

# 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 moanting machine, Reflow, ultra smallsize, High power.

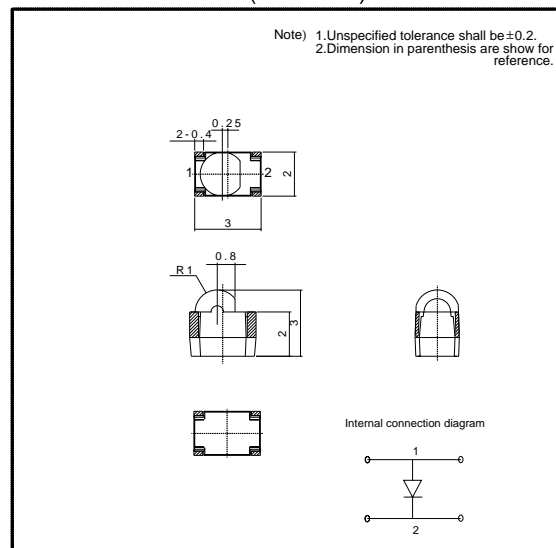
### ●Applications

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 Reflow.

### ●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

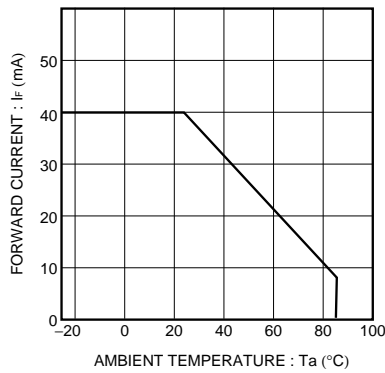


Fig.1 Forward current falloff

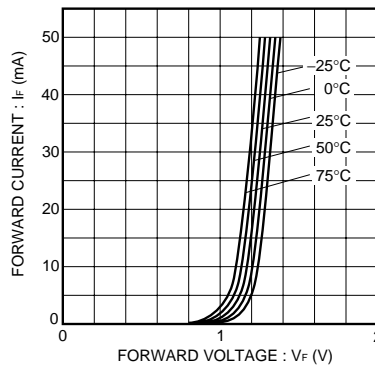


Fig.2 Forward current vs. forward voltage

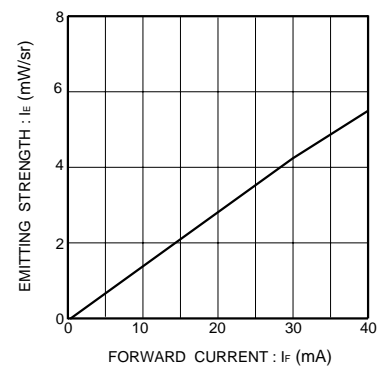


Fig.3 Emitting strength vs. forward current

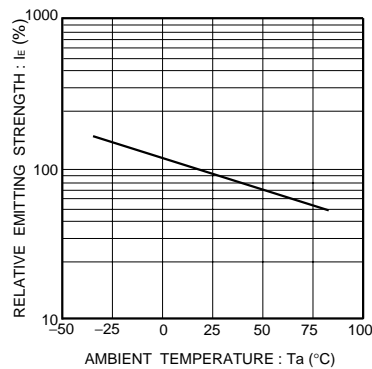


Fig.4 Relative emitting strength vs. ambient temperature

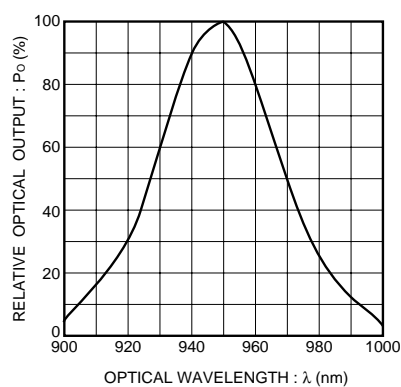


Fig.5 Wavelength

## Sensors

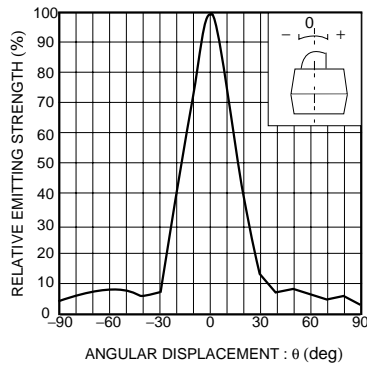


Fig.6 Directional pattern(1)

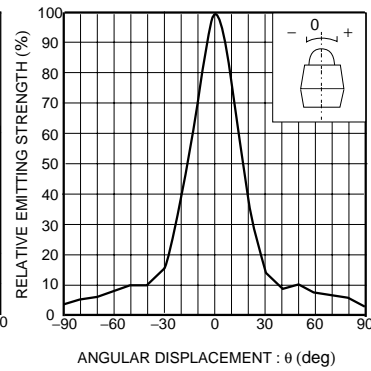


Fig.7 Directional pattern(2)