Infrared light emitting diode, top view type

SIR-563ST3F Datasheet

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

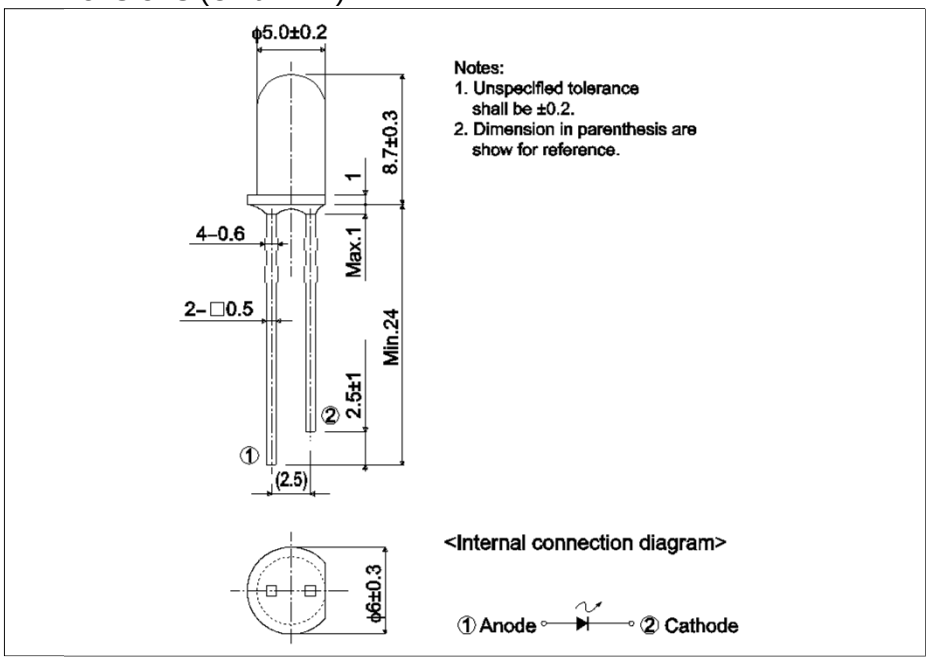
- Optical control equipment
- Light source for remote control devices

●Outline

●Features

1) High efficiency, high output P_O=11.0mW (I_F=50mA).
2) Wide radiation angle θ1/2=15deg.
3) Emission spectrum well suited to silicon detectors (λ_P=940nm).
4) Good current-optical output linearity.
5) Long life, high reliability.

●Dimensions (Unit : mm)



●Absolute maximum ratings (T_a = 25°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	°C
Storage temperature	T_{stg}	−40 to +85	°C

*Pulse width = 0.1 msec, duty ratio 1%

●Electrical and optical characteristics (T_a = 25°C)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Optical output	P_O	I_F =50mA	-	11	-	mW
Emitting strength	I_E	I_F =50mA	8.2	21	-	mW/sr
Forward voltage	V_F	I_F =50mA	-	1.34	1.6	V
Reverse current	I_R	V_R =3V	-	-	10	μA
Peak light emitting wavelength	λ_p	I_F =50mA	-	940	-	nm
Spectral line half width	$\Delta\lambda$	I_F =50mA	-	40	-	nm
Half-viewing angle	$\theta_{1/2}$	I_F =50mA	-	±15	-	deg
Response time	tr·tf	I_F =50mA	-	1.0	-	μs
Cut-off frequency	f_C	I_F =50mA	-	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=50mA

