Infrared light emitting diode, side-view type

SIM-20ST Datasheet

The SIM-20ST is a GaAs infrared light emitting diode with a side-facing detector.

High output with ϕ1.85 lens.

●Applications

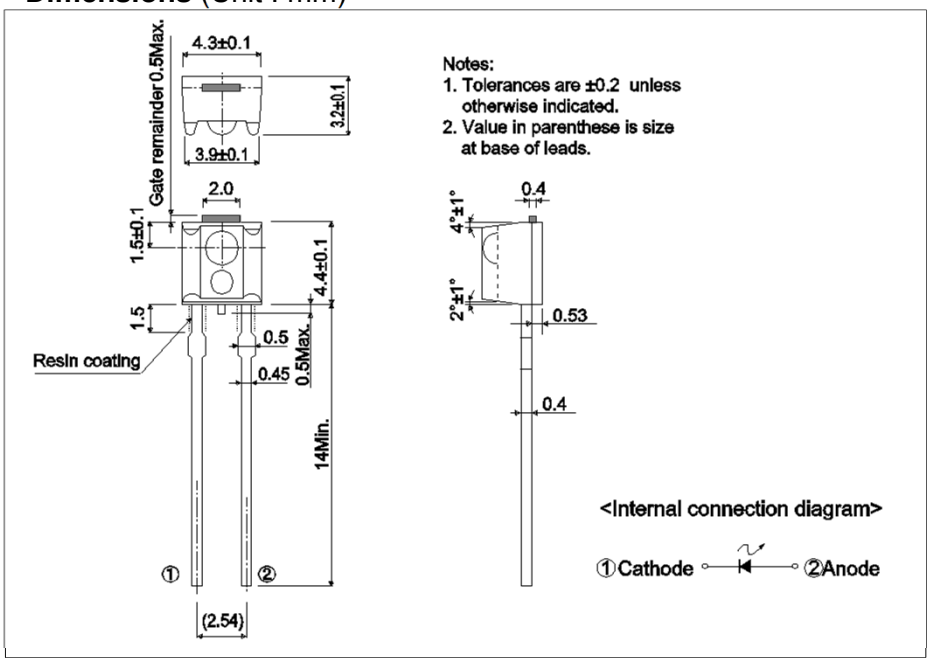
- Light source for sensors

●Outline

●Features

1) Compact package (4.4x4.3 mm) with lens.
2) High efficiency, high output P_O = 7mW (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.

●Dimensions (Unit : mm)



●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Value	Unit
Forward current	I_F	50	mA
Reverse voltage	V_R	5	V
Power dissipation	P_D	80	mW
Pulse forward current	I_{FP}*	500	mA
Operating temperature	T_{opr}	−25 to +85	°C
Storage temperature	T_{stg}	−30 to +100	°C

*Pulse width = 0.1 ms, duty ratio 1%

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

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Emitting strength	I_E	I_F =50mA	-	7.5	-	mW/sr
Forward voltage	V_F	I_F =50mA	-	1.3	1.6	V
Reverse current	I_R	V_R =3V	-	-	10	μA
Peak light emitting wavelength	λ_p	I_F =50mA	-	950	-	nm
Spectral line half width	$\Delta\lambda$	I_F =50mA	-	40	-	nm
Half-viewing angle	$\theta_{1/2}$	I_F =50mA	-	±15	-	deg
Response time	tr·tf	I_F =50mA	-	1.0	-	μs
Cut-off frequency	f_C	I_F =50mA	-	1.0	-	MHz

●Classified table of rank

Item	Emitting Strength : I_E			Unit
K	3.2	to	6.6	mW / sr
L	4.4	to	9.3	mW / sr
M	6.1	to	13.0	mW / sr

