

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.

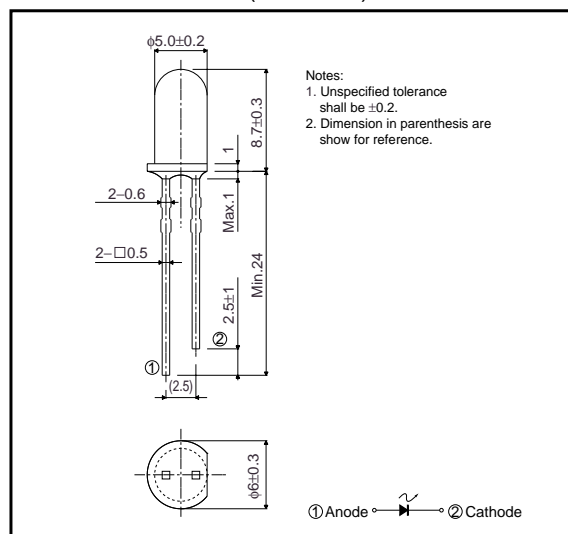
●Applications

Optical control equipment
Light source for remote control devices

●Features

- 1) High efficiency, high output $P_o=8.0\text{mW}$ ($I_F=50\text{mA}$).
- 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 ($T_a = 25^\circ\text{C}$)

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	T_{opr}	$-25\sim+85$	$^\circ\text{C}$
Storage temperature	T_{stg}	$-40\sim+85$	$^\circ\text{C}$

* Pulse width=0.1msec, duty ratio 1%

Sensors

●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	Δλ	–	40	–	nm	I _F =50mA
Half-viewing angle	θ _{1/2}	–	±15	–	deg	I _F =50mA
Response 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

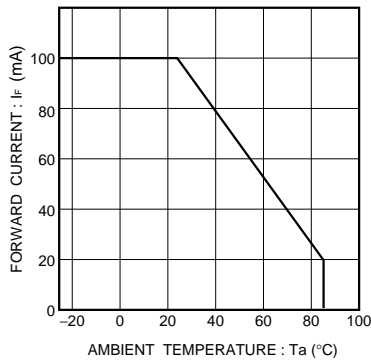


Fig.1 Forward current falloff

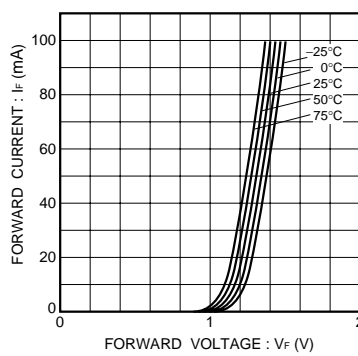


Fig.2 Forward current vs. forward voltage

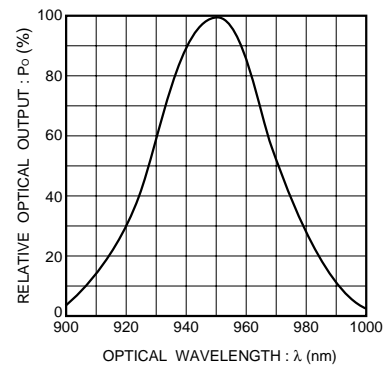


Fig.3 Wavelength

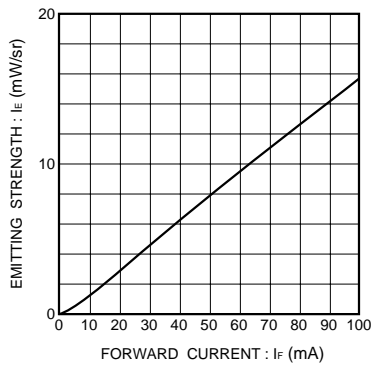


Fig.4 Emitting strength vs. forward current

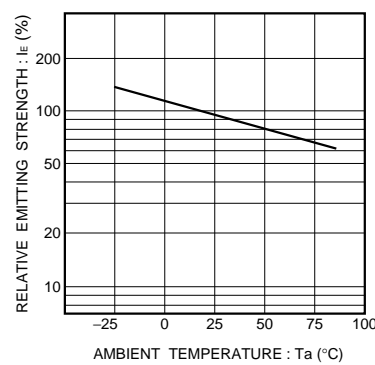


Fig.5 Relative emitting strength vs. ambient temperature

Sensors

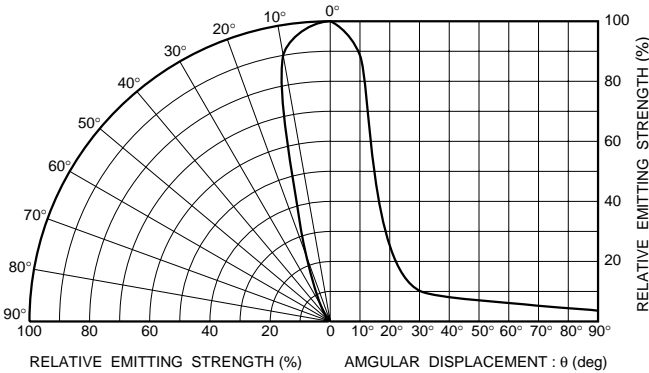


Fig.6 Directional pattern