

The SIR-56ST3F 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. Low cost make it an ideal light source for household remote control devices.

●Applications

- Optical control equipment
- Light source for remote control devices

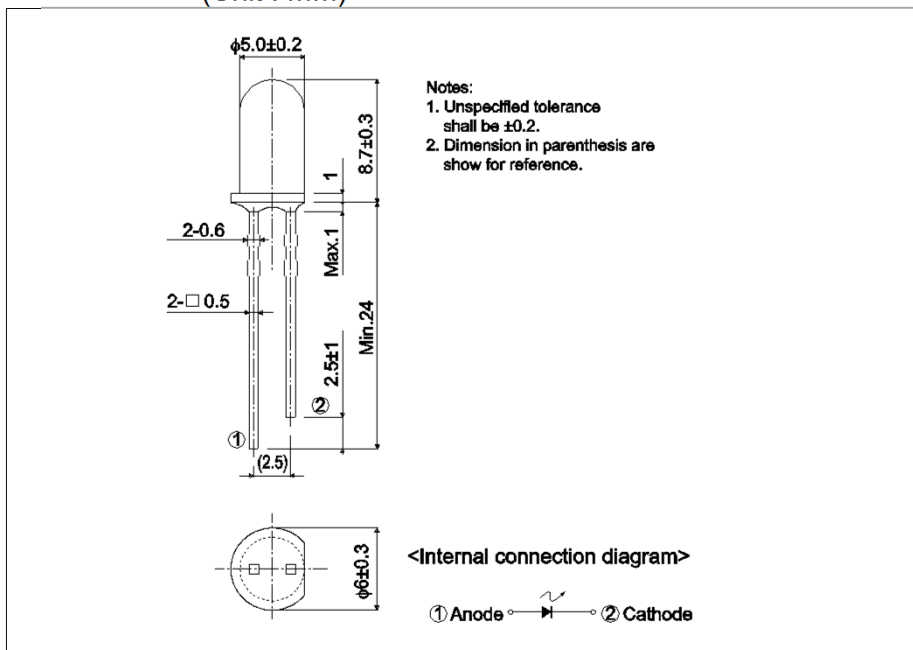
●Features

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

●Outline



●Dimensions (Unit : mm)



●Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

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	I_{FP}^*	500	mA
Operating temperature	T_{opr}	-25 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +85	$^\circ\text{C}$

*Pulse width = 0.1 msec, duty ratio 1%

●Electrical and optical characteristics ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Optical output	P_O	$I_F=50\text{mA}$	-	8.0	-	mW
Emitting strength	I_E	$I_F=50\text{mA}$	5.6	-	-	mW/sr
Forward voltage	V_F	$I_F=100\text{mA}$	-	1.3	1.6	V
Reverse current	I_R	$V_R=3\text{V}$	-	-	10	μA
Peak light emitting wavelength	λ_p	$I_F=50\text{mA}$	-	950	-	nm
Spectral line half width	$\Delta\lambda$	$I_F=50\text{mA}$	-	40	-	nm
Half-viewing angle	$\theta_{1/2}$	$I_F=50\text{mA}$	-	± 15	-	deg
Response time	tr·tf	$I_F=50\text{mA}$	-	1.0	-	μs
Cut-off frequency	f_C	$I_F=50\text{mA}$	-	1.0	-	MHz

●Classified table of rank

Item	Emitting Strength : I_E	Unit
L	5.6 to 11.7	mW / sr
M	8.2 to 17.6	mW / sr
N	12.3 to 25.8	mW / sr
P	18.0 to 38.8	mW / sr

