ST

The SIM-20ST is a GaAs infrared light emitting diode with a side-facing detector. High output with ϕ1.85 lens.

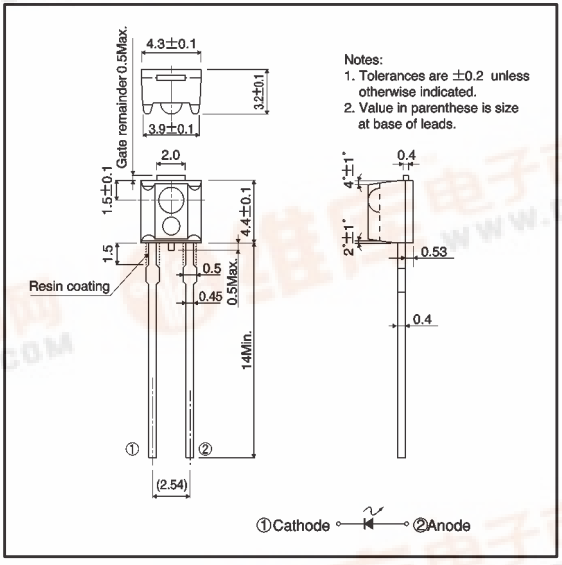
●Applications

Light source for sensors

●Features

1) Compact package (4.4 × 4.3 mm) with lens.
2) High efficiency, high output P_O = 7 mW (I_F = 50 mA).
3) Emission spectrum well suited to silicon detectors (λ_P = 950 nm).
4) Good current-optical output linearity.
5) Long life, high reliability.

●External dimensions (Units: 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}*	1.0	A
Operating temperature	Topr	−25～+85	℃
Storage temperature	Tstg	−30～+100	℃

* 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_E	—	7.5	—	mW/sr	I_F=50mA
Forward voltage	V_F	—	1.3	1.6	V	I_F=50mA
Reverse current	I_R	—	—	10	μA	V_R=3V
Peak light emitting wavelength	λ_P	—	950	—	nm	I_F=50mA
Spectral line half width	Δλ	—	40	—	nm	I_F=50mA
Half-viewing angle	$\theta_{1/2}$	—	±15	—	deg	I_F=50mA
Response time	tr・tf	—	1.0	—	μs	I_F=50mA
Cut-off frequency	fc	—	1.0	—	MHz	I_F=50mA

●Electrical and optical characteristic curves

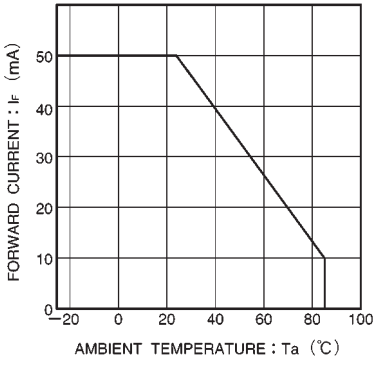


Fig.1 Forward current falloff

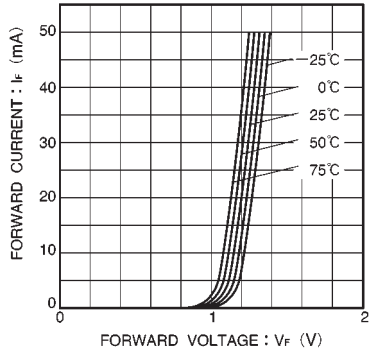


Fig.2 Forward current vs. forward voltage

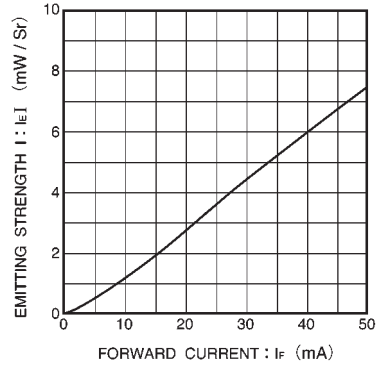


Fig.3 Emitting strength vs. forward current

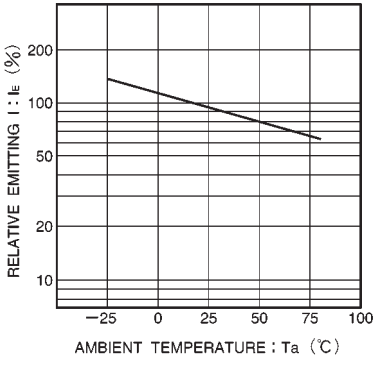


Fig. 4 Relative emitting strength vs. ambient temperature

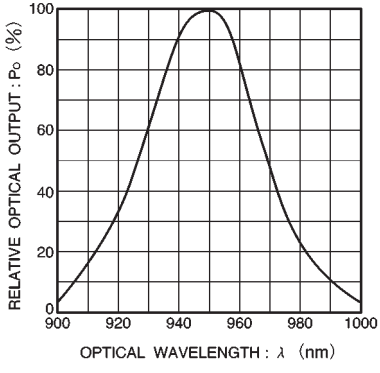


Fig.5 Wavelength

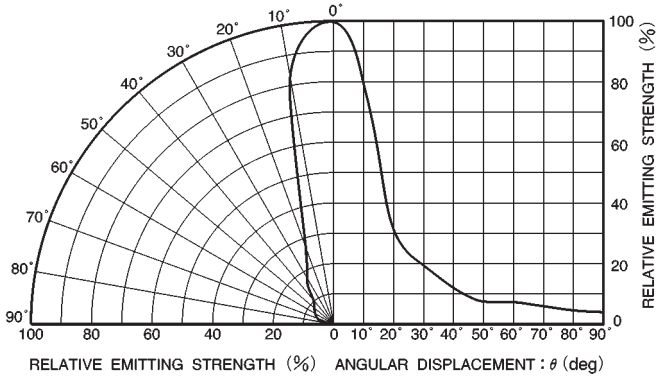


Fig. 6 Directional pattern