

SIR-381SB3F

GaAs infrared light-emitting diode

This infrared GaAs LED is housed in a compact, transparent, plastic housing. It radiates at a wavelength of 950 nm making it suitable for silicon light detectors. Although compact, it has a wide light distribution angle ($\theta_{1/2} = 30^\circ$).

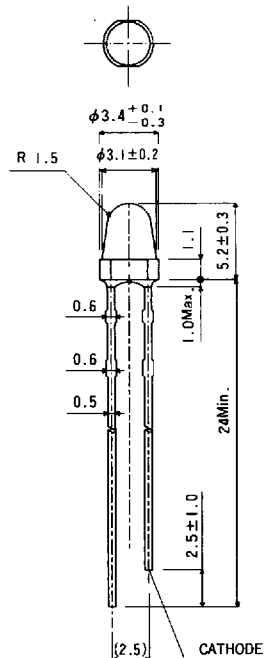
Features

- compact, 3.1 mm diameter
- high efficiency and output, $P_O = 8.0$ mW at 50 mA
- linear current-to-light output characteristics
- long life and high reliability
- low cost plastic package

Applications

- light-controlled equipment
- light source for remote controlled devices

Dimensions (Units : mm)



Selection guide

Lens	Emitting range
Colorless transparent	Infrared standard

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

Parameter	Symbol	Limits	Unit
Power dissipation	P_D	160	mW
Forward current	I_F	100	mA
Peak forward current	I_{FP}^1	1.0	A
Reverse voltage	V_R	5.0	V
Operating temperature	T_{opr}	$-25 \sim +85$	$^\circ\text{C}$
Storage temperature	T_{stg}	$-40 \sim +85$	$^\circ\text{C}$

¹. $f = 1$ kHz, duty ratio = 1%

Electro-optical characteristics (T_a = 25°C)

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Optical output	P _O		8.0		mW	I _F = 50 mA
Emission power	I _E	3.5			mW/sr	I _F = 50 mA
Forward voltage	V _F		1.4	1.7	V	I _F = 50 mA
Reverse current	I _R			10	μA	V _R = 3 V
Peak wavelength	λ _p		950		nm	I _F = 50 mA
Half width	Δλ		40		nm	I _F = 50 mA
Capacitance between terminals	C _T		50		pF	f = 1 MHz, V = 0
Half angle	θ _{1/2}		±30		deg	I _F = 50 mA
Response time	tr.tf		1.0		μs	I _F = 50 mA

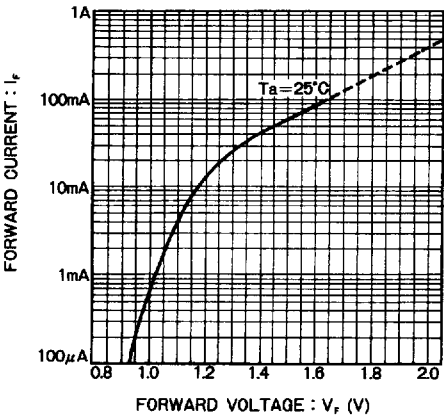


Figure 1

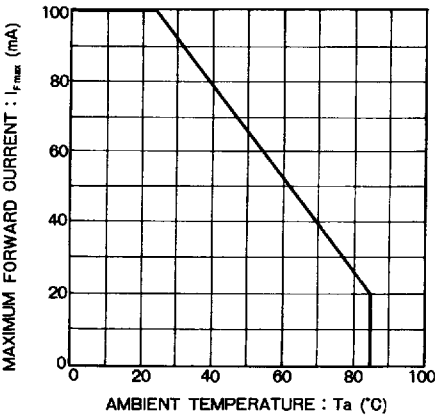


Figure 2

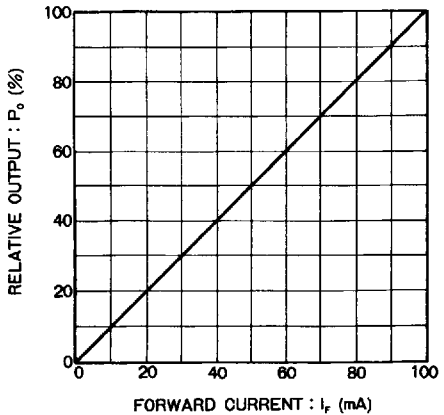


Figure 3

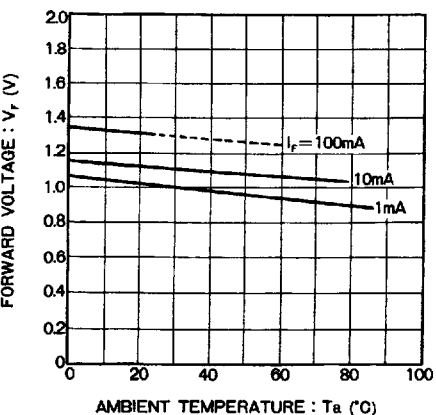
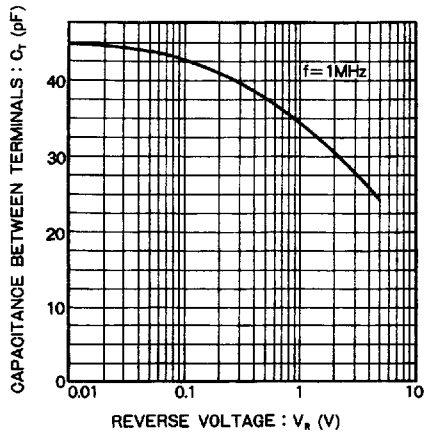
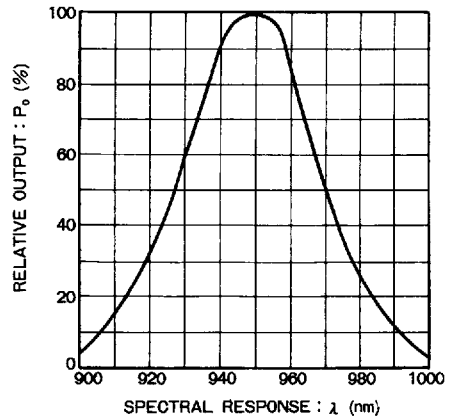
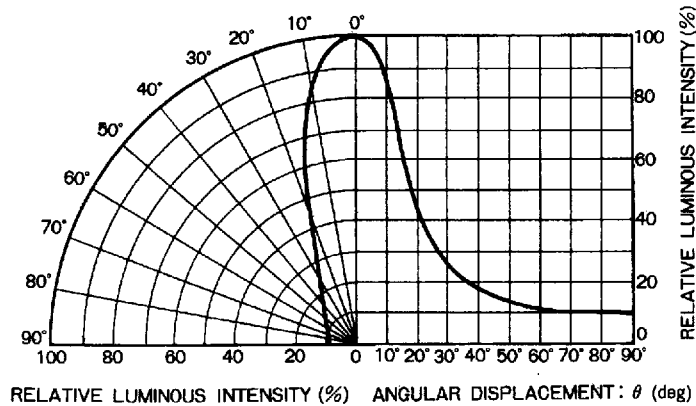


Figure 4

**Figure 5****Figure 6****Figure 7**