© Condition $I_F=50\text{mA}$

●Electrical and optical characteristics curves

Fig.1 Forward Current Falloff

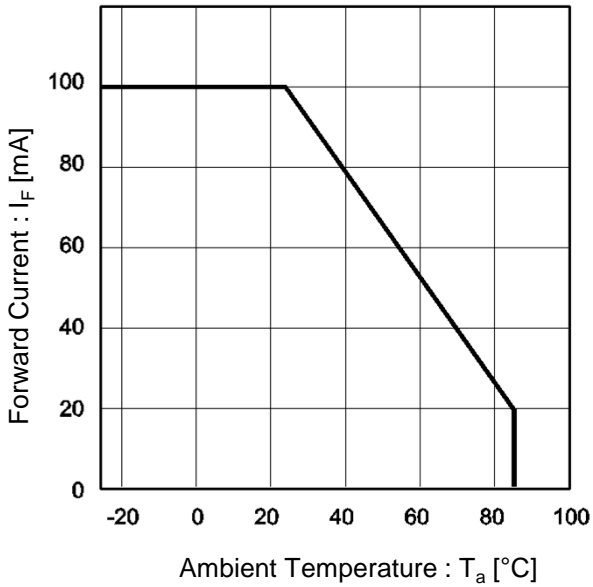


Fig.2 Forward Current vs. Forward Voltage

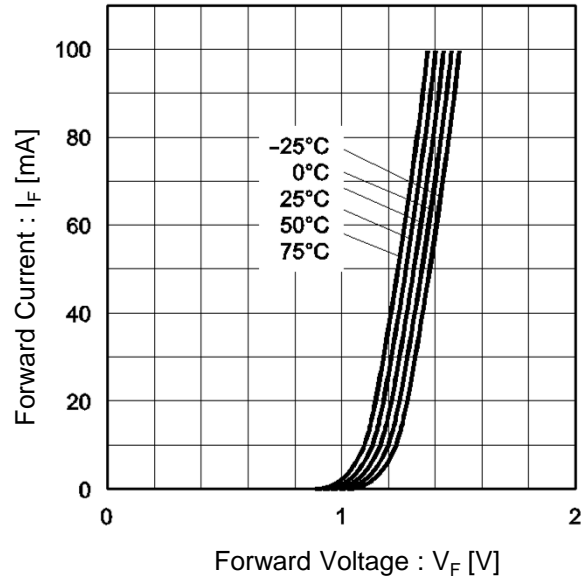


Fig.3 Wavelength

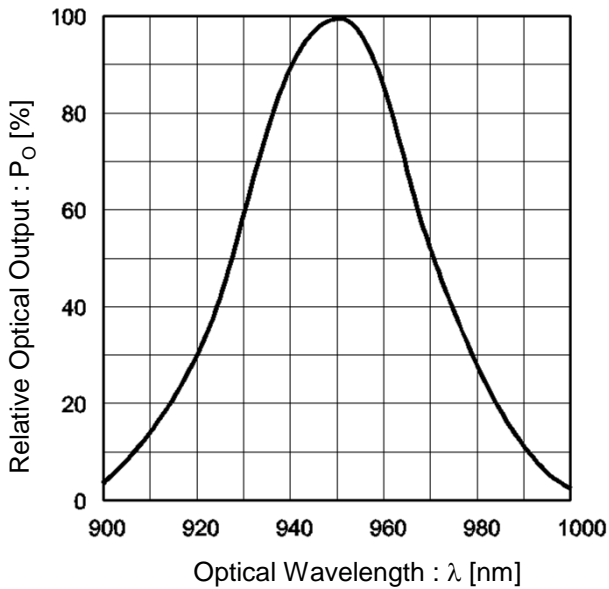
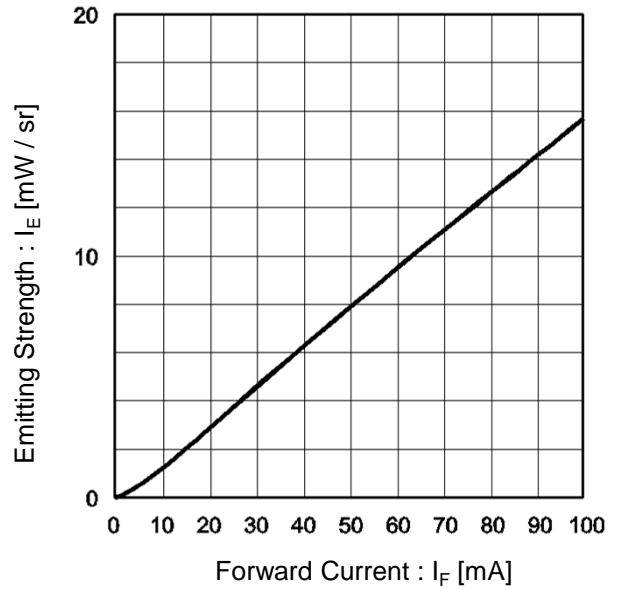


