

LT-GDM-05

Ground-Detecting Module

Product Specifications

SPEC. NO. : SZ23040701
DATE : 2023/04/07
REV. : A/0

Approved By:

Checked By:

Prepared By:

Features

- ◆ Pb free product—RoHS compliant
- ◆ Fast response time
- ◆ High sensitivity
- ◆ Invisible wavelength $\lambda_p=940\text{nm}$
- ◆ 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 $T_a=25^\circ\text{C}$

| 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 ^{*1} | 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°C to $+65^\circ\text{C}$ | $^\circ\text{C}$ |
| Storage Temperature Range | | T_{stg} | -40°C to $+85^\circ\text{C}$ | $^\circ\text{C}$ |

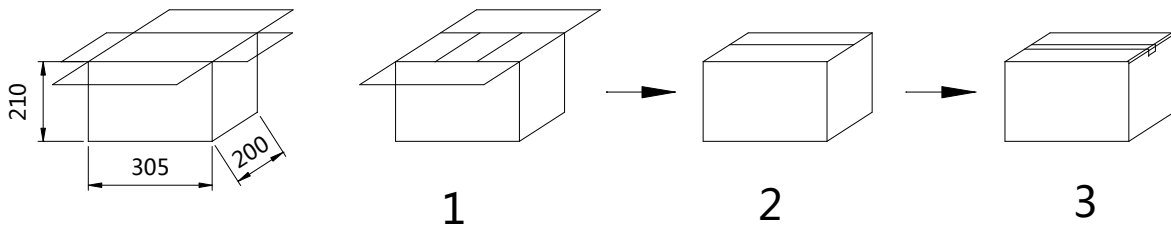
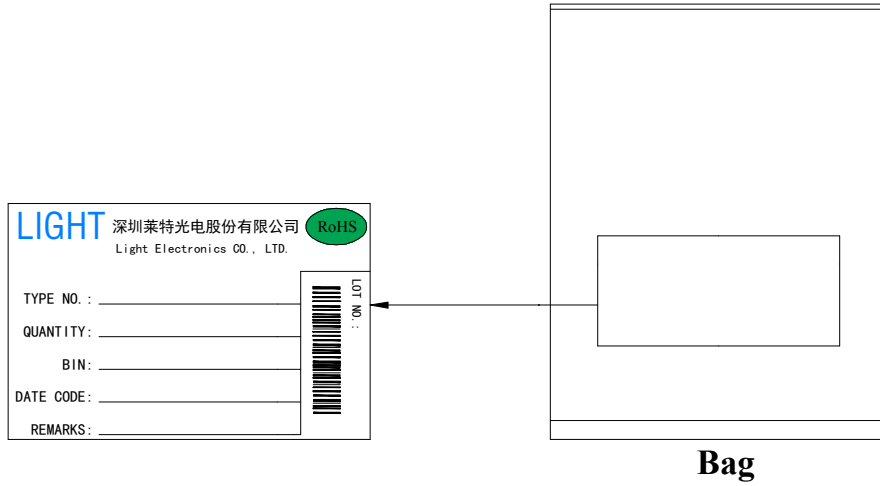
Note: 1. Pulse width $\leq 0.1\text{msec}$, duty cycle $\leq 1/10$.

Electrical Optical Characteristics at Ta=25°C

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

| 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 | --- | μs | $V_{CC}=5V$ $R_L=1K\Omega$ $I_C=1mA$ |
| Fall Time | T_f | --- | 15 | --- | μs | |
| 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 | $V_{CE}=5V$ $I_F=20mA$ |

PACKAGE



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