Infrared light emitting diode, top view type

SIR-568ST3F Datasheet

The SIR-568ST3F has the response speed and luminous output necessary for image transmission in audio-visualapplications. 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.
- ETransmission of audio signals between audio devices.
- High speed data transmission.

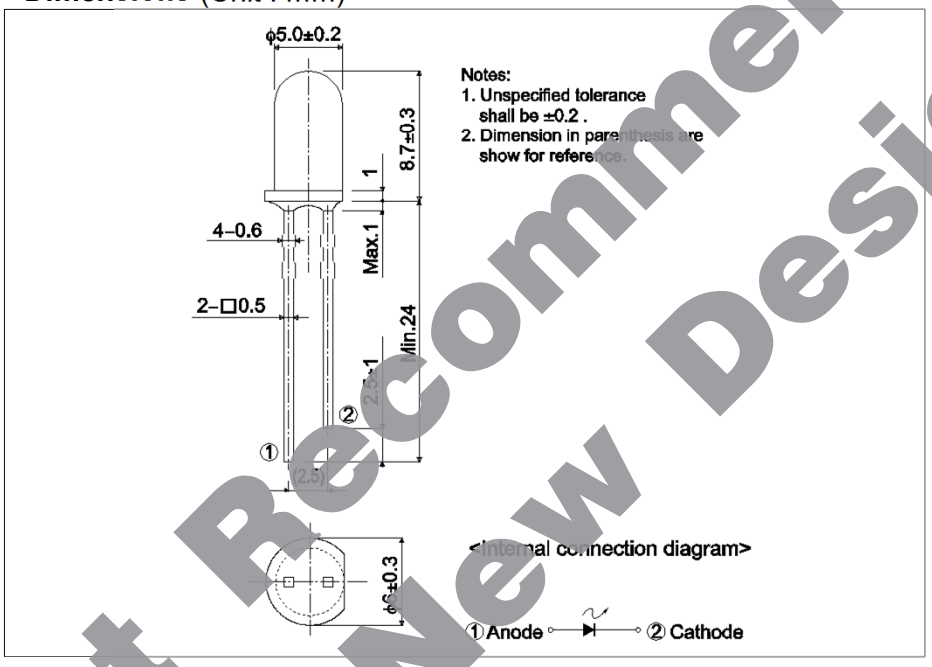
●Outline



●Features

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

●Dimensions (Unit : mm)



●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Value	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}*	500	mA
Operating temperature	T_{opr}	−25 to +85	°C
Storage temperature	T_{stg}	−40 to +85	°C

*Pulse width = 0.1 msec, duty ratio 1%

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

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

●Classified table of rank

Item	Emitting Strength - I_E			Unit
P	18.0	to	38.8	mW / sr
Q	27.1	to	55.3	mW / sr
R	38.6	to	83.1	mW / sr
S	57.8	to	110.0	mW / sr

◎ Condition I_F=50mA

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●Electrical and optical characteristics curves

