Infrared light emitting diode, top view type

SIR-568ST3F

The SIR-568ST3F has the response speed and luminous output necessary for image transmission in audio-visual applications. It can support almost all types of optical transmission through air, including audio and data transmission. The luminous output is 13mW and the cutoff frequency is 50MHz.

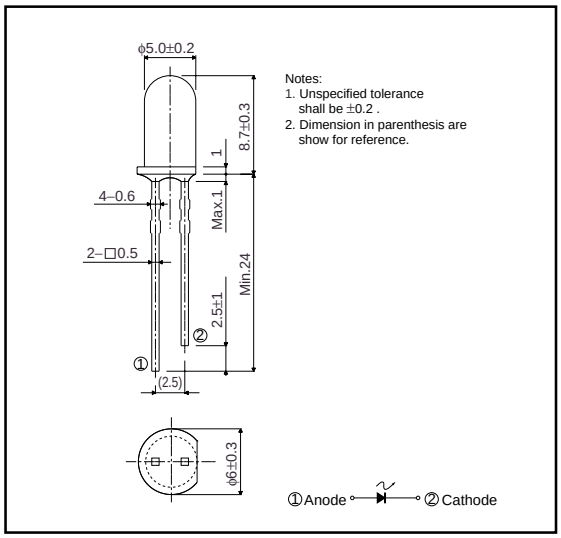
●Applications

Transmission of images from a video cassette recorder to a television.
Transmission of audio signals between audio devices.
High speed data transmission.

●Features

1) High luminous output 13mW.
2) Fast response is possible 50MHz cutoff frequency.

●External dimensions (Units : mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Forward current	I_F	100	mA
Reverse voltage	V_R	4.0	V
Power dissipation	P_D	230	mW
Pulse forward current	I_{FP}*	1.0	A
Operating temperature	Topr	–25~+85	°C
Storage temperature	Tstg	–40~+85	°C

* Pulse width = 0.1 msec, duty ratio 1%

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

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Optical output		P_O	–	13	–	mW	I_F=50mA
Emitting strength		I_E	18	38	–	mW/sr	I_F=50mA
Forward voltage		V_F	–	1.6	2.1	V	I_F=50mA
Reverse current		I_R	–	–	10	μA	V_R=2V
Peak light emitting wavelength		λ_P	–	850	–	nm	I_F=20mA
Spectral line half width		$\Delta\lambda$	–	40	–	nm	I_F=20mA
Half-viewing angle		$\theta_{1/2}$	–	±13	–	deg	I_F=50mA
Response time	Rise time	tr	–	8.0	–	ns	I_F=50mA
	Fall time	tf	–	6.0	–	ns	I_F=50mA
Cut-off frequency		fc	–	50	–	MHz	I_F=30mA DC+20mA p-p

●Electrical and optical characteristic curves

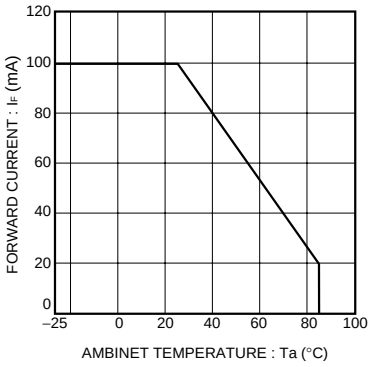


Fig.1 Forward current falloff

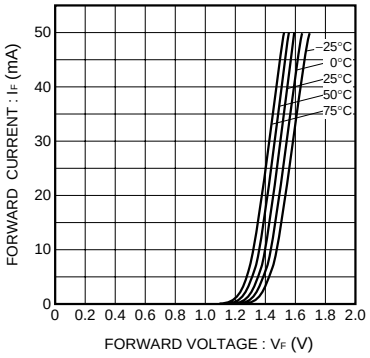


Fig.2 Forward current vs. forward voltage

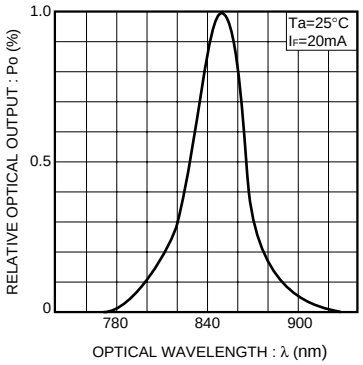


Fig.3 Wavelength characteristics

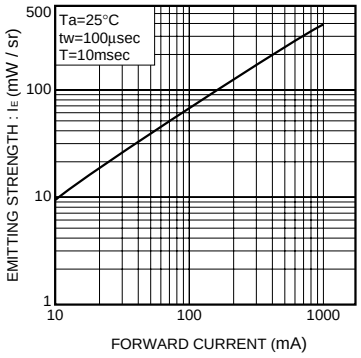


Fig.4 Emitting strength vs. forward current

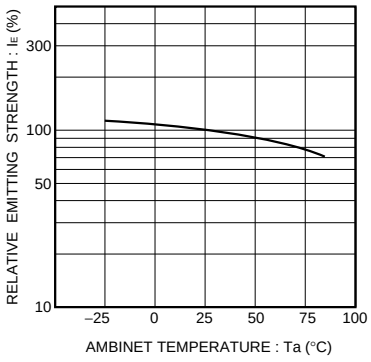


Fig.5 Relative emitting strength vs. ambient temperature

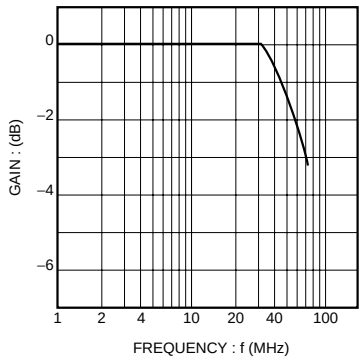


Fig.6 Frequency characteristics

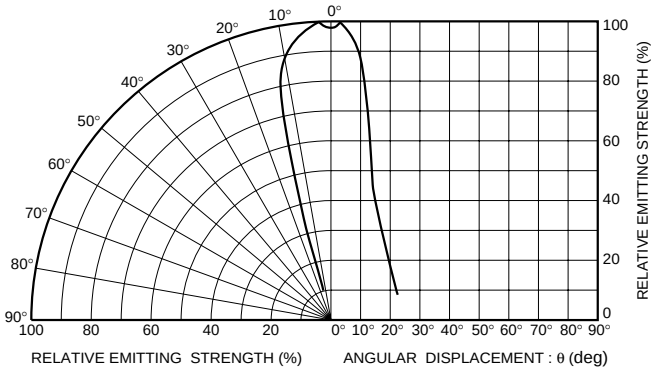


Fig.7 Directional pattern