

The SIR-34ST3F is a GaAs infrared light emitting diode housed in clear plastic.

This device has a high luminous efficiency and a 950nm spectrum suitable for silicon detectors. It is small and at the same time has a wide radiation angle, marking it ideal for compact optical control equipment.

### ●Applications

- Optical control equipment
- Light source for remote control devices

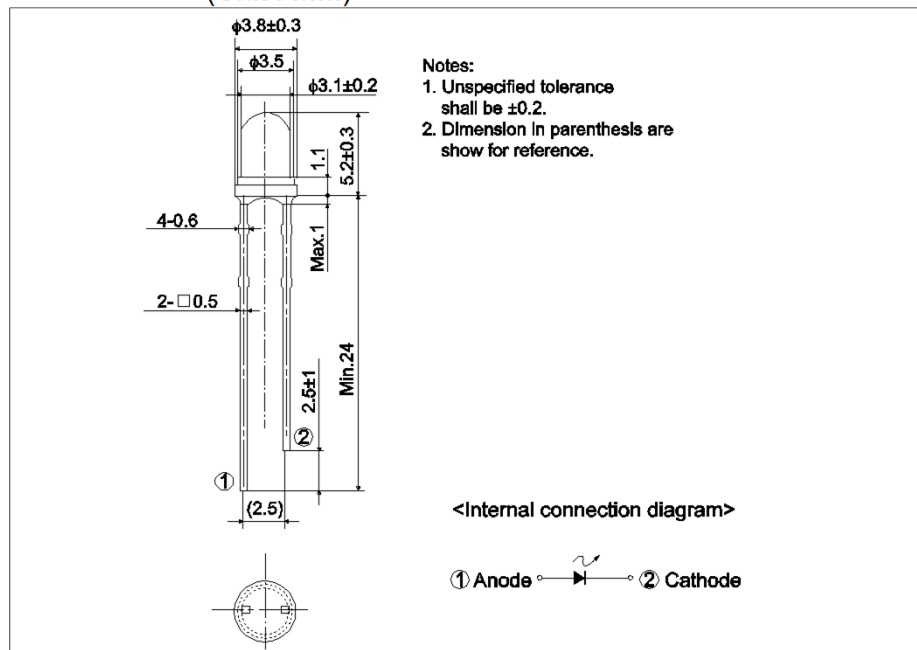
### ●Features

- 1) Compact ( $\phi 3.1\text{mm}$ ).
- 2) High efficiency, high output  $P_O=8.0\text{mW}$  ( $I_F=50\text{mA}$ ).
- 3) Wide radiation angle  $\theta=27^\circ$ .
- 4) Emission spectrum well suited to silicon detectors ( $\lambda_P=950\text{nm}$ ).
- 5) Good current-optical output linearity.
- 6) Long life, high reliability.

### ●Outline



### ●Dimensions (Unit : mm)



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

Parameter	Symbol	Value	Unit
Forward current	$I_F$	100	mA
Reverse voltage	$V_R$	5	V
Power dissipation	$P_D$	160	mW
Pulse forward current	$I_{FP}^*$	500	mA
Operating temperature	$T_{opr}$	-25 to +85	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-40 to +85	$^\circ\text{C}$

\*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.	
Optical output	$P_O$	$I_F = 50\text{mA}$	-	8.0	-	mW
Emitting strength	$I_E$	$I_F = 50\text{mA}$	3.5	-	17.6	mW/sr
Forward voltage	$V_F$	$I_F = 100\text{mA}$	-	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	$\theta_{1/2}$	$I_F = 50\text{mA}$	-	$\pm 27$	-	deg
Response time	$t_r \cdot t_f$	$I_F = 50\text{mA}$	-	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

