

# **LT-GDM-02**

## Ground-Detecting Module

### Product Specifications

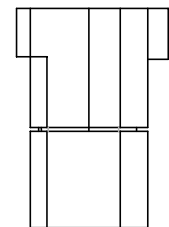
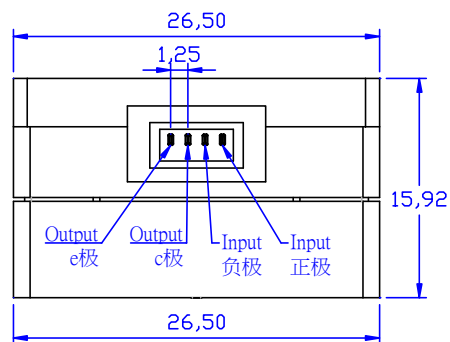
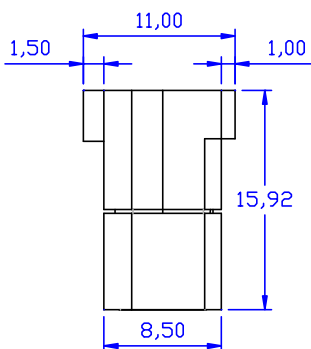
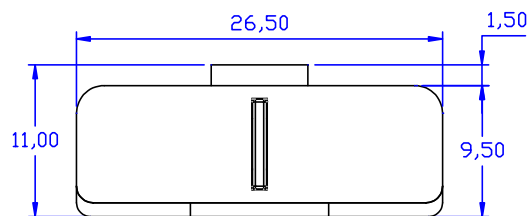
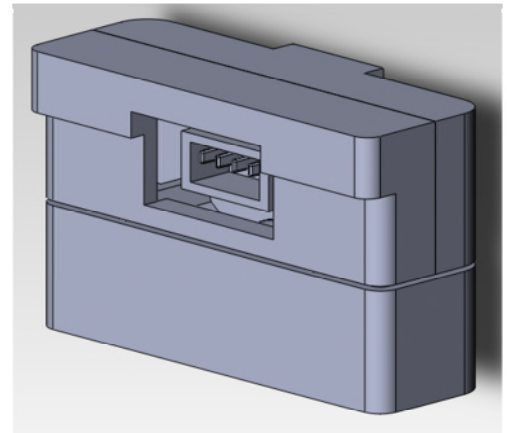
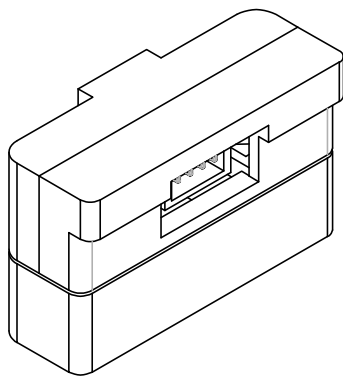
SPEC. NO. : SZ21082401  
DATE : 2021/08/24  
REV. : A/0

Approved By:

Checked By:

Prepared By:

### Dimensions of Module



#### Notes:

1. All dimensions are in millimeters.
2. Tolerance is  $\pm 0.50\text{mm}$  unless otherwise noted.
3. Specifications are subject to change without notice.

### Features

- ◆ Pb free product—RoHS compliant
- ◆ Fast response time
- ◆ High sensitivity
- ◆ Invisible wavelength  $\lambda_p=940\text{nm}$
- ◆ Integration structure

### Typical Applications

- ◆ Intelligent Sweeping Robot

### Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation	$P_d$	170	mW
	Reverse Voltage	$V_R$	5	V
	Forward Current	$I_F$	100	mA
	Peak Forward Current <sup>*1</sup>	$I_{FP}$	250	mA
Output	Collector Power Dissipation	$P_c$	75	mW
	Collector Current	$I_C$	20	mA
	Collector-Emitter Voltage	$V_{CEO}$	30	V
	Emitter-Collector Voltage	$V_{ECO}$	5	V
Electrostatic Discharge (HBM)		ESD	4000	V
Operating Temperature Range		$T_{opr}$	$-25^\circ\text{C}$ to $+65^\circ\text{C}$	$^\circ\text{C}$
Storage Temperature Range		$T_{stg}$	$-40^\circ\text{C}$ to $+85^\circ\text{C}$	$^\circ\text{C}$

Note: 1. Pulse width $\leq 0.1\text{msec}$ , duty cycle $\leq 1/2$ ;

## Electrical Optical Characteristics at Ta=25°C

Input						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Peak Wavelength	$\lambda_p$	---	940	---	nm	$I_F=50mA$
Forward Voltage	$V_F$	---	1.35	1.60	V	$I_F=50mA$
Reverse Current	$I_R$	---	---	10	$\mu A$	$V_R=5V$

Output						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	30	---	---	V	$I_C=0.1mA$ $E_e=0mW/cm^2$
Emitter-Collector Breakdown Voltage	$BV_{ECO}$	5	---	---	V	$I_E=0.1mA$ $E_e=0mW/cm^2$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	---	---	0.4	V	$I_C=2mA$ $E_e=1.0mW/cm^2$
Rise Time	$T_r$	---	15	---	$\mu s$	$V_{CC}=5V$ $R_L=1K\Omega$ $I_C=1mA$
Fall Time	$T_f$	---	15	---	$\mu s$	
Collector Dark Current	$I_{CEO}$	---	---	100	nA	$V_{CE}=10V$ $E_e=0mW/cm^2$
On State Collector Current	$I_{C(ON)}$	1.0	5.0	---	mA	$V_{CE}=5V$ $I_F=20mA$