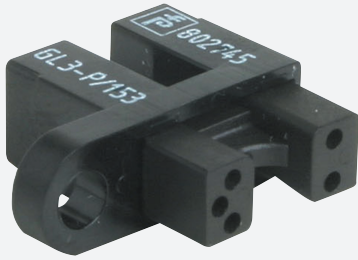


# Photoelectric slot sensor GL3-P/153



- Miniature design
- Optimized for the detection of small parts
- High switching frequency

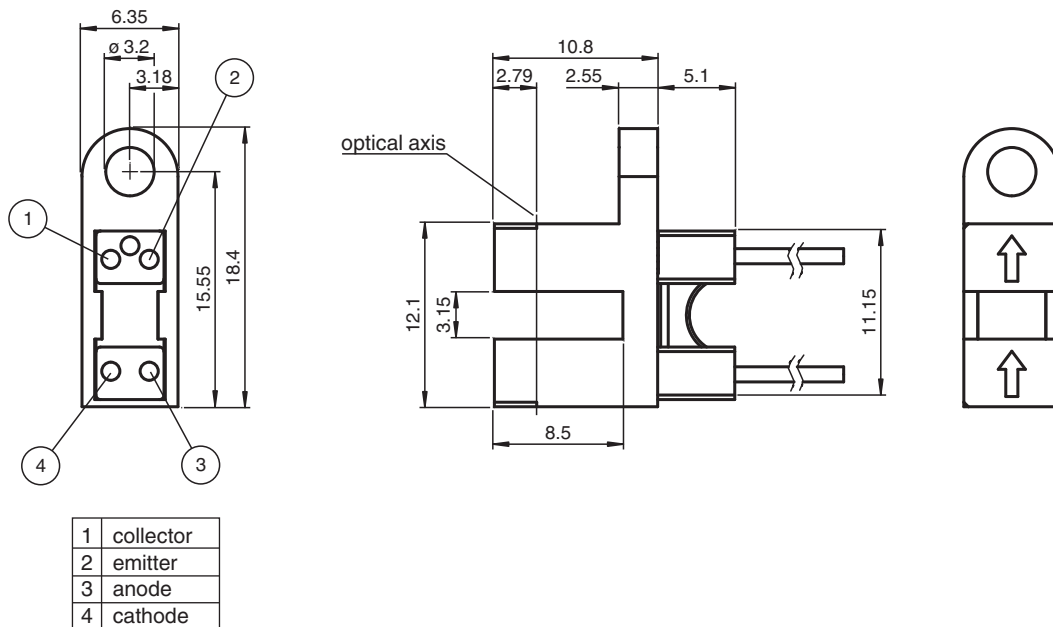
Miniature photoelectric slot sensor for the detection of small parts, P-shaped housing design, 3.15 mm slot width, infrared light, NPN outputs, fixed cable



## Function

The GL2 & GL3 miniature slot sensor is the smallest slot sensor in its family optimized to the requirements in semiconductors industry for small part detection. A wide voltage range of 5 V DC ... 30 V DC and a extreme fast response time of 25  $\mu$ s stands for the quality of this sensor. The GL2 & GL3 sensor can be directly connected to a comparator or Schmitt-trigger circuit. Due to a variety of different housings and an optimized housing concept offers the sensor a maximum of freedom in a crowded mounting environment.

## Dimensions



## Technical Data

### General specifications

|              |               |
|--------------|---------------|
| Light source | IRED , 940 nm |
| Light type   | IRED          |
| Slot width   | 3.15 mm       |

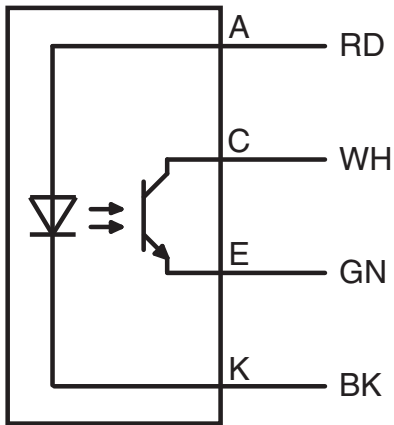
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## Technical Data