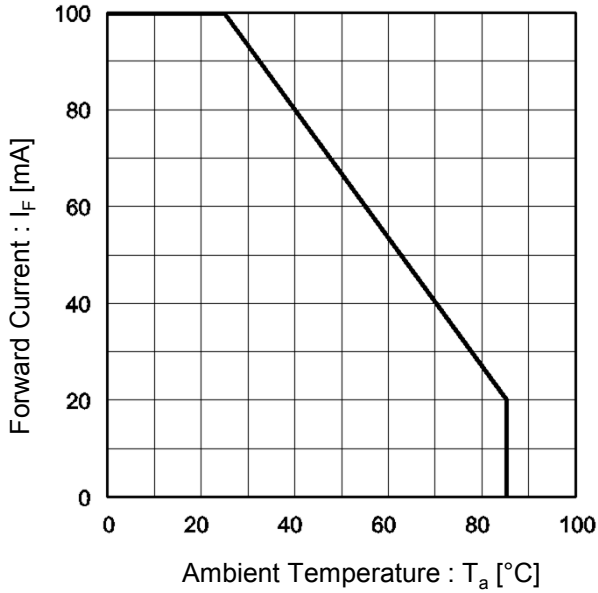


Fig.2 Forward Current vs. Forward Voltage

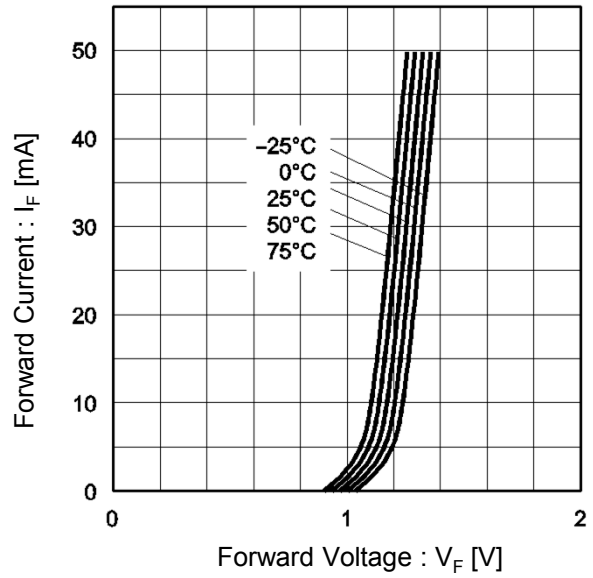


Fig.3 Wavelength

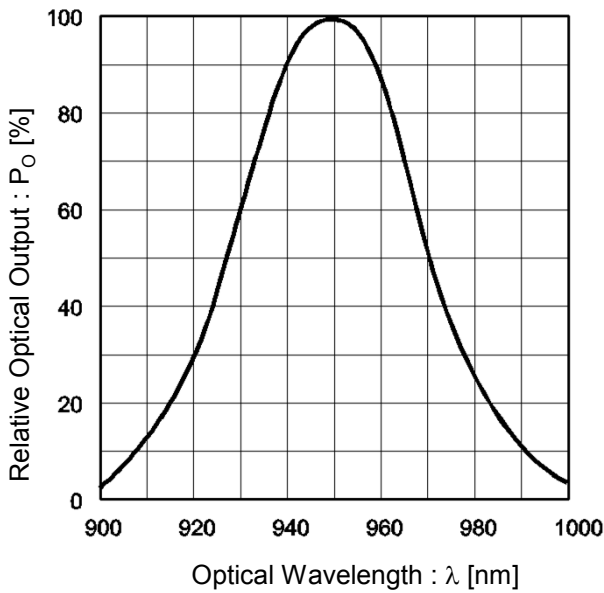
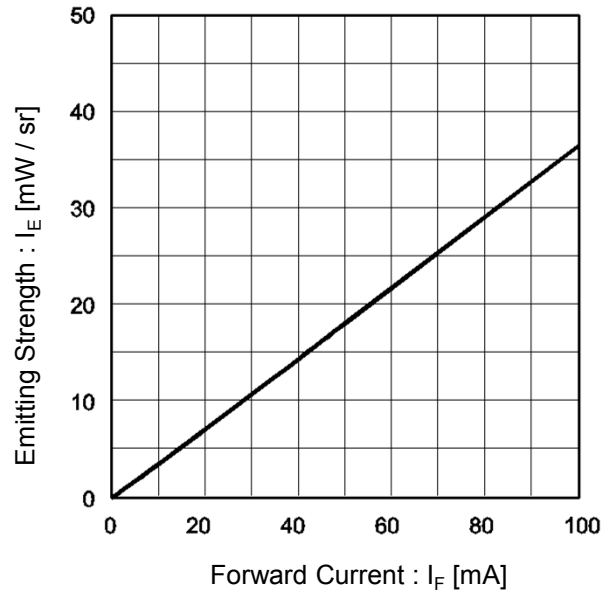


