Infrared light emitting diode, top view type

SIR-56ST3F

The SIR-56ST3F 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. Low cost make it an ideal light source for household remote control devices.

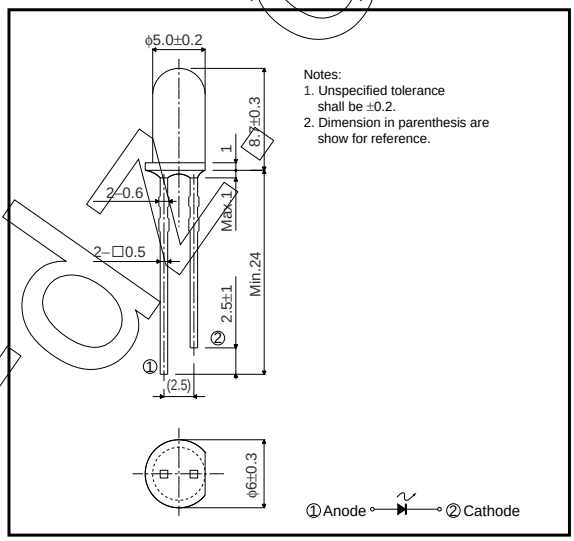
●Applications

Optical control equipment
Light source for remote control devices

●Features

1) High efficiency, high output P_O=8.0mW (I_F=50mA).
2) Emission spectrum well suited to silicon detectors.
3) Good current-optical output linearity.
4) Long life, high reliability.

●External dimensions (Units : mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Forward current	I_F	100	mA
Reverse voltage	V_R	5	V
Power dissipation	P_D	160	mW
Pulse forward current	I_{FP}*	1.0	A
Operating temperature	Topr	−25~+85	°C
Storage temperature	Tstg	−40~+85	°C

* Pulse width=0.1msec, duty ratio 1%

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Optical output	P_O	–	8.0	–	mW	I_F=50mA
Emitting strength	I_E	5.6	–	–	mW/sr	I_F=50mA
Forward voltage	V_F	–	1.3	1.6	V	I_F=100mA
Reverse current	I_R	–	–	10	μA	V_R=3V
Peak light emitting wavelength	λ_P	–	950	–	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

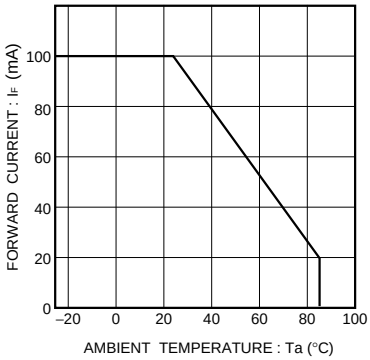

Fig.1 Forward current falloff

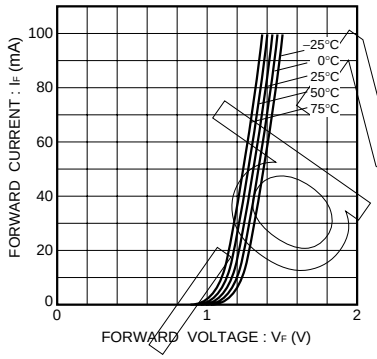

Fig.2 Forward current vs. forward voltage

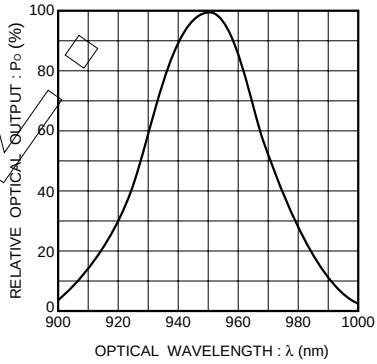

Fig.3 Wavelength

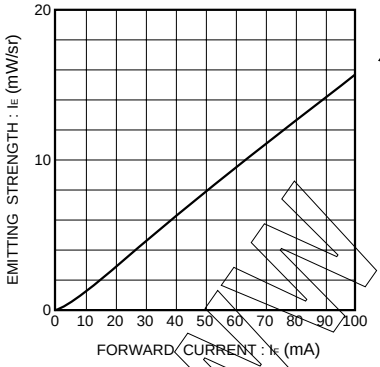

Fig.4 Emitting strength vs. forward current

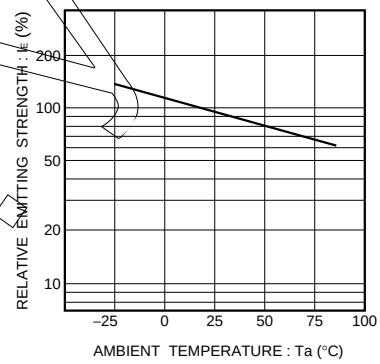

Fig.5 Relative emitting strength vs. ambient temperature

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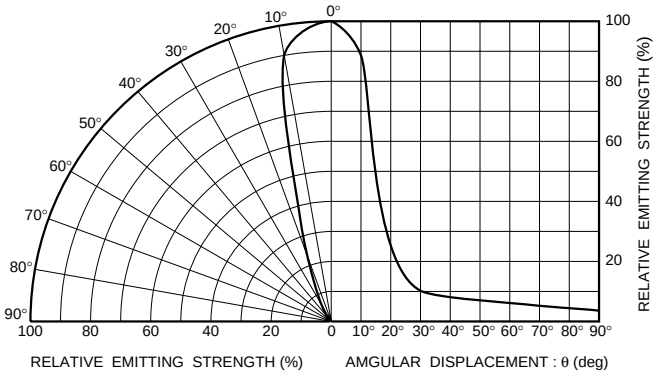

Fig.6 Directional pattern

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