Fig.1 Forward Current Falloff

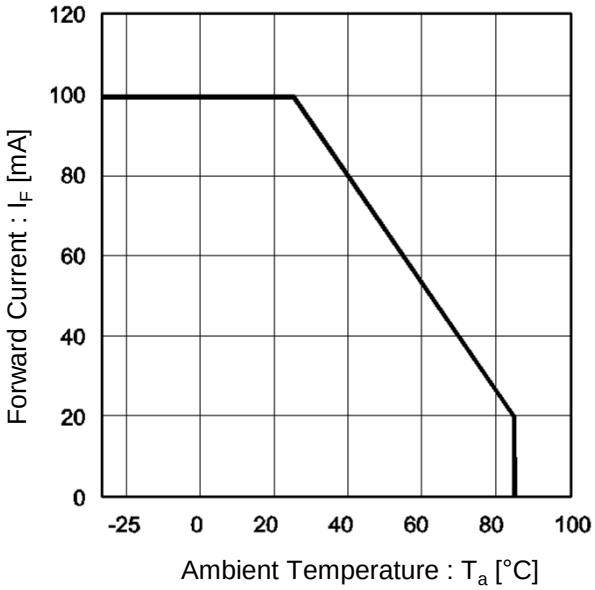


Fig.2 Forward Current vs. Forward Voltage

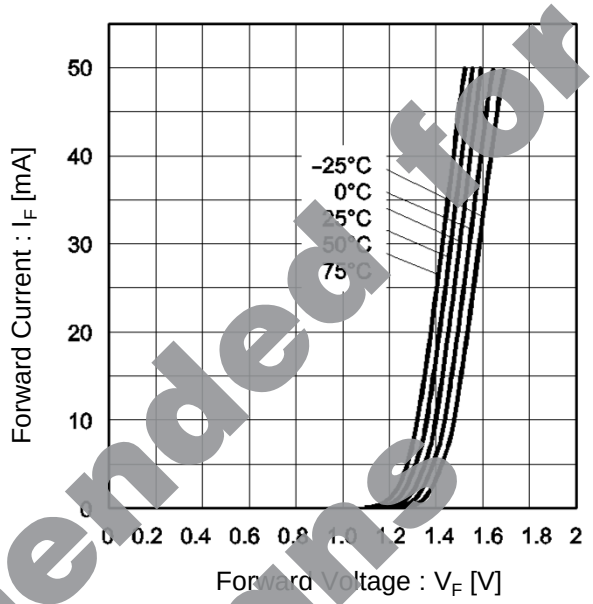


Fig.3 Wavelength

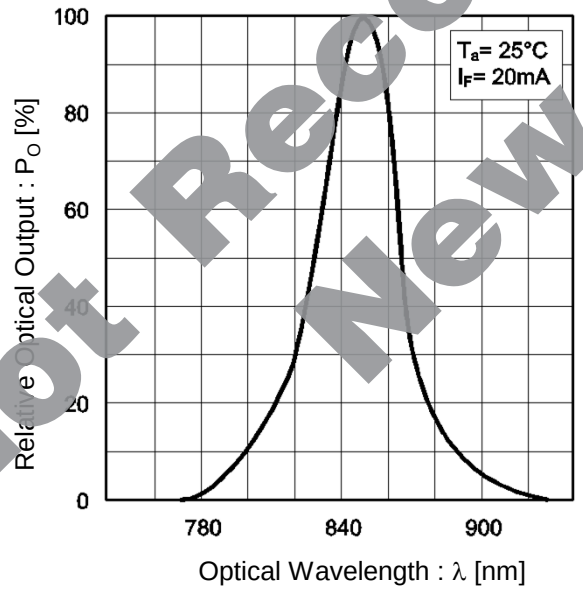
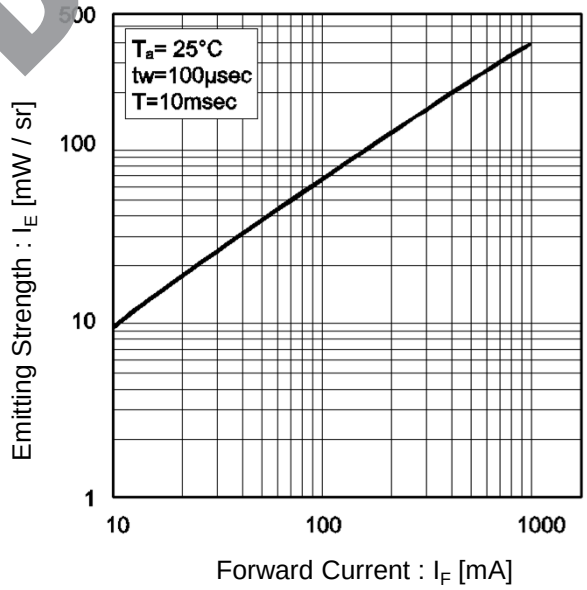


Fig.4 Emitting Strength vs. Forward Current



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●Electrical and optical characteristics curves

