

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

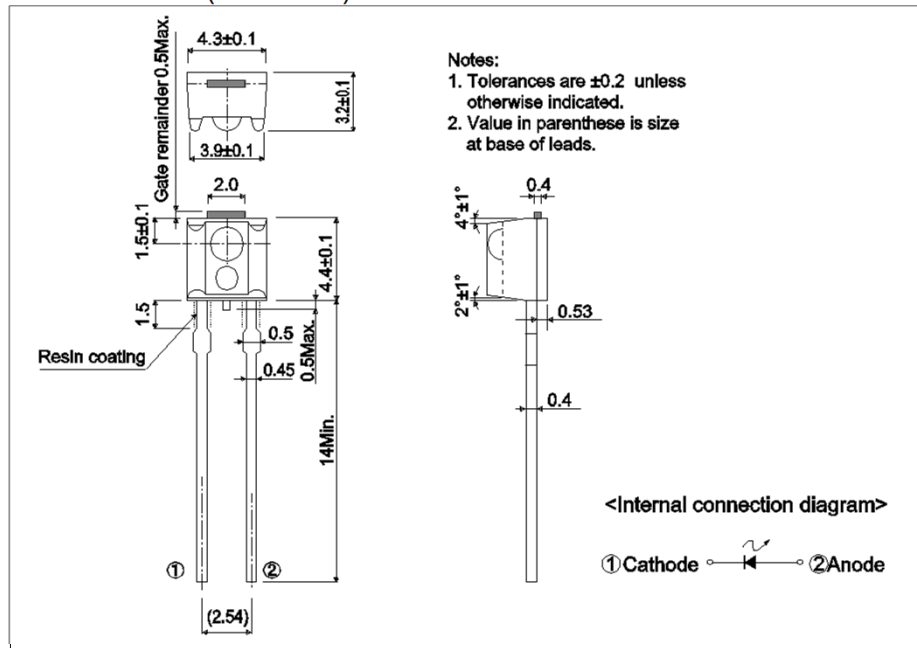
### ●Features

- 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	°C
Storage temperature	$T_{stg}$	-30 to +100	°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	$\mu\text{A}$
Peak light emitting wavelength	$\lambda_p$	$I_F = 50\text{mA}$	-	950	-	nm
Spectral line half width	$\Delta\lambda$	$I_F = 50\text{mA}$	-	40	-	nm
Half-viewing angle	$\theta_{1/2}$	$I_F = 50\text{mA}$	-	$\pm 15$	-	deg
Response time	$tr \cdot tf$	$I_F = 50\text{mA}$	-	1.0	-	$\mu\text{s}$
Cut-off frequency	$f_C$	$I_F = 50\text{mA}$	-	1.0	-	MHz

