Infrared light emitting diode, top view type

SIR-563ST3F

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.

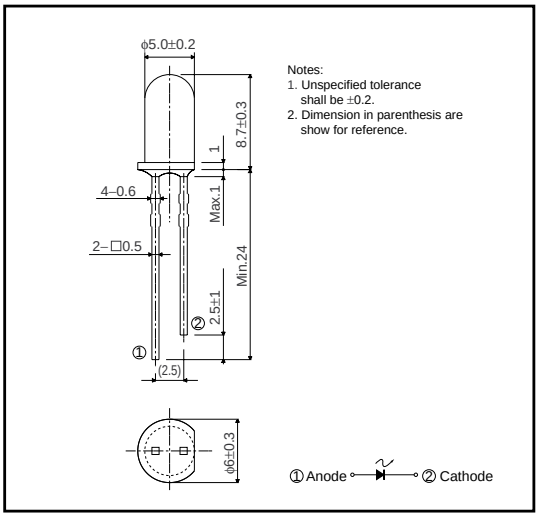
●Applications

Optical control equipment
Light source for remote control devices

●Features

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

●Dimensions (Unit : mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	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}*	0.5	A
Operating temperature	Topr	−25 to +85	°C
Storage temperature	Tstg	−40 to +85	°C

* Pulse width=0.1msec, duty ratio 1%

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Optical output	P_O	–	11	–	mW	I_F=50mA
Emitting strength	I_E	9.0	21	–	mW/sr	I_F=50mA
Forward voltage	V_F	–	1.34	1.6	V	I_F=50mA
Reverse current	I_R	–	–	10	μA	V_R=3V
Peak light emitting wavelength	λ_P	–	940	–	nm	I_F=50mA
Spectral line half width	$\Delta\lambda$	–	40	–	nm	I_F=50mA
Half-viewing angle	$\theta_{1/2}$	–	±15	–	deg	I_F=50mA
Pesponse time	tr·tf	–	1.0	–	μs	I_F=50mA
Cut-off frequency	f_C	–	1.0	–	MHz	I_F=50mA

●Electrical and optical characteristic curves

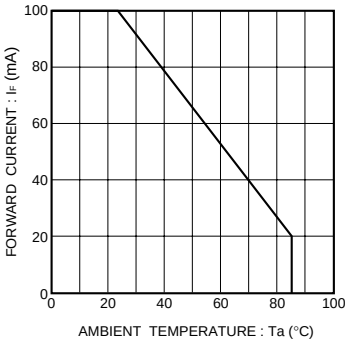


Fig.1 Forward current

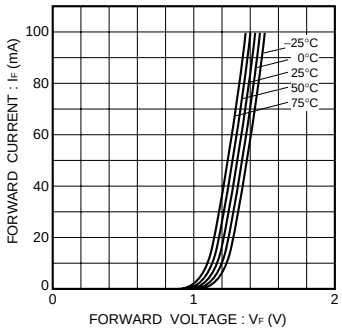


Fig.2 Forward current vs. forward voltage

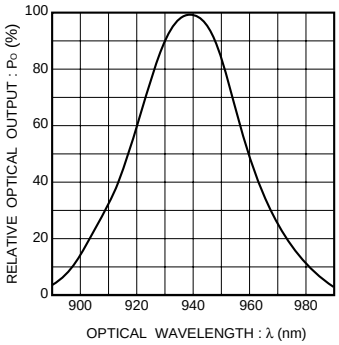


Fig.3 Wavelength

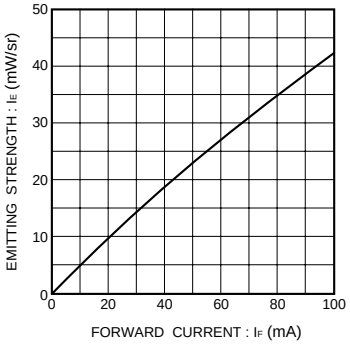


Fig.4 Emitting strength vs. forward current

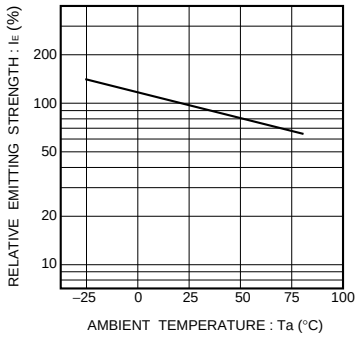


Fig.5 Relative emitting strength vs. ambient temperature

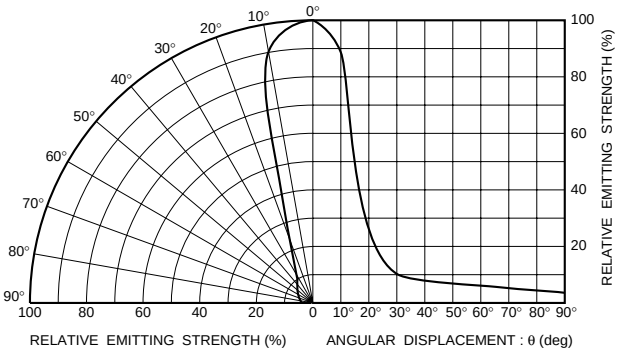


Fig.6 Directional pattern

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