





### 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.



### Electrical Optical Characteristics at Ta=25

| Input           |        |      |      |      |               |                   |
|-----------------|--------|------|------|------|---------------|-------------------|
| Parameter       | Symbol | Min. | Typ. | Max. | Unit          | Test Condition    |
|                 |        |      |      |      |               | $f=50\text{mA}$   |
| 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    | $I_C=0.1\text{mA}$<br>$E_e=0\text{mW/cm}^2$     |
| Emitter-Collector Breakdown Voltage  | $BV_{ECO}$    | 5    | ---  | ---  | V    | $I_E=0.1\text{mA}$<br>$E_e=0\text{mW/cm}^2$     |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | ---  | ---  | 0.4  | V    | $I_C=2\text{mA}$<br>$E_e=1.0\text{mW/cm}^2$     |
| Rise Time                            | $T_r$         |      |      |      |      | $V_{CC}=5\text{V}$<br>$R_L$<br>$I_C=1\text{mA}$ |
| Fall Time                            | $T_f$         |      |      |      |      |                                                 |
| Collector Dark Current               | $I_{CEO}$     | ---  | ---  | 100  | nA   | $V_{CE}=10\text{V}$<br>$E_e=0\text{mW/cm}^2$    |
| On State Collector Current           | $I_{C(ON)}$   | 1.0  | 5.0  | ---  | mA   | $V_{CE}=5\text{V}$<br>$I_F=20\text{mA}$         |

## PACKAGE

| Bag volume<br>(pcs / Bag) | Outer Carton volume<br>(Bag / Carton) |
|---------------------------|---------------------------------------|
| TBD                       | TBD                                   |