

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

High output with $\phi 1.85$ lens.

●Applications

- Light source for sensors

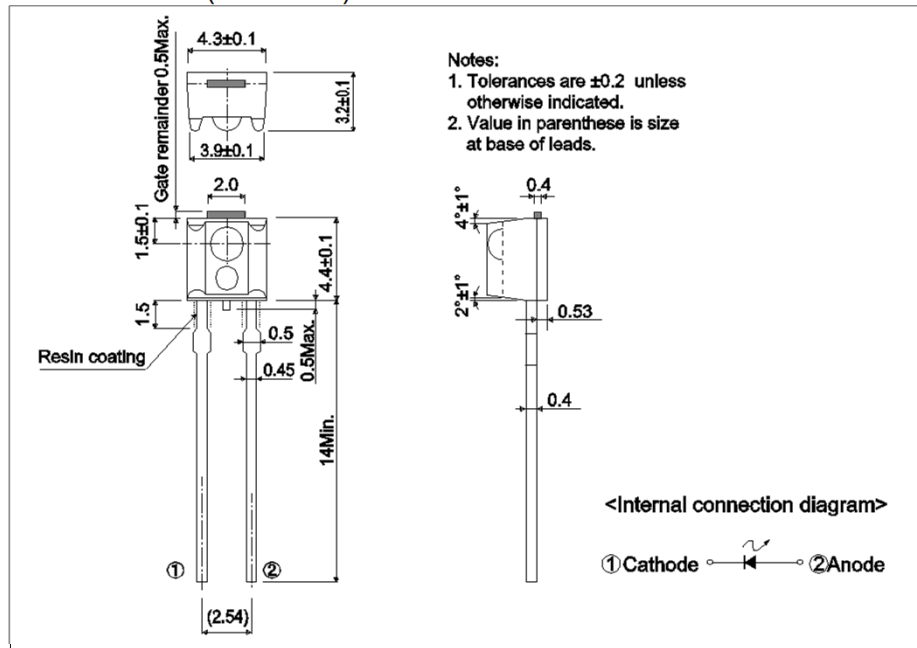
●Features

- 1) Compact package (4.4x4.3 mm) with lens.
- 2) High efficiency, high output $P_O = 7\text{mW}$ ($I_F = 50\text{ mA}$).
- 3) Emission spectrum well suited to silicon detectors ($\lambda_P = 950\text{ nm}$).
- 4) Good current-optical output linearity.
- 5) Long life, high reliability.

●Outline



●Dimensions (Unit : mm)



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

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	$^\circ\text{C}$
Storage temperature	T_{stg}	-30 to +100	$^\circ\text{C}$

*Pulse width = 0.1 ms, duty ratio 1%

●Electrical and optical characteristics ($T_a = 25^\circ\text{C}$)

