Infrared light emitting diode, top view type

SIR-34ST3F Datasheet

The SIR-34ST3F is a GaAs infrared light emitting diode housed in clear plastic.

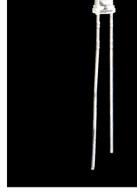
This device has a high luminous efficiency and a 950nm spectrum suitable for silicon detectors. It is small and at the same time has a wide radiation angle, marking it ideal for compact optical control equipment.

Applications

- · Optical control equipment
- · Light source for remote control devices

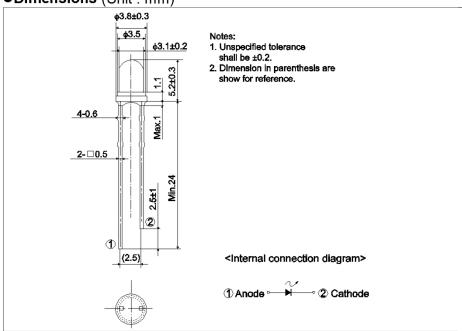
Features

- 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 (λP=950nm).
- 5) Good current-optical output linearity.
- 6) Long life, high reliability.



Outline

●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	V	
Power dissipation	P_{D}	160	mW	
Pulse forward current	l _{FP} *	500	mA	
Operating temperature	T _{opr}	−25 to +85	°C	
Storage temperature	T _{stg}	-40 to +85	°C	

^{*}Pulse width = 0.1 ms, duty ratio 1%

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

Parameter	Symbol	Conditions	Values			Linit
			Min.	Тур.	Max.	Unit
Optical output	Po	I _F =50mA	-	8.0	-	mW
Emitting strength	Ι _Ε	I _F =50mA	3.5	-	17.6	mW/sr
Forward voltage	V_{F}	I _F =100mA	-	1.3	1.6	V
Reverse current	I _R	V _R =3V	-	-	10	μА
Peak light emitting wavelength	λ_{p}	I _F =50mA	-	950	-	nm
Spectral line half width	Δλ	I _F =50mA	-	40	-	nm
Half-viewing angle	θ _{1/2}	I _F =50mA	-	±27	-	deg
Response time	tr∙tf	I _F =50mA	-	1.0	-	μS
Cut-off frequency	f _C	I _F =50mA	-	1.0	-	MHz

•Electrical and optical characteristics curves

Fig.1 Forward Current Falloff

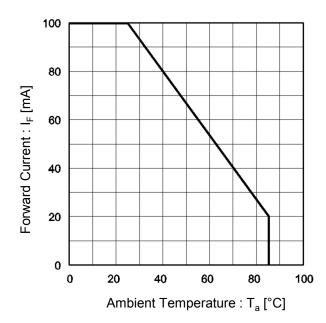


Fig.2 Forward Current vs. Forward Voltage

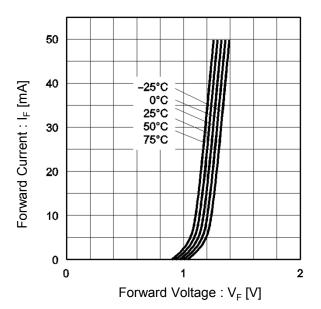


Fig.3 Wavelength

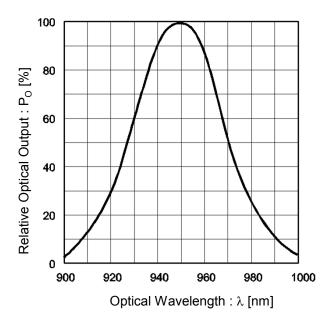
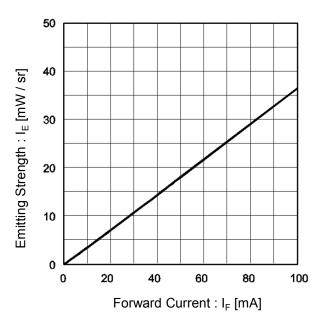


Fig.4 Emitting Strength vs. Forward Current



•Electrical and optical characteristics curves

Fig.5 Relative Emitter Strength vs. Ambient Temperature

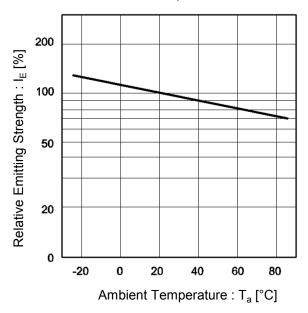
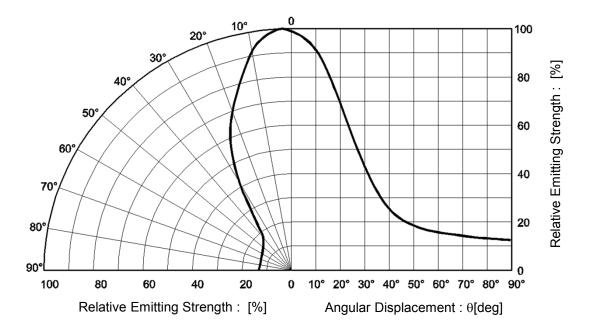


Fig.6 Directional Pattern



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