HUIYUAN OPTO-ELECTRONIC CO.,LTD.

# TECHNOLOGY DATA SHEET & SPECIFICATIONS

**MODEL：5013M1C**

## Features

·Fast response time

·High photo sensitivity

·Small junction capacitance

·Pb free

## Descriptions

5013M1C is a high speed and high sensitive PIN photodiode in a standard 5Φplastic package.

The device is sensitive to visible and infrared radiation.

## Applications

□Automatic door sensor

□Camera

□Game machine

□High speed photo detector

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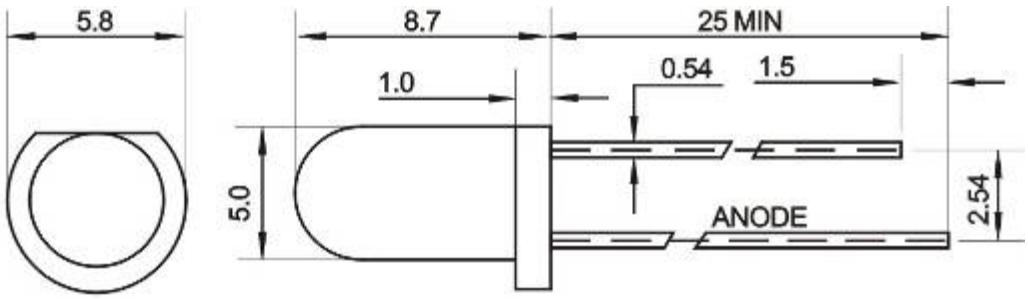
## Device Selection Guide

| LED Part No. | Chip Material | Lens Color |
|---|---|---|
| 5013M1C | Silicon | Water Clear |

## Package Dimensions




UNIT:mm

## Notes:

1.All dimensions are in millimeters
2.Tolerances unless dimensions ±0.1mm

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## Electro-Optical Characteristics ($T_a$=25□)

| Parameter | Symbol | Min. | TYP. | Max. | Unit | Condition |
|---|---|---|---|---|---|---|
| Rang Of Spectral Bandwidth | λ | 840 | --- | 1100 | nm | --- |
| Wavelength of Peak Sensitivity | λP | --- | 940 | --- | nm | --- |
| Collector-Emitter Breakdown Voltage | VBR CEO | 30 | --- | --- | V | IC=100μA IB=0 |
| Emitter-Collector Breakdown Voltage | VBR ECO | 5 | --- | --- | V | IE=100μA IB=0 |
| Collector-Emitter Saturation Voltage | VCE (SAT) | --- | --- | 0.4 | V | IC=0.1mA H=2.5mW/c ㎡ |
| Collector Dark Current | ID | --- | --- | 100 | nA | VCE=10V H=0mW/c ㎡ |
| Rise Time (10% to 90%) | TR | --- | 10 | --- | μs | VCE=5V IC=1mA |
| Fall Time (90% to 10%) | TF | --- | 10 | --- | μs | RL=100Ω |
| On State Collector Current | I(ON) | --- | 4 | --- | mA | VCE=5V Ee=1mW/c ㎡ λ=940nm |
| View Angle | 2θ1/2 | --- | 45 | --- | deg | IF=20mA λ=940nm |

## Note:

1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2. θ1/2 is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

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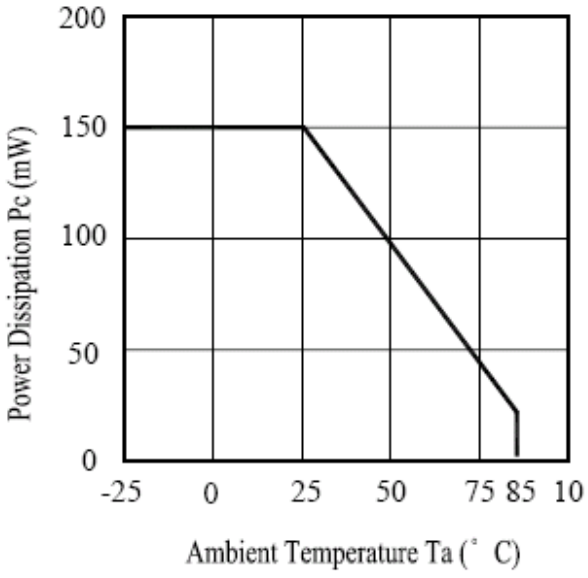
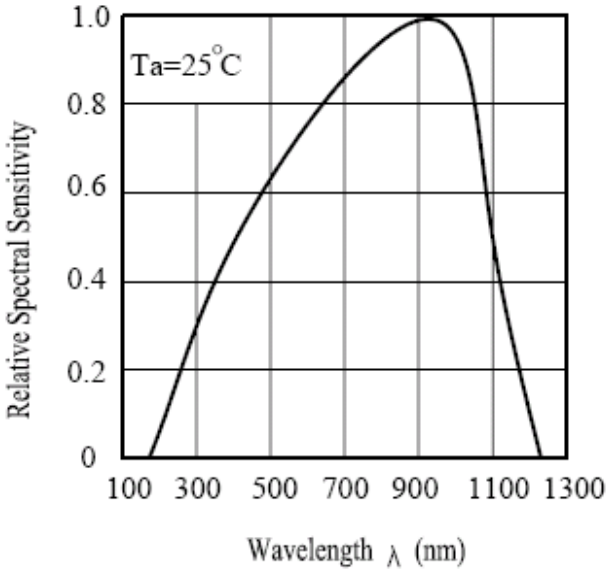
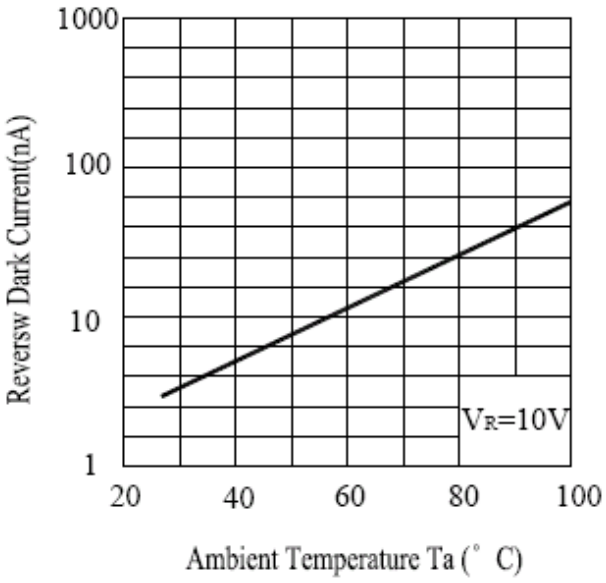
## Typical Electro-Optical Characteristics Curves



