

The SIR-563ST3F is a GaAs infrared light emitting diode housed in clear plastic.

This device has a high luminous efficiency and a 940nm peak wavelength suitable for silicon detectors.

It has a wide radiation angle and is ideal for compact optical control equipment.

### ●Applications

- Optical control equipment
- Light source for remote control devices

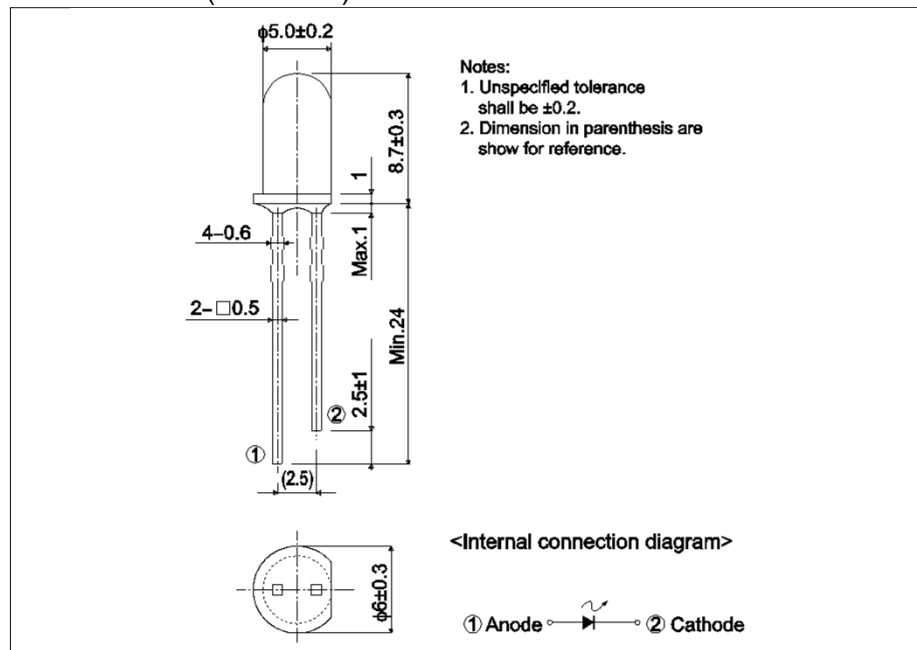
### ●Features

- 1) High efficiency, high output  $P_O=11.0\text{mW}$  ( $I_F=50\text{mA}$ ).
- 2) Wide radiation angle  $\theta_{1/2}=15\text{deg}$ .
- 3) Emission spectrum well suited to silicon detectors ( $\lambda_p=940\text{nm}$ ).
- 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	$I_F$	100	mA
Reverse voltage	$V_R$	5.0	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 msec, duty ratio 1%

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

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Optical output	$P_O$	$I_F = 50\text{mA}$	-	11	-	mW
Emitting strength	$I_E$	$I_F = 50\text{mA}$	8.2	21	-	mW/sr
Forward voltage	$V_F$	$I_F = 50\text{mA}$	-	1.34	1.6	V
Reverse current	$I_R$	$V_R = 3\text{V}$	-	-	10	$\mu\text{A}$
Peak light emitting wavelength	$\lambda_p$	$I_F = 50\text{mA}$	-	940	-	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·tf	$I_F = 50\text{mA}$	-	1.0	-	$\mu\text{s}$
Cut-off frequency	$f_C$	$I_F = 50\text{mA}$	-	1.0	-	MHz

●Classified table of rank

Item	Emitting Strength : $I_E$	Unit
M	8.2 to 17.6	mW / sr
N	12.3 to 25.8	mW / sr
P	18.0 to 38.8	mW / sr
Q	27.1 to 55.3	mW / sr