●Electrical and optical characteristics curves

Fig.1 Forward Current Falloff

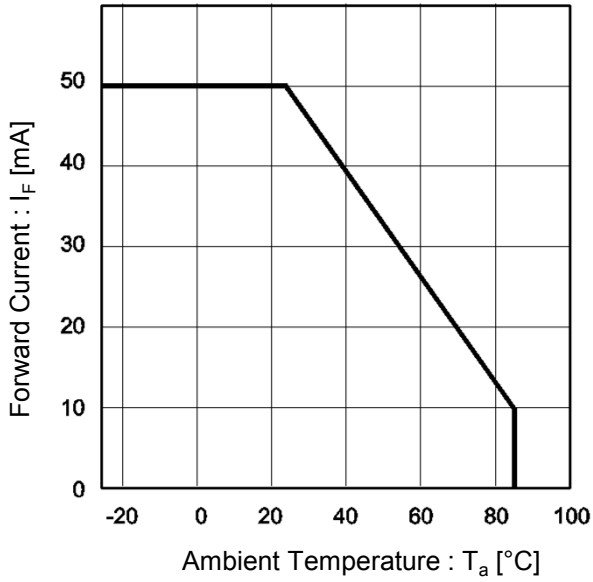


Fig.2 Forward Current vs. Forward Voltage

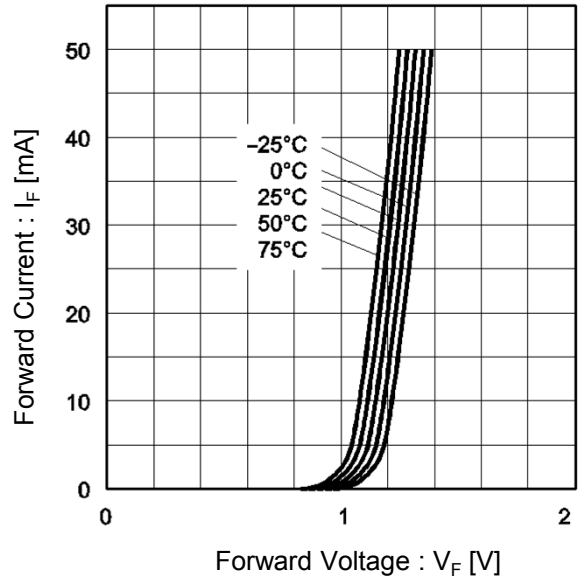


Fig.3 Emitter Strength vs. Forward Current

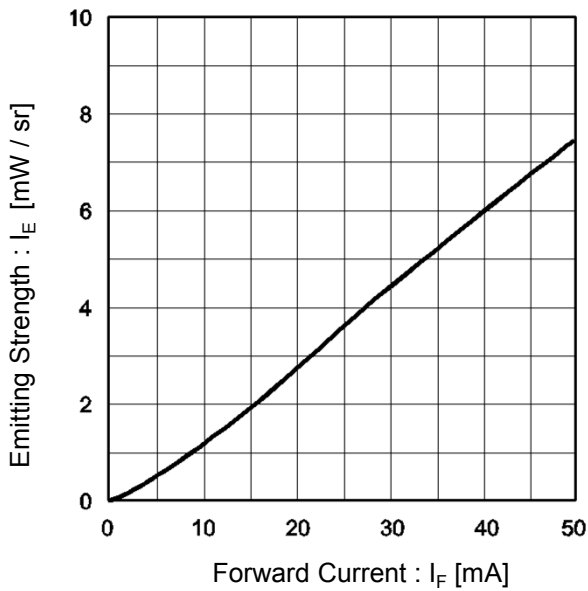
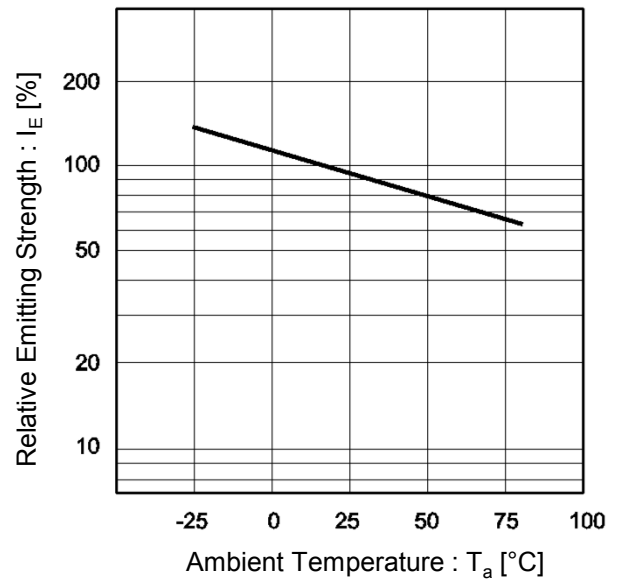


Fig.4 Relative Emitter Strength vs. Ambient Temperature



●Electrical and optical characteristics curves

Fig.5 Wavelength

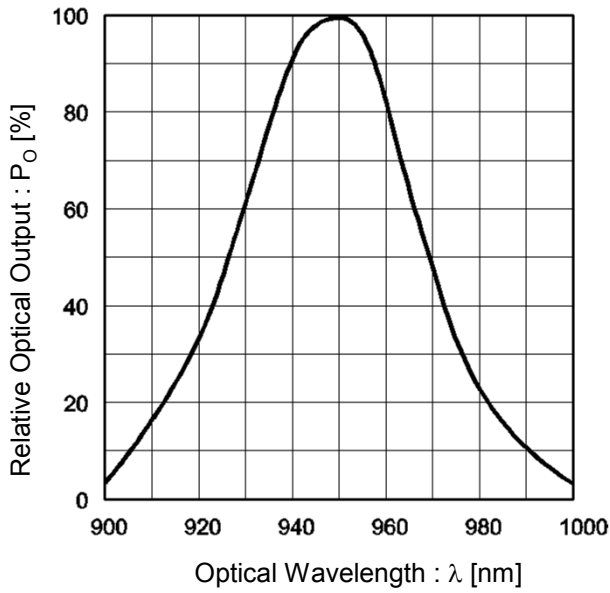
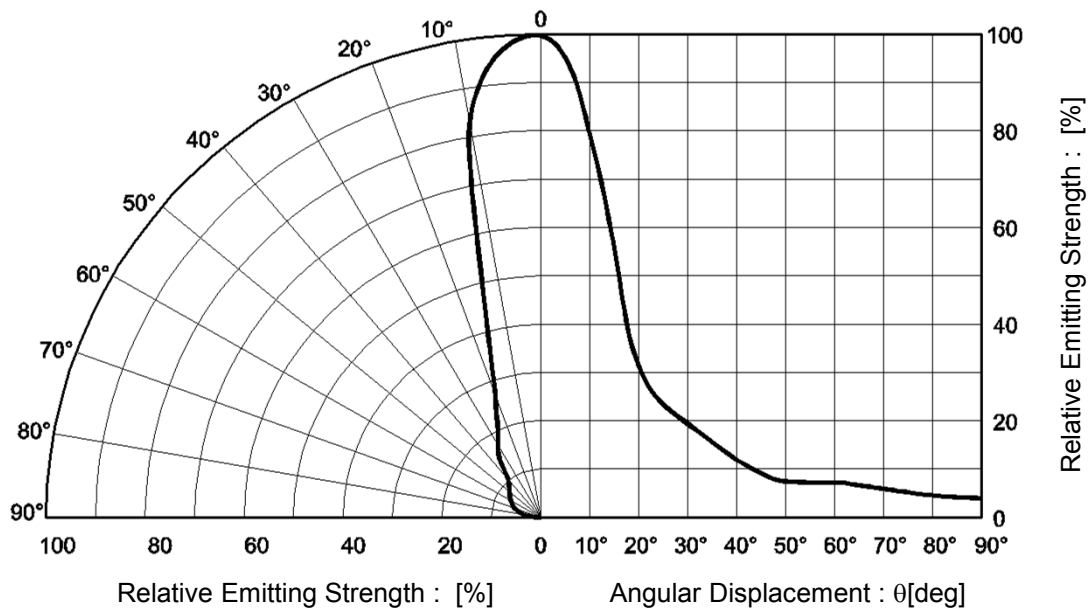


Fig.6 Directional Pattern



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