◎ Condition I_F=10mA

●Electrical and optical characteristics curves

Fig.1 Forward Current Falloff

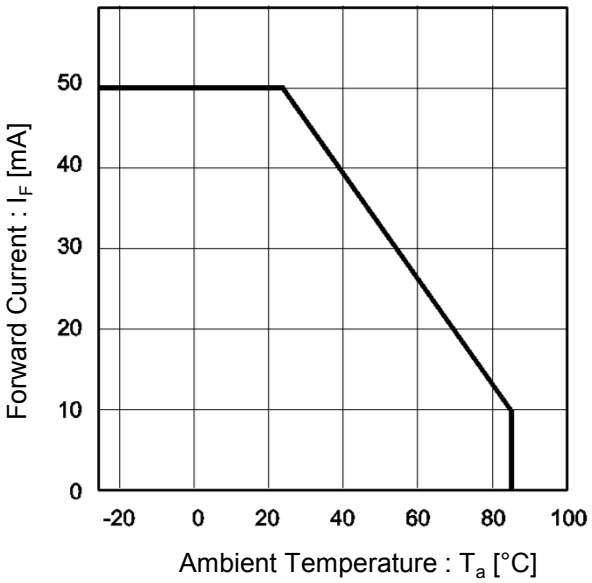


Fig.2 Forward Current vs. Forward Voltage

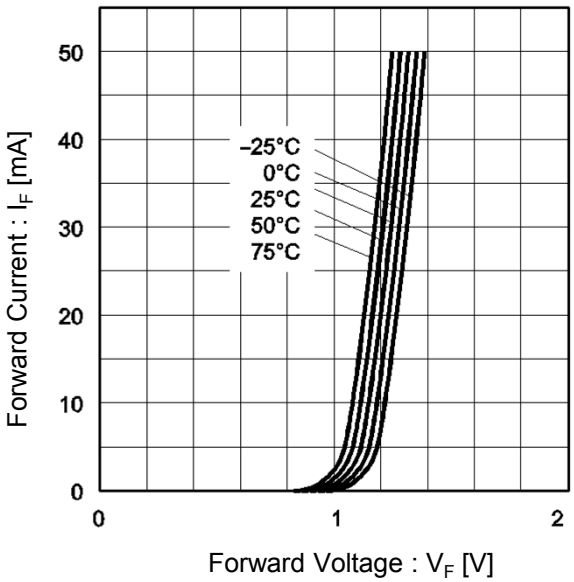


Fig.3 Emitter Strength vs. Forward Current

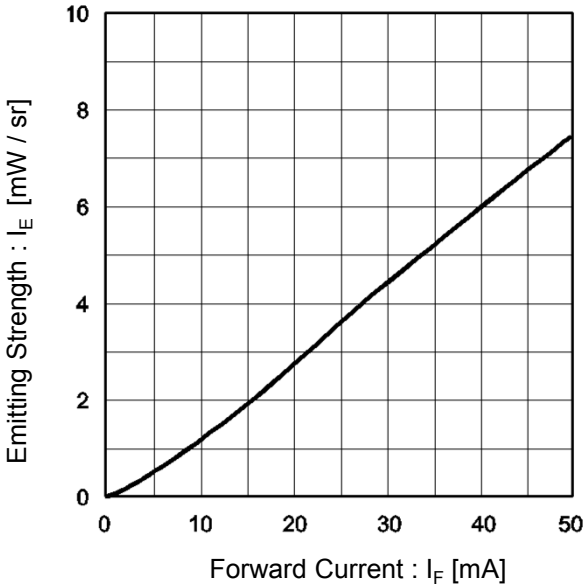
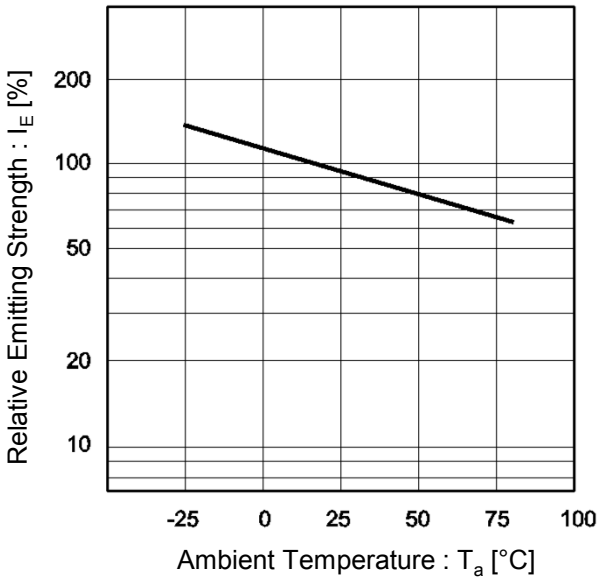