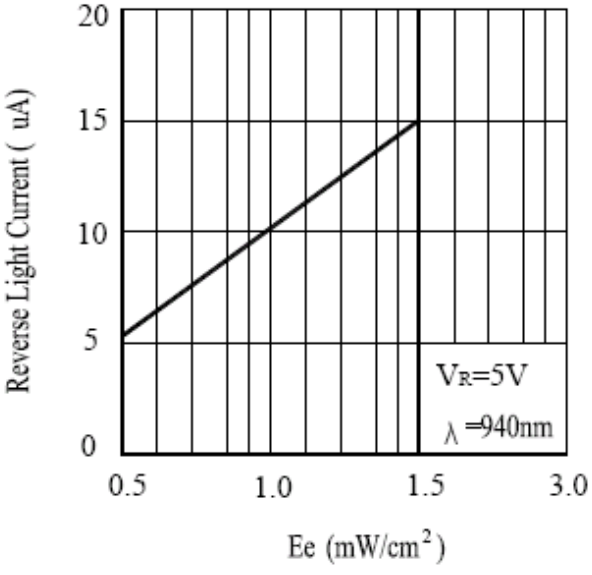

Power Dissipation vs Ambient Temperature




Spectral Sensitivity




Dark Current vs Ambient Temperature




Reverse Light Current vs. Ee

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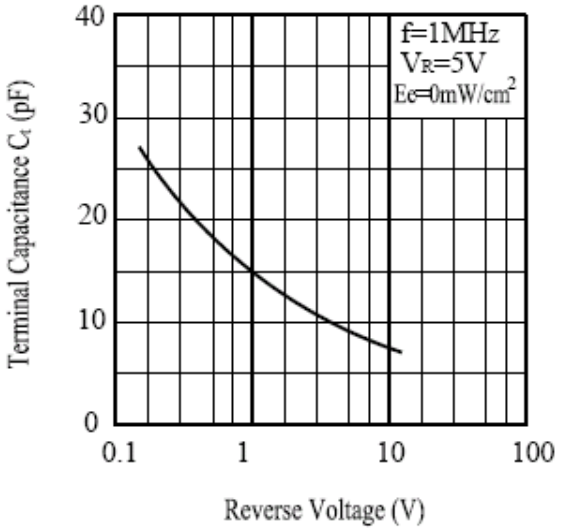
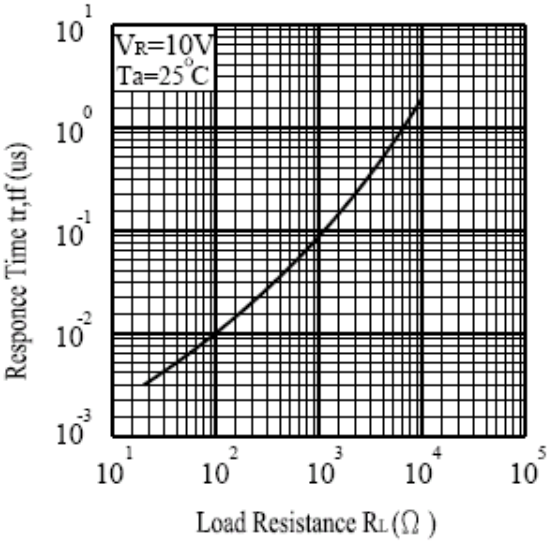



Terminal Capacitance vs.
Reverse Voltage




Response Time vs.
Load Resistance

## Notes

1. Above specification may be changed without notice. HYLED will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. HYLED assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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