Fig.4 Emitting Strength vs. Forward Current



●Electrical and optical characteristics curves

Fig.5 Relative Emitter Strength vs. Ambient Temperature

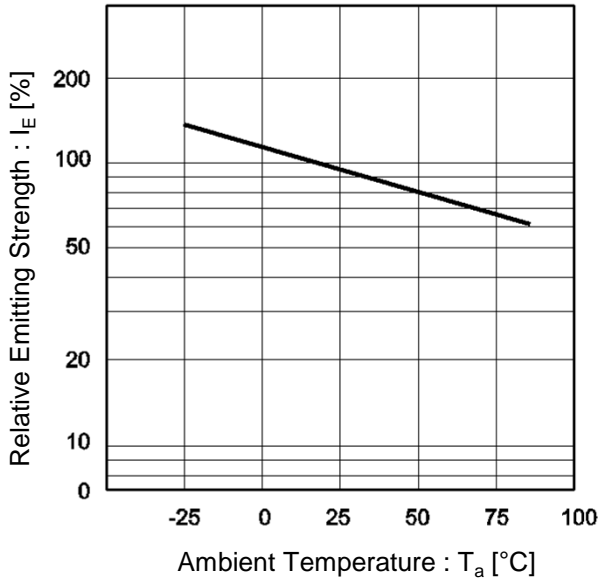
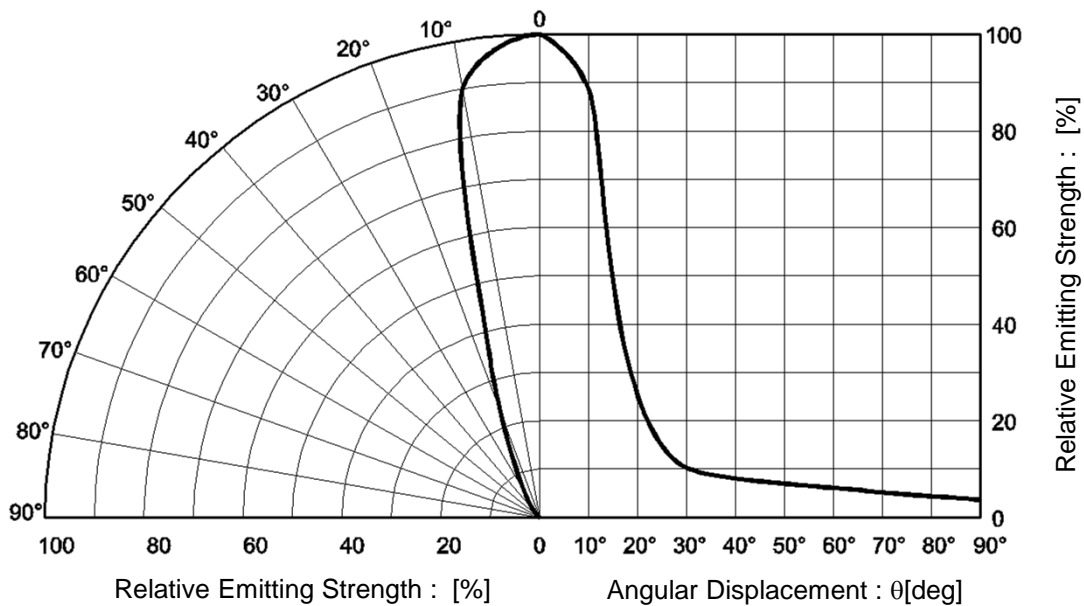


Fig.6 Directional Pattern



Notes

- 1) The information contained herein is subject to change without notice.
- 2) Before you use our Products, please contact our sales representative and verify the latest specifications.
- 3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors. Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. ROHM shall have no responsibility for any damages arising out of the use of our Products beyond the rating specified by ROHM.
- 4) Examples of application circuits, circuit constants and any other information contained herein are provided only to illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.
- 5) The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM or any other parties. ROHM shall have no responsibility whatsoever for any dispute arising out of the use of such technical information.
- 6) The Products are intended for use in general electronic equipment (i.e. AV/OA devices, communication, consumer systems, gaming/entertainment sets) as well as the applications indicated in this document.
- 7) The Products specified in this document are not designed to be radiation tolerant.
- 8) For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a ROHM representative : transportation equipment (i.e. cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, servers, solar cells, and power transmission systems.
- 9) Do not use our Products in applications requiring extremely high reliability, such as aerospace equipment, nuclear power control systems, and submarine repeaters.
- 10) ROHM shall have no responsibility for any damages or injury arising from non-compliance with the recommended usage conditions and specifications contained herein.
- 11) ROHM has used reasonable care to ensure the accuracy of the information contained in this document. However, ROHM does not warrants that such information is error-free, and ROHM shall have no responsibility for any damages arising from any inaccuracy or misprint of such information.
- 12) Please use the Products in accordance with any applicable environmental laws and regulations, such as the RoHS Directive. For more details, including RoHS compatibility, please contact a ROHM sales office. ROHM shall have no responsibility for any damages or losses resulting non-compliance with any applicable laws or regulations.
- 13) When providing our Products and technologies contained in this document to other countries, you must abide by the procedures and provisions stipulated in all applicable export laws and regulations, including without limitation the US Export Administration Regulations and the Foreign Exchange and Foreign Trade Act.
- 14) This document, in part or in whole, may not be reprinted or reproduced without prior consent of ROHM.



Thank you for your accessing to ROHM product informations.
More detail product informations and catalogs are available, please contact us.

ROHM Customer Support System

<http://www.rohm.com/contact/>



SIR-56ST3F - Web Page

[Distribution Inventory](#)

Part Number	SIR-56ST3F
Package	DIP
Unit Quantity	1000
Minimum Package Quantity	1000
Packing Type	Bulk
Constitution Materials List	inquiry
RoHS	Yes