Fig.4 Relative Emitter Strength vs. Ambient Temperature



●Electrical and optical characteristics curves

Fig.5 Wavelength

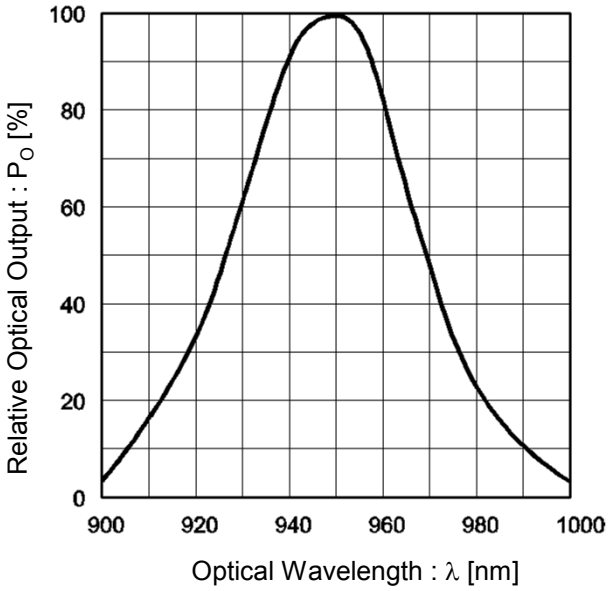
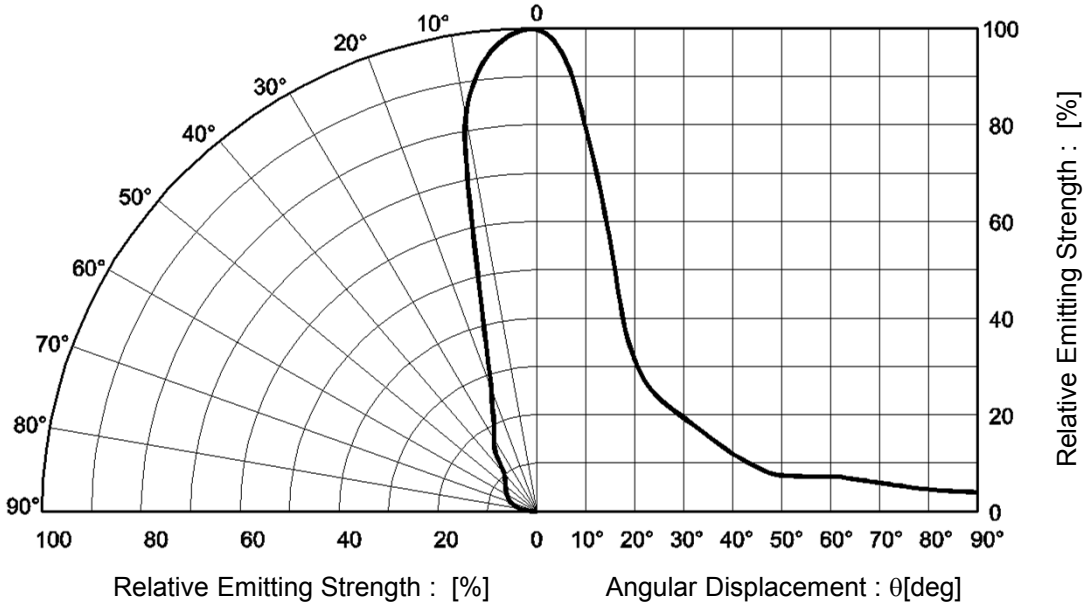


Fig.6 Directional Pattern



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