

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

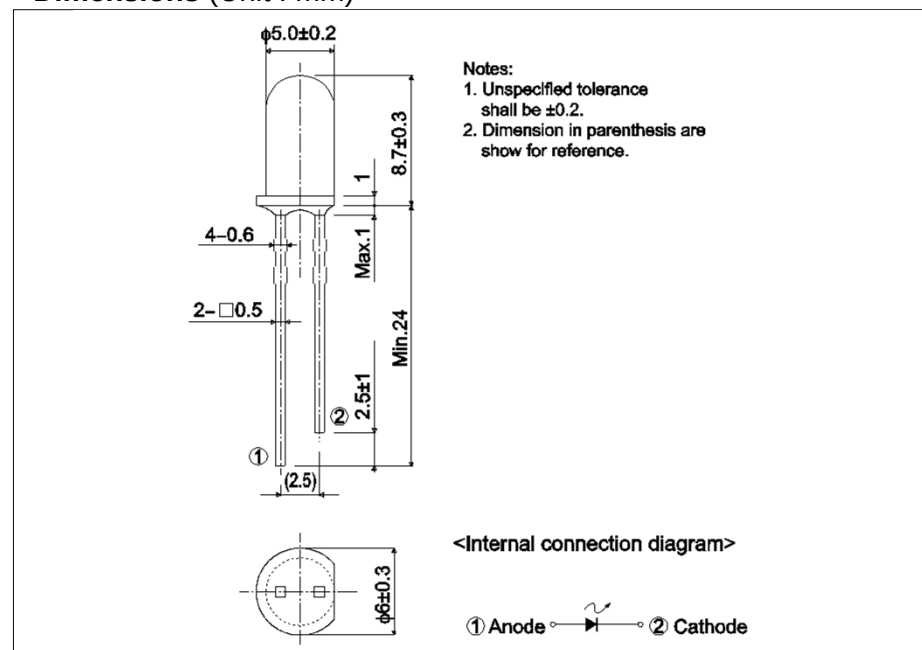
●Features

- 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	μA
Peak light emitting wavelength	λ_p	$I_F = 50\text{mA}$	-	940	-	nm
Spectral line half width	$\Delta\lambda$	$I_F = 50\text{mA}$	-	40	-	nm
Half-viewing angle	$\theta_{1/2}$	$I_F = 50\text{mA}$	-	± 15	-	deg
Response time	$t_r \cdot t_f$	$I_F = 50\text{mA}$	-	1.0	-	μs
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