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

●Electrical and optical characteristics curves

Fig.1 Forward Current Falloff

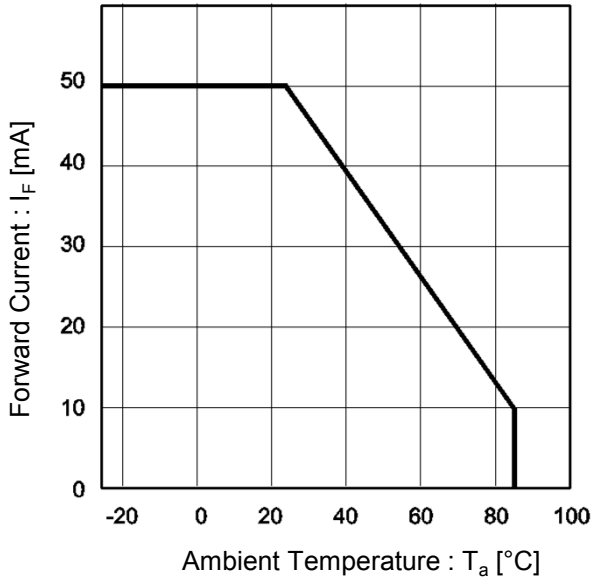


Fig.2 Forward Current vs. Forward Voltage

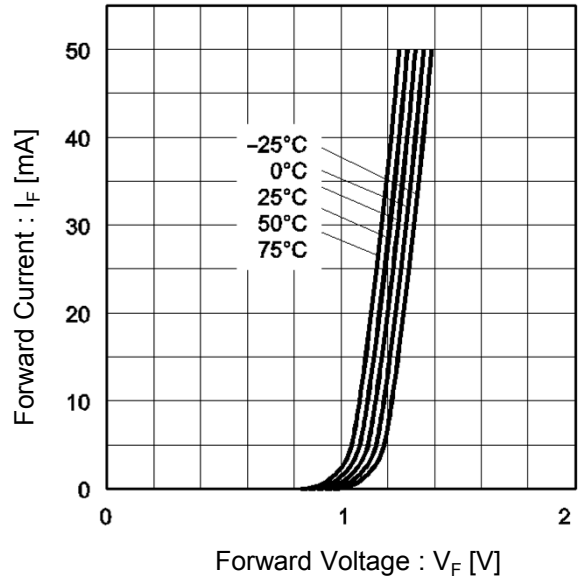


Fig.3 Emitter Strength vs. Forward Current

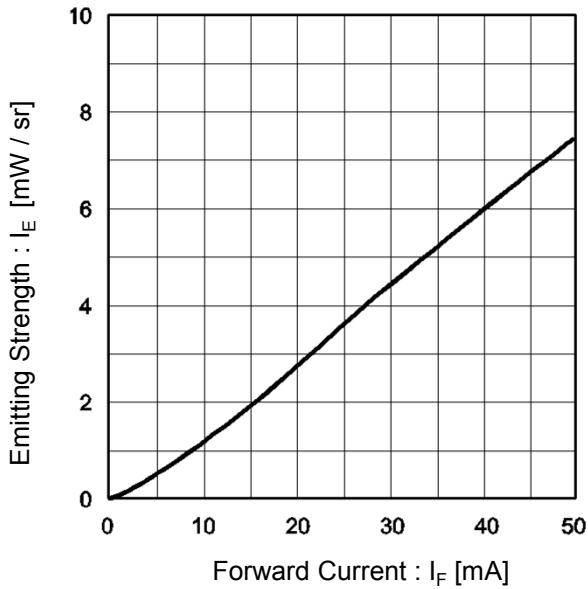
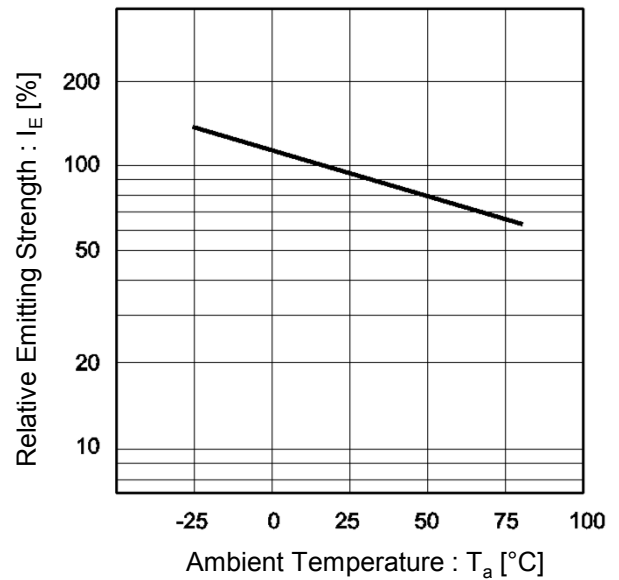


Fig.4 Relative Emitter Strength vs. Ambient Temperature



●Electrical and optical characteristics curves

Fig.5 Wavelength

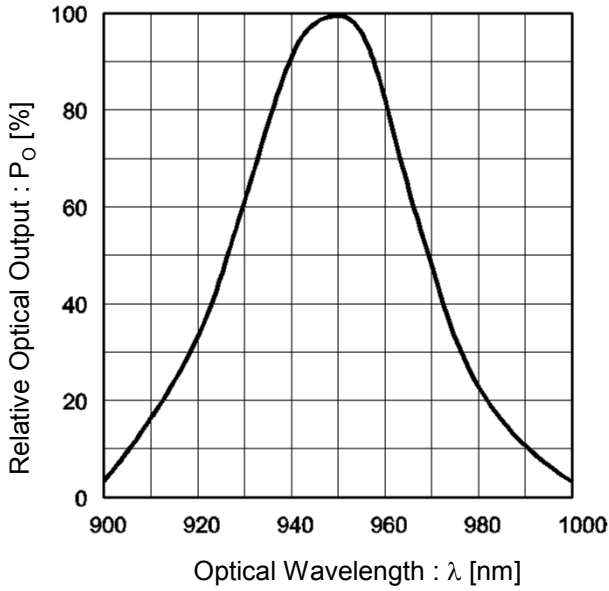
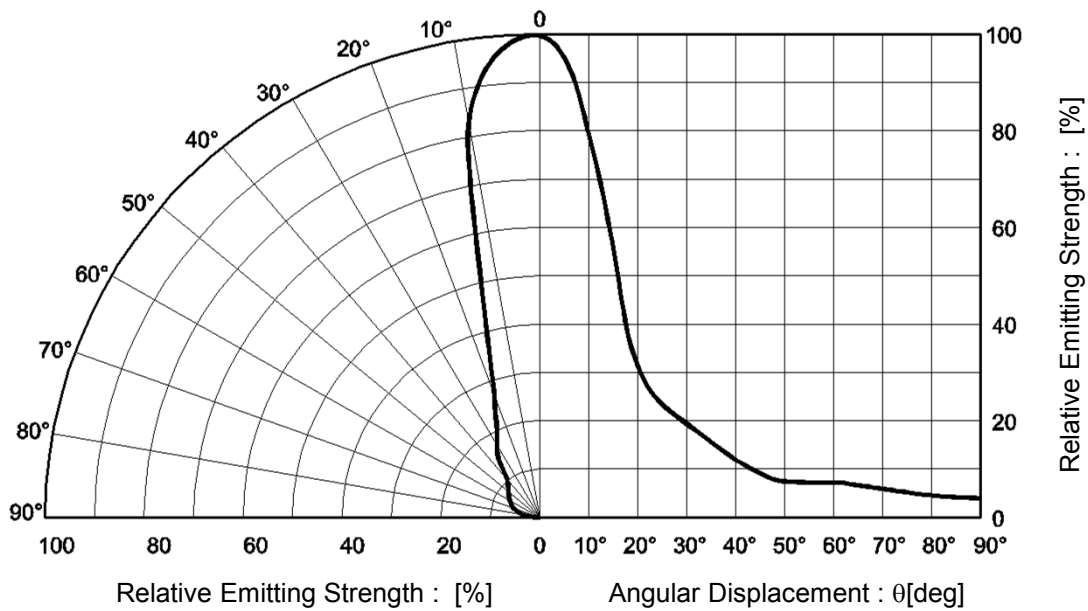


Fig.6 Directional Pattern



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