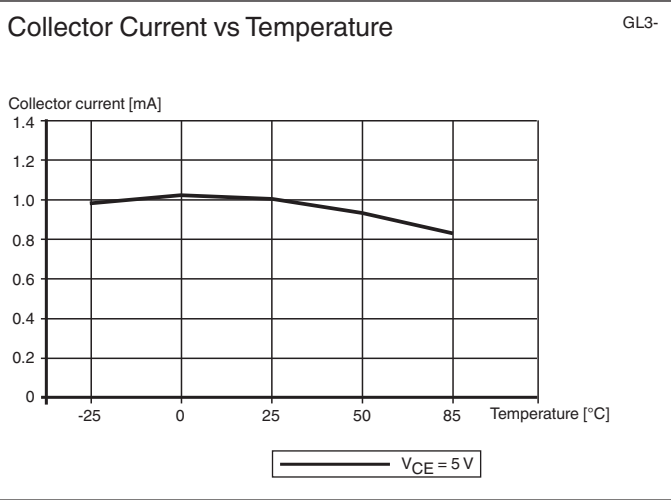
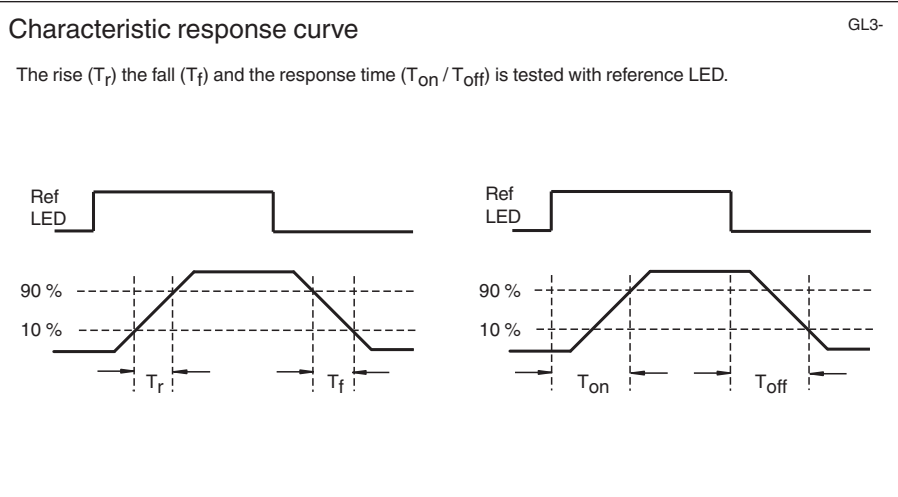
|   |                  |  |
|---|------------------|--|
| Slot depth                                  |                  | 3.15 mm  |
| Ambient light limit                         |                  | 1000 Lux   |
| <b>Functional safety related parameters</b> |                  |  |
| MTTF <sub>d</sub>                           |                  | 44332 a  |
| Mission Time (T <sub>M</sub> )              |                  | 20 a   |
| Diagnostic Coverage (DC)                    |                  | 0 %  |
| <b>Electrical specifications</b>            |                  |  |
| Operating voltage                           | U <sub>B</sub>   | 5 ... 30 V DC  |
| Ripple                                      |                  | 10 %   |
| <b>Emitter</b>                              |                  |  |
| Light type                                  |                  | 940 nm IR light  |
| Forward voltage                             | V <sub>F</sub>   | < 1.6 V  |
| Peak forward voltage                        | V <sub>FM</sub>  | 30 V   |
| Forward current                             | I <sub>F</sub>   | 50 mA  |
| Reverse voltage                             | V <sub>R</sub>   | 5 V  |
| Reverse current                             | I <sub>R</sub>   | ≤ 10 μA  |
| Power dissipation                           |                  | 75 mW  |
| <b>Receiver</b>                             |                  |  |
| Output type                                 |                  | NPN  |
| C-E breakdown voltage                       | V <sub>CEO</sub> | 30 V   |
| E-C breakdown voltage                       | V <sub>ECO</sub> | 5 V  |
| Collector dark current                      | I <sub>CEO</sub> | < 1 μA   |
| Collector DC current                        | I <sub>C</sub>   | 20 mA  |
| Power dissipation                           | P <sub>D</sub>   | 75 mW  |
| <b>Output</b>                               |                  |  |
| Signal output                               |                  | 1 NPN , photo transistor                                     |
| Switching voltage                           |                  | max. 30 V DC   |
| Switching current                           |                  | 20 mA  |
| Response time                               |                  | 25 μs  |
| <b>Approvals and certificates</b>           |                  |  |
| EAC conformity                              |                  | TR CU 020/2011   |
| CCC approval                                |                  | CCC approval / marking not required for products rated ≤36 V |
| <b>Ambient conditions</b>                   |                  |  |
| Ambient temperature                         |                  | -20 ... 85 °C (-4 ... 185 °F)                                |
| Storage temperature                         |                  | -40 ... 85 °C (-40 ... 185 °F)                               |
| <b>Mechanical specifications</b>            |                  |  |
| Core cross section                          |                  | 4 x 0.08 mm <sup>2</sup>                                     |
| Degree of protection                        |                  | IP30   |
| Connection                                  |                  | 610 mm, PVC cable ,<br>Individual colored wires              |
| <b>Material</b>                             |                  |  |
| Housing                                     |                  | PC   |
| Mass  |                  | 7 g  |
| <b>Dimensions</b>                           |                  |  |
| Height                                      |                  | 18.4 mm  |
| Width                                       |                  | 6.35 mm  |
| Depth                                       |                  | 15.9 mm  |

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### Connection Assignment

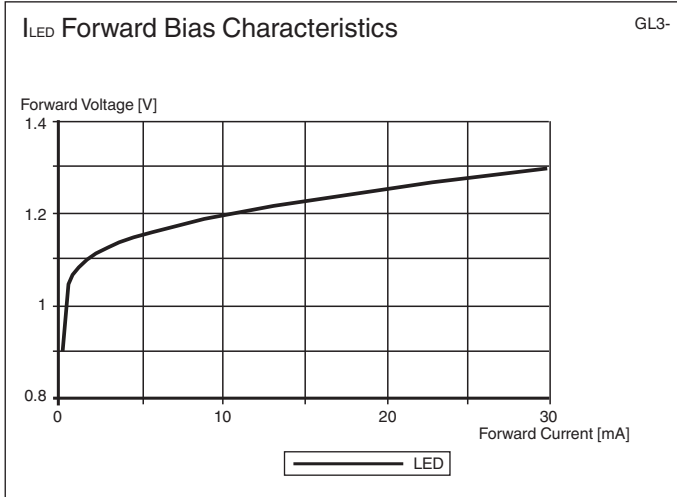
