

# High power chip sensor, side view type

## SIM-012ST

The SIM-012ST is ultra small size and high power chip sensor. Original technology, original structure and original Optical design enable to use Automatic moantinig machine, Reflow, ultra smallsize, High power.

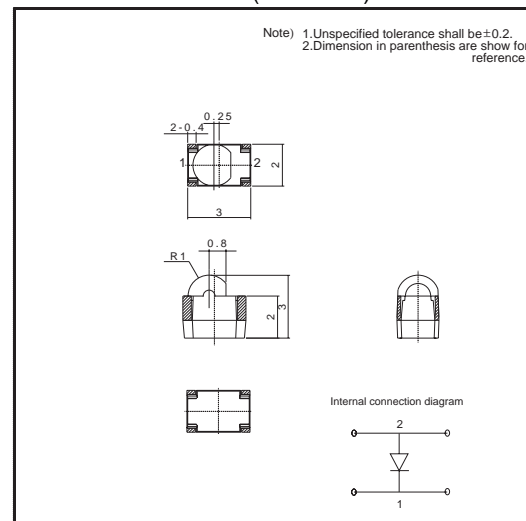
### ●Applications

Optical control equipment  
Light source for remote control devices

### ●Features

- 1) High power by  $\phi 2$  lenze.
- 2) Emitting pore can have 7time high power then substruk type with parabola structure.
- 3) Ultra-compact surface mount package.  
(3mmx3mmx2mm)
- 4) It is possible to do Refliw.

### ●External dimensions (Units : mm)



### ●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Forward current	$I_F$	40	mA
Reverse voltage	$V_R$	5	V
power dissipation	$P_D$	60	mW
Pulse forward current	$I_{FP}^*$	0.5	A
Operating temperature	$T_{opr}$	-30~+85	°C
Storage temperature	$T_{stg}$	-40~+100	°C

\* Pulse width=0.1msec, duty ratio 1%

## Sensors

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Optical output	P <sub>o</sub>	–	3.5	–	mW	I <sub>F</sub> =20mA
Emitting strength	I <sub>E</sub>	0.9	–	7.1	mW/sr	I <sub>F</sub> =20mA
Forward voltage	V <sub>F</sub>	–	1.2	1.5	V	I <sub>F</sub> =20mA
Reverse current	I <sub>R</sub>	–	–	10	μA	V <sub>R</sub> =3V
peak light emitting wavelength	λ <sub>P</sub>	–	950	–	nm	I <sub>F</sub> =20mA
Spectral line half width	Δλ	–	40	–	nm	I <sub>F</sub> =20mA
Half-viewing angle	θ <sub>1/2</sub>	–	±12	–	deg	I <sub>F</sub> =20mA
Response time	tr-tf	–	1.0	–	μs	I <sub>F</sub> =20mA
Cut-off frequency	f <sub>c</sub>	–	1.0	–	MHz	I <sub>F</sub> =20mA

## ●Electrical and optical characteristic curves

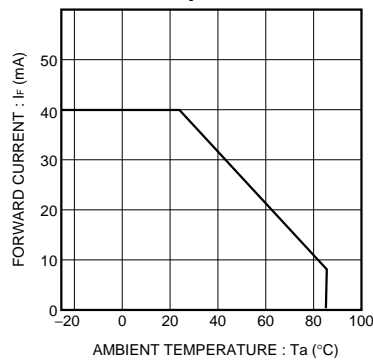


Fig.1 Forward current falloff

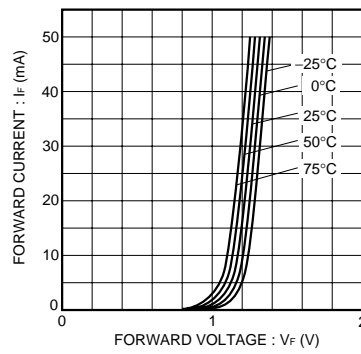


Fig.2 Forward current vs. forward voltage

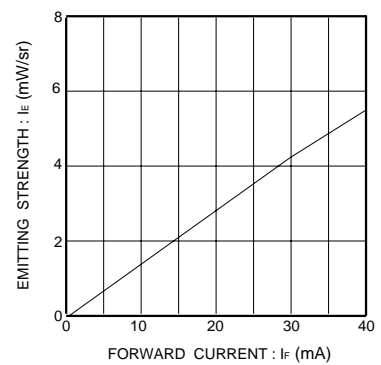


Fig.3 Emitting strength vs. forward current

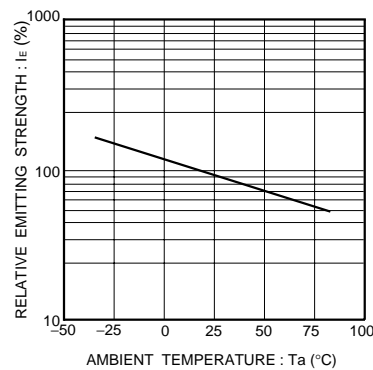


Fig.4 Relative emitting strength vs. ambient temperature

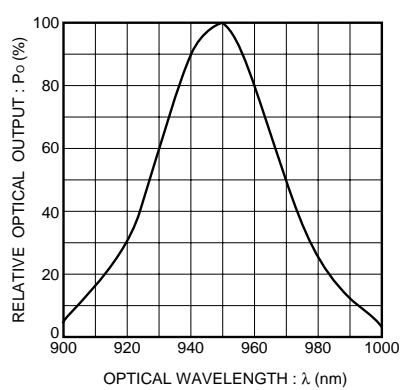


Fig.5 Wavelength

Sensors

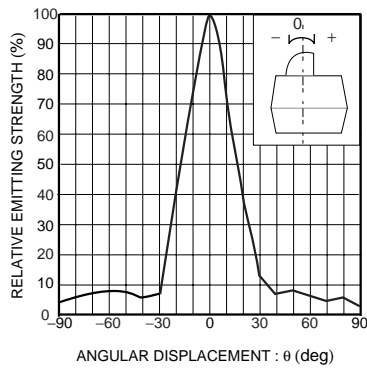


Fig.6 Directional pattern(1)

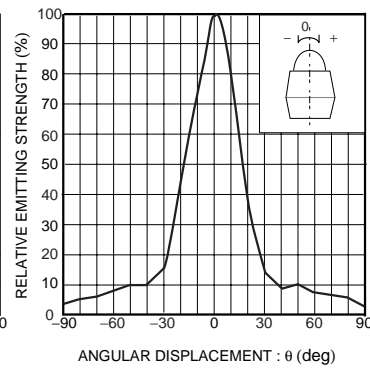


Fig.7 Directional pattern(2)