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 950 nm spectrum suitable for silicon detectors. Low cost make it an ideal light source for household remote control devices.

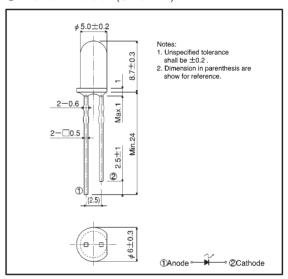
Applications

Optical control equipment Light source for remote control devices

Features

- 1) High efficiency, high output $P_0 = 8.0 \text{ mW}$ ($I_F = 50 \text{ mA}$).
- 2) Emission spectrum well suited to silicon detectors.
- 3) Good current-optical output linearity.
- 4) Long life, high reliability.
- 5) Low cost, clear epoxy resin package.

External dimension (Units: mm)



● Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Forward current	lF	100	mA
Reverse voltage	VR	5	V
Power dissipation	P□	160	mW
Pulse forward current	IFP*	1.0	А
Operating temperature	Topr	-25~ + 85	°C
Storage temperature	Tstg	−40~+85	°C

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

Sensors SIR-56ST3F

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

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Optical output	Po	_	8.0	_	mW	I==50mA
Emitting strength	lε	5.6	_	_	mW/sr	I==50mA
Forward voltage	VF	_	1.3	1.6	٧	I=100mA
Reverse current	lR	_	_	10	μΑ	V _R =3V
Peak light emitting wavelength	λp	_	950	_	nm	I==50mA
Spectral line half width	Δλ	_	40	_	nm	I=50mA
Half-viewing angle	θ 1/2	_	±15	_	deg	I==50mA
Response time	tr • tf	_	1.0	_	μs	I==50mA
Cut-off frequency	fc	_	1.0	_	MHz	I==50mA

Electrical and optical characteristic curves

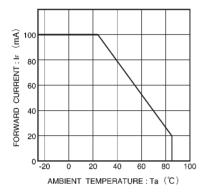


Fig. 1 Forward current falloff

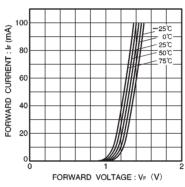


Fig. 2 Forward current vs. forward voltage

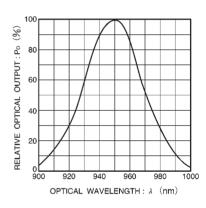


Fig. 3 Wavelength

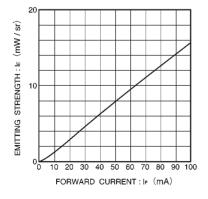


Fig. 4 Emitting strength vs. forward current

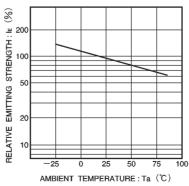


Fig. 5 Relative emitting strength vs. ambient temperature

Sensors SIR-56ST3F

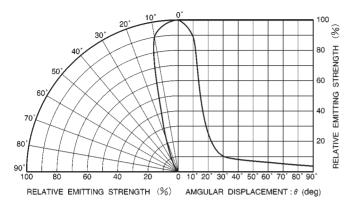


Fig. 6 Directional pattern