

**Notes:**

1. All dimensions are in millimeters.
2. Tolerance is  $\pm 0.50\text{mm}$  unless otherwise noted.
3. The size marked on the drawing is Ground-Detecting Module.
4. Specifications are subject to change without notice.

## Features

Pb free product—RoHS compliant

Fast response time

High sensitivity

Invisible wavelength =940nm

Integration structure

The four pins of the connector and the corresponding PCB pads are filled with silicone

## Typical Applications

Intelligent Sweeping Robot

## Absolute Maximum Ratings at Ta=25

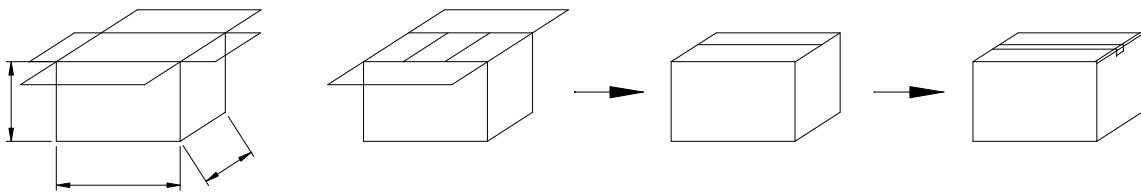
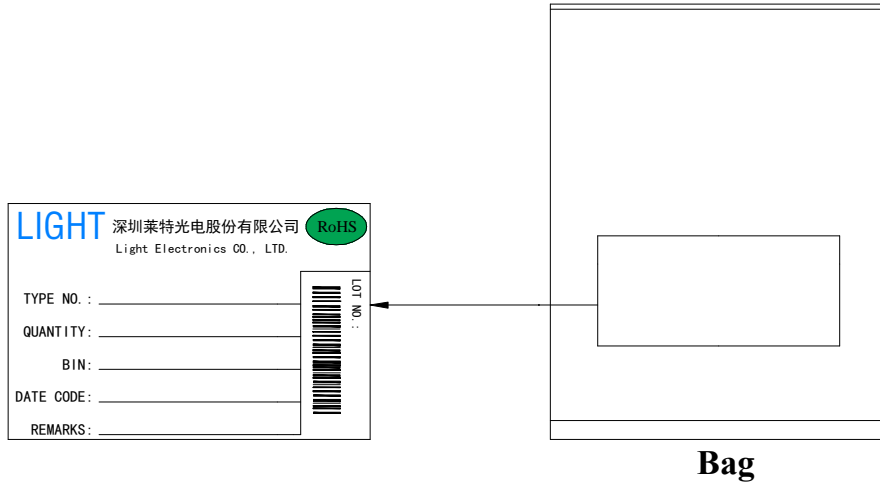
Parameter		Symbol	Ratings	Unit
Input	Power Dissipation	Pd	170	mW
	Reverse Voltage	V <sub>R</sub>	5	V
	Forward Current	I <sub>F</sub>	100	mA
	Peak Forward Current <sup>*1</sup>	I <sub>FP</sub>	250	mA
Output	Collector Power Dissipation	Pc	75	mW
	Collector Current	I <sub>C</sub>	20	mA
	Collector-Emitter Voltage	V <sub>CEO</sub>	30	V
	Emitter-Collector Voltage	V <sub>ECO</sub>	5	V
Electrostatic Discharge (HBM)		ESD	4000	V
Operating Temperature Range		T <sub>opr</sub>	-25 to + 65	
Storage Temperature Range		T <sub>stg</sub>	-40 to + 85	

### Electrical Optical Characteristics at Ta=25

Input						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
						$f_F=50\text{mA}$
Forward Voltage	$V_F$	---	1.35	1.60	V	$I_F=50\text{mA}$
Reverse Current	$I_R$	---	---	10	$\mu\text{A}$	$V_R=5\text{V}$

Output						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	30	---	---	V	$I_C=0.1\text{mA}$ $E_e=0\text{mW/cm}^2$
Emitter-Collector Breakdown Voltage	$BV_{ECO}$	5	---	---	V	$I_E=0.1\text{mA}$ $E_e=0\text{mW/cm}^2$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	---	---	0.4	V	$I_C=2\text{mA}$ $E_e=1.0\text{mW/cm}^2$
Rise Time	$T_r$					$V_{CC}=5\text{V}$ $R_L$ $I_C=1\text{mA}$
Fall Time	$T_f$					
Collector Dark Current	$I_{CEO}$	---	---	100	nA	$V_{CE}=10\text{V}$ $E_e=0\text{mW/cm}^2$
On State Collector Current	$I_{C(ON)}$	1.0	5.0	---	mA	$V_{CE}=5\text{V}$ $I_F=20\text{mA}$

## PACKAGE



Bag volume (pcs / Bag)	Outer Carton volume (Bag / Carton)
TBD	TBD