Fig.5 Relative Emitter Strength vs. Ambient Temperature

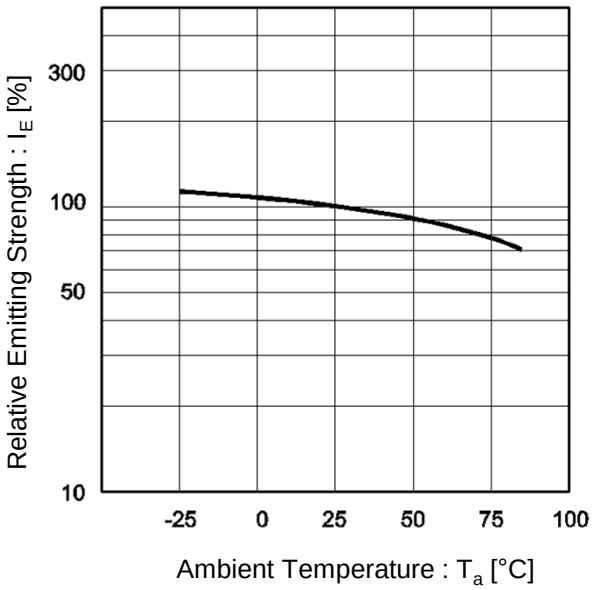


Fig.6 Frequency Characteristics

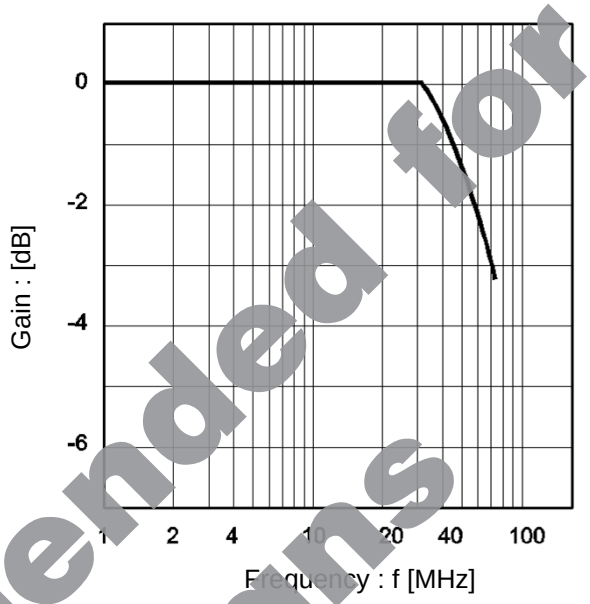
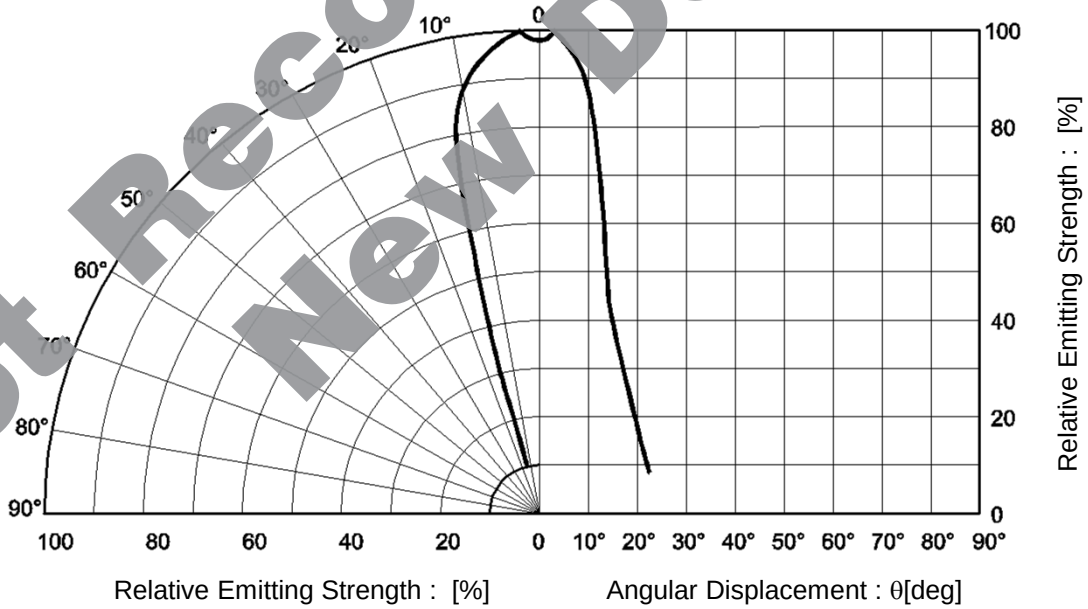


Fig.7 Directional Pattern



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