●Electrical and optical characteristics curves

Fig.1 Forward Current Falloff

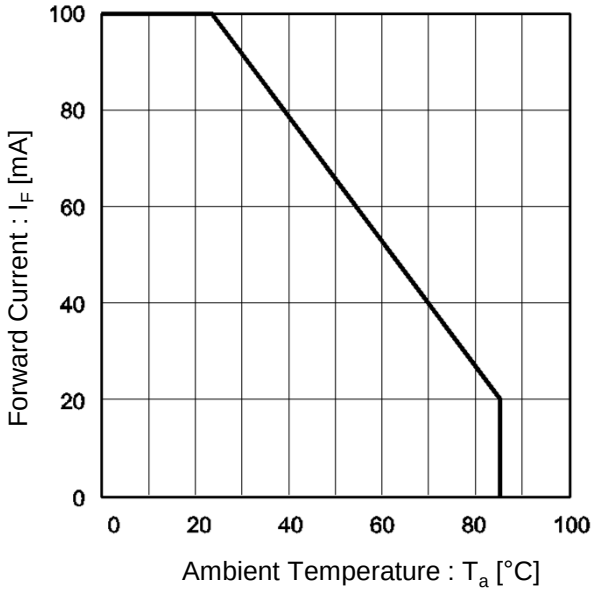


Fig.2 Forward Current vs. Forward Voltage

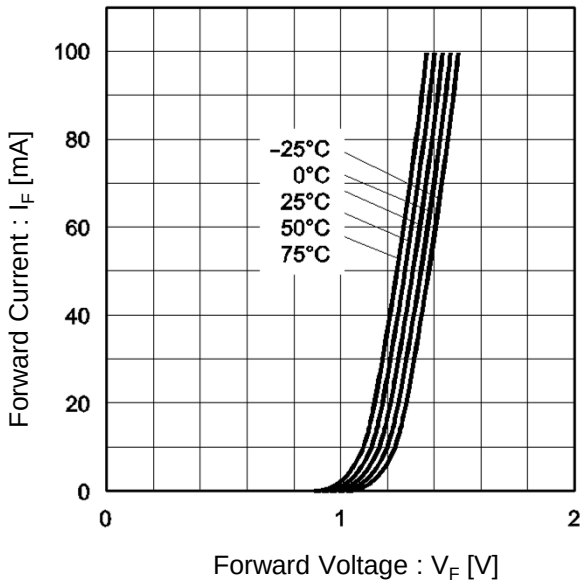


Fig.3 Wavelength

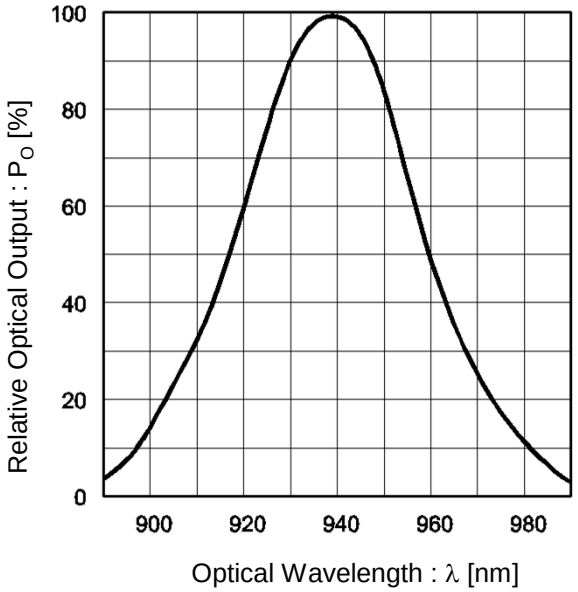
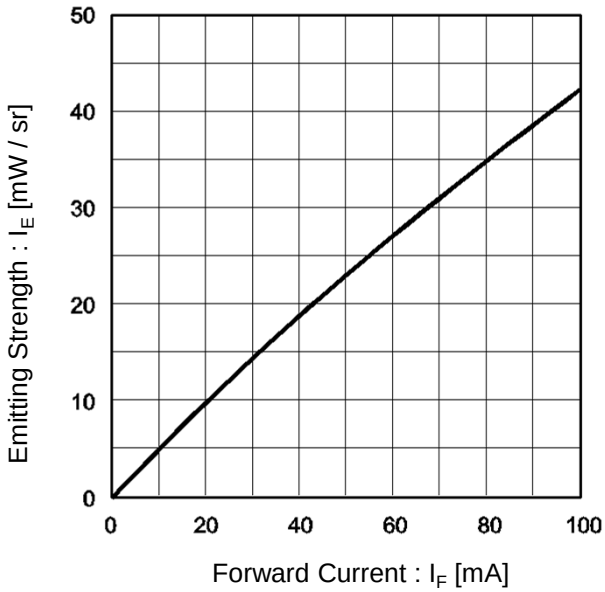