◎ Condition  $I_F = 50\text{mA}$

●Electrical and optical characteristics curves

Fig.1 Forward Current Falloff

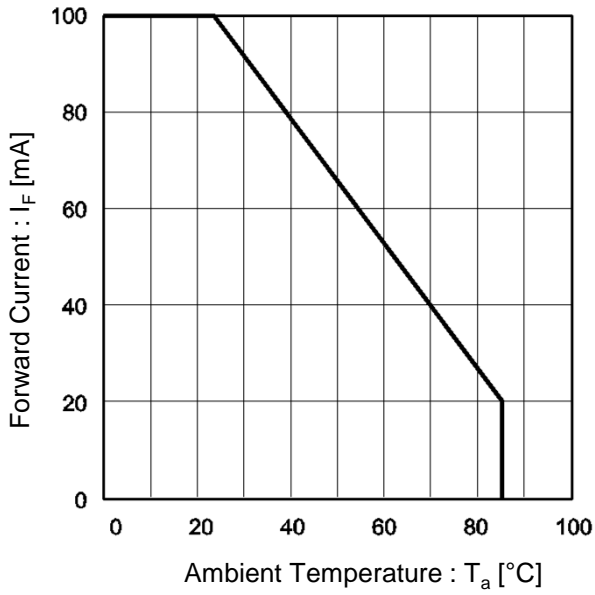


Fig.2 Forward Current vs. Forward Voltage

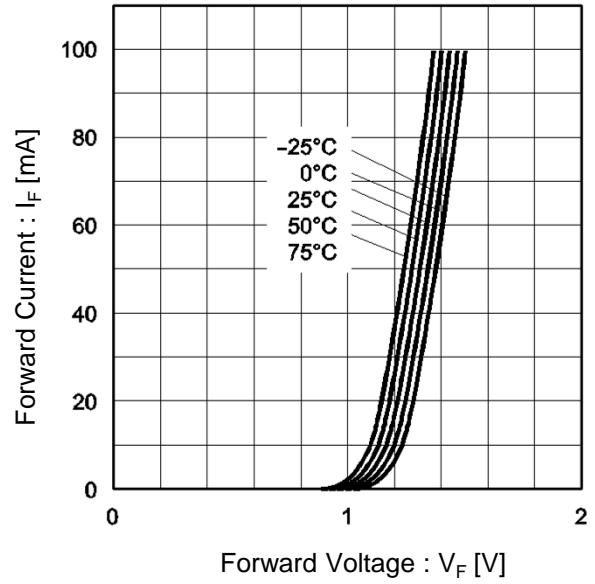


Fig.3 Wavelength

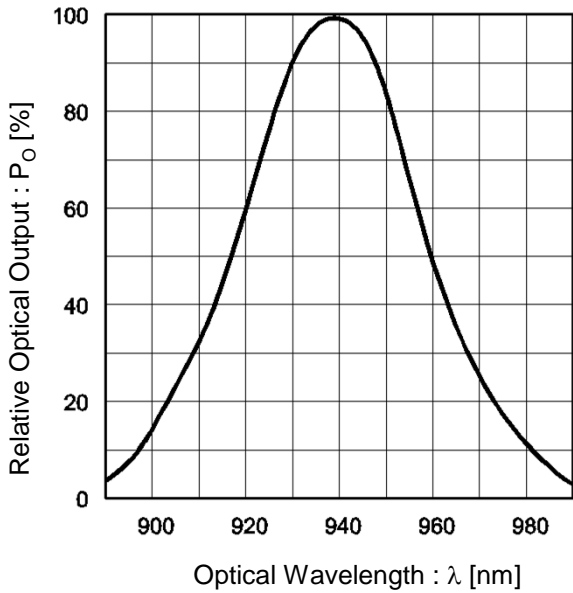
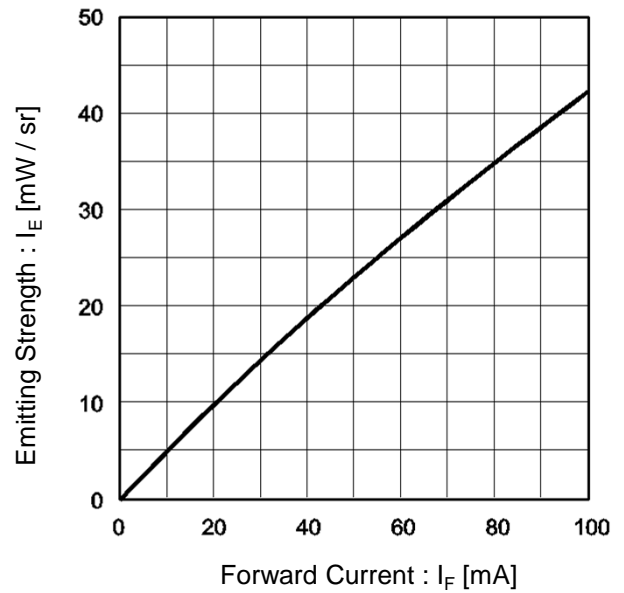


