Infrared light emitting diode, top view type

SIR-34ST3F

The SIR-34ST3F 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. It is small and at the same time has a wide radiation angle, marking it ideal for compact optical control equipment.

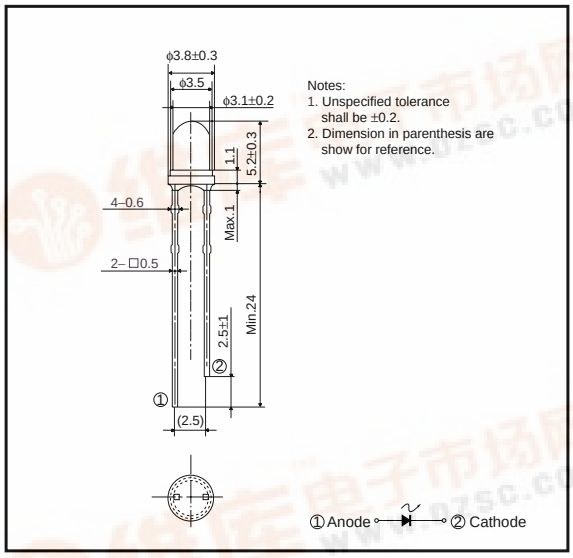
●Applications

Optical control equipment
Light source for remote control devices

●Features

1) Compact (ϕ3.1mm).
2) High efficiency, high output P_O=8.0mW (I_F=50mA).
3) Wide radiation angle θ=27°.
4) Emission spectrum well suited to silicon detectors (λ_P=950nm).
5) Good current-optical output linearity.
6) 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%

●**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	3.5	–	28.0	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	$\theta_{1/2}$	–	±27	–	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**

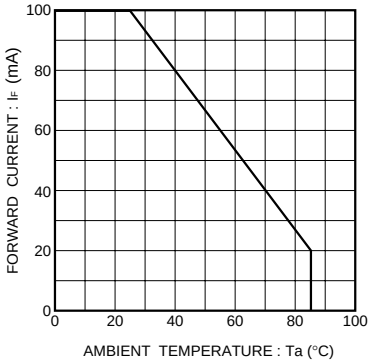


Fig.1 Forward current falloff

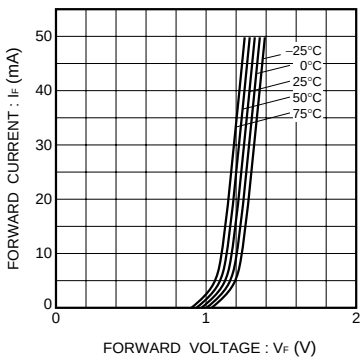


Fig.2 Forward current vs. forward voltage

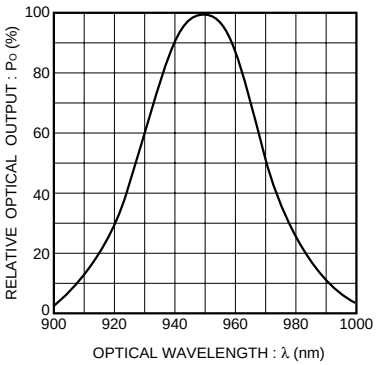


Fig.3 Wavelength

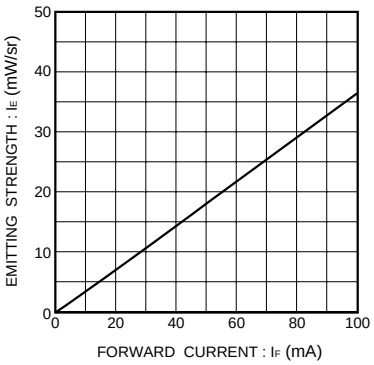


Fig.4 Emitting strength vs. forward current

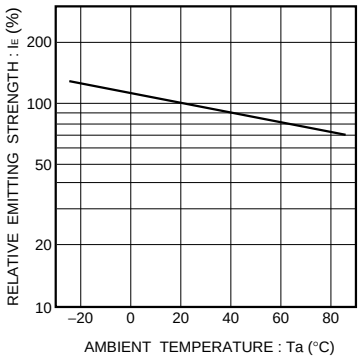


Fig.5 Relative emitting strength vs.ambient temperature

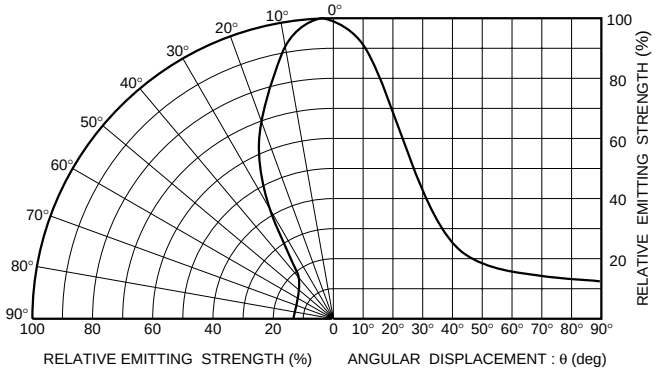


Fig.6 Directional pattern

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