Fig.4 Emitting Strength vs. Forward Current



●Electrical and optical characteristics curves

Fig.5 Relative Emitter Strength vs. Ambient Temperature

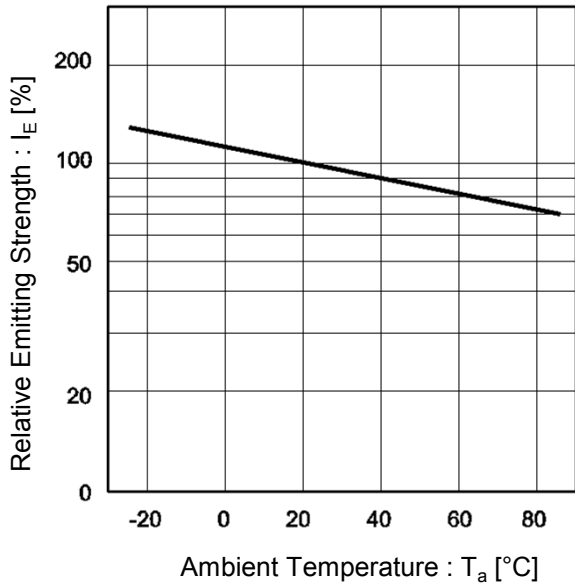
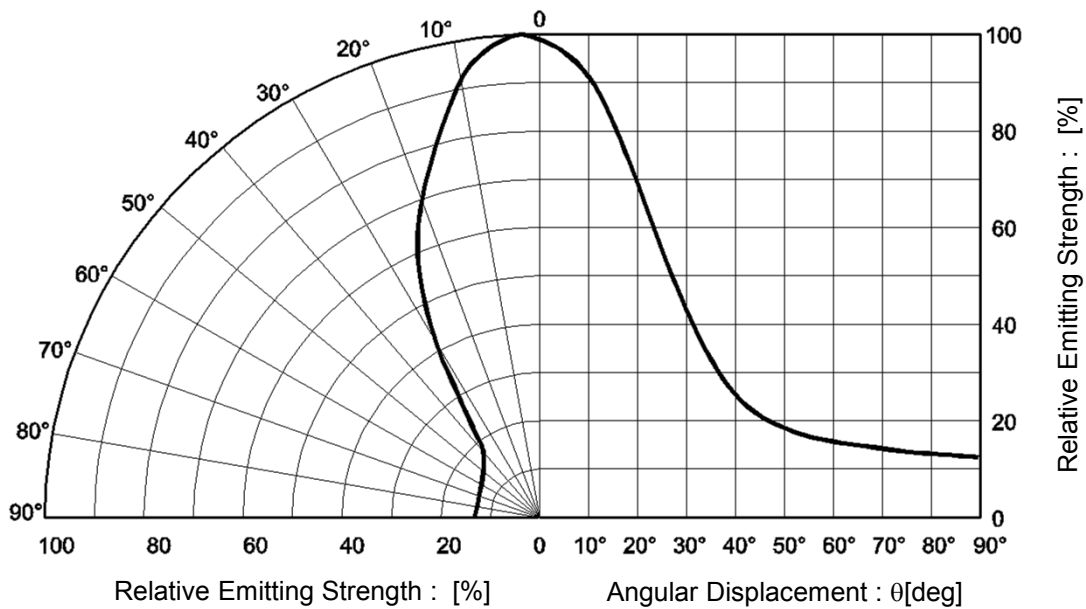


Fig.6 Directional Pattern



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