Fig.4 Emitting Strength vs. Forward Current



●Electrical and optical characteristics curves

Fig.5 Relative Emitter Strength
vs. Ambient Temperature

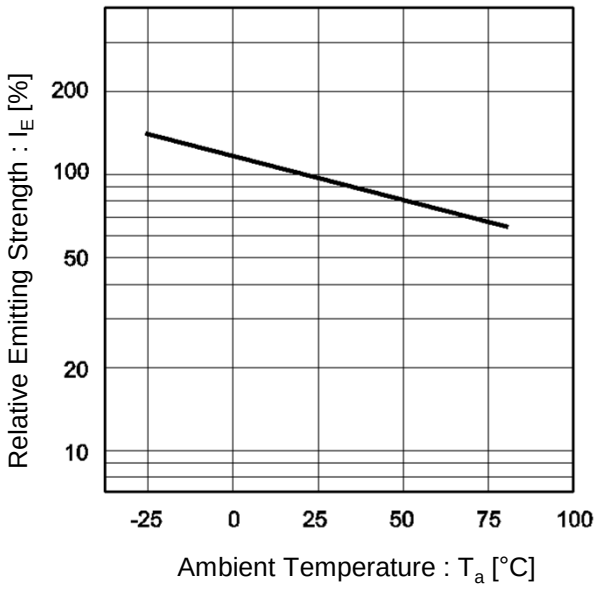
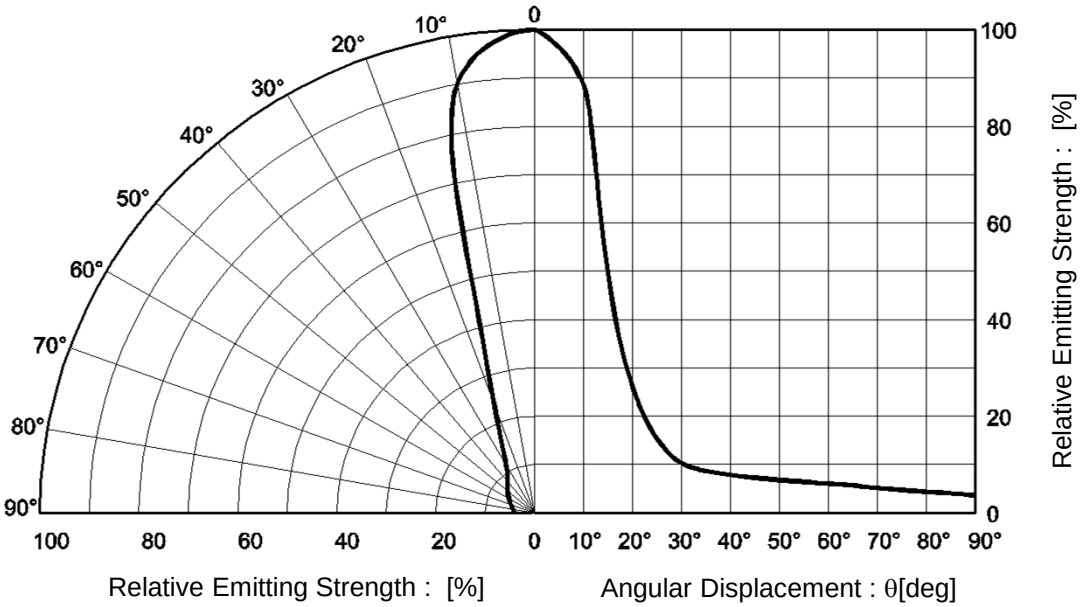


Fig.6 Directional Pattern



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