Fig.4 Emitting Strength vs. Forward Current



●Electrical and optical characteristics curves

Fig.5 Relative Emitter Strength vs. Ambient Temperature

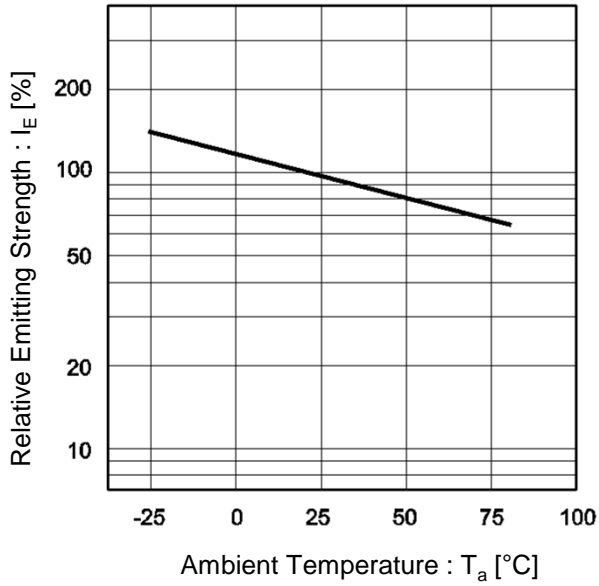
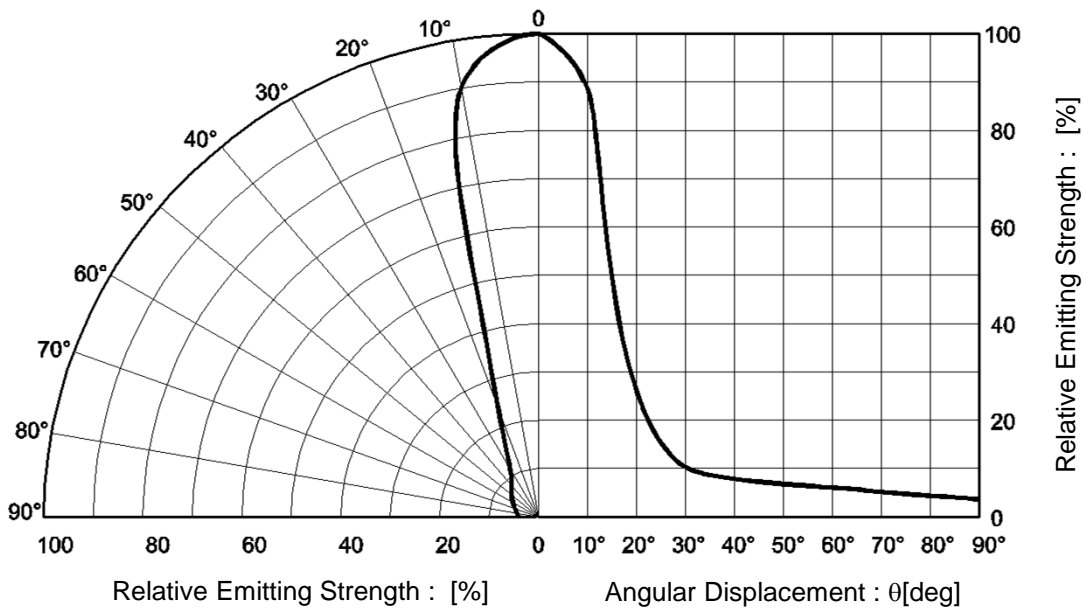


Fig.6 Directional Pattern



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