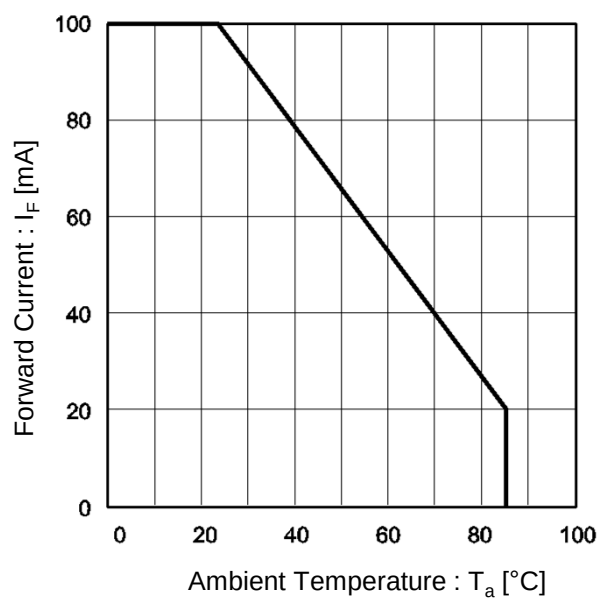


Fig.2 Forward Current vs. Forward Voltage

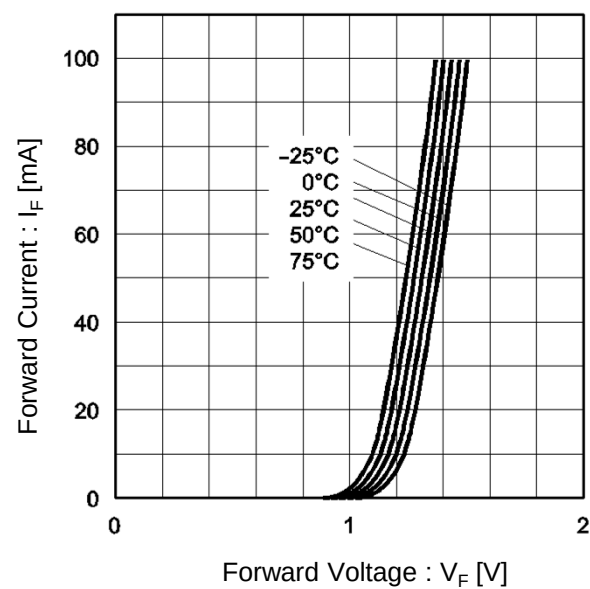


Fig.3 Wavelength

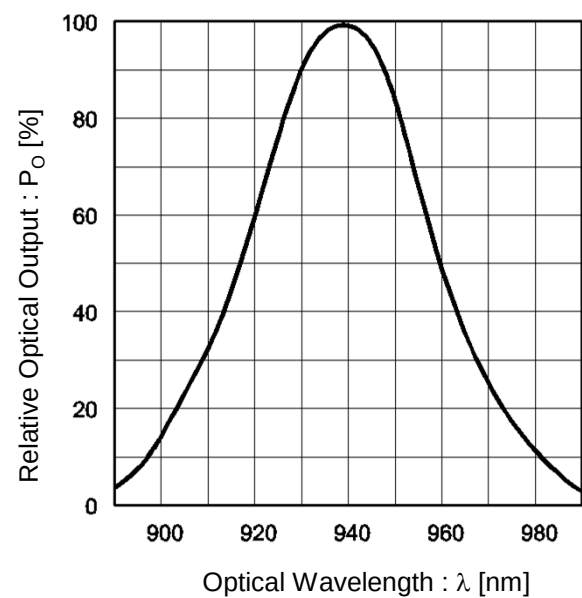
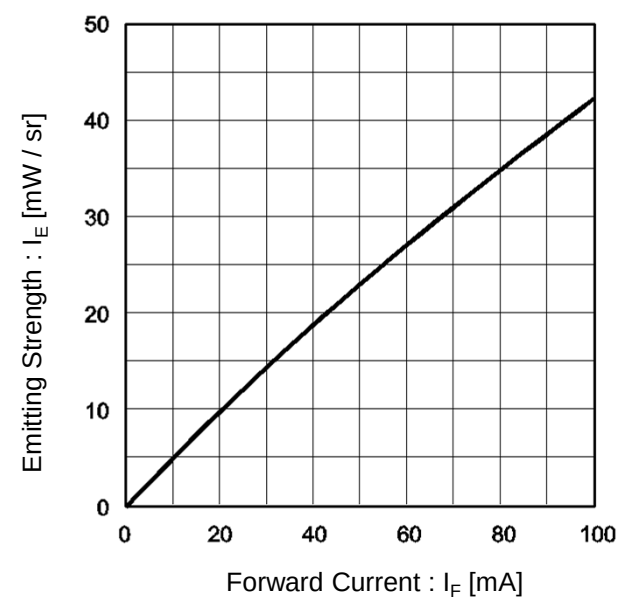


Fig.4 Emitting Strength vs. Forward Current



●Electrical and optical characteristics curves

Fig.5 Relative Emitter Strength vs. Ambient Temperature

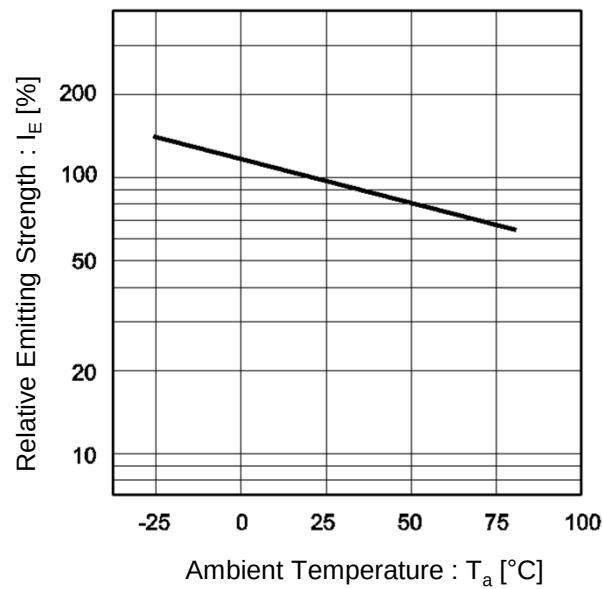
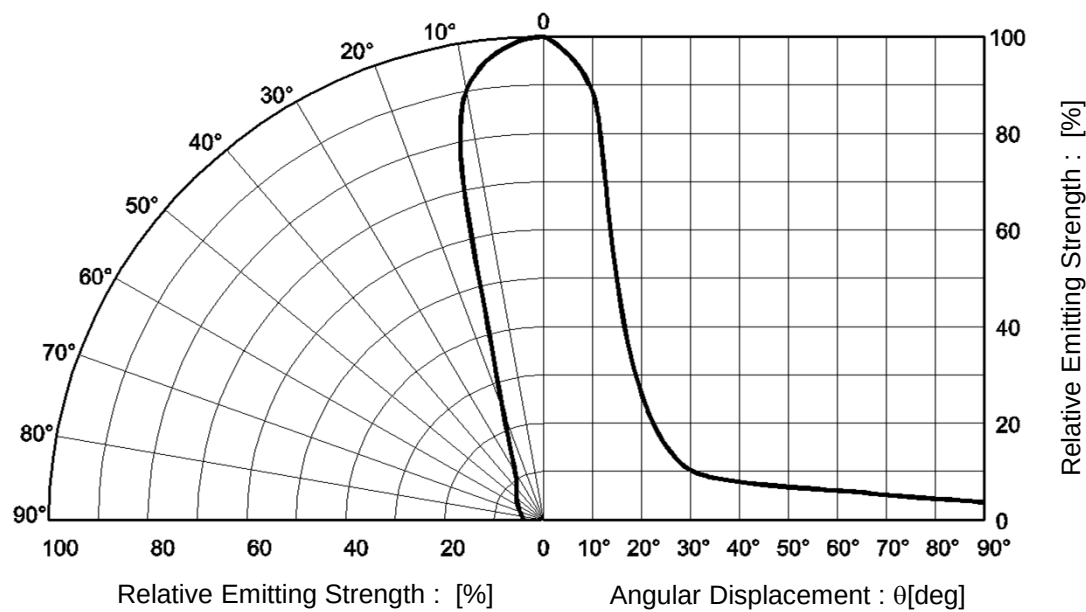


Fig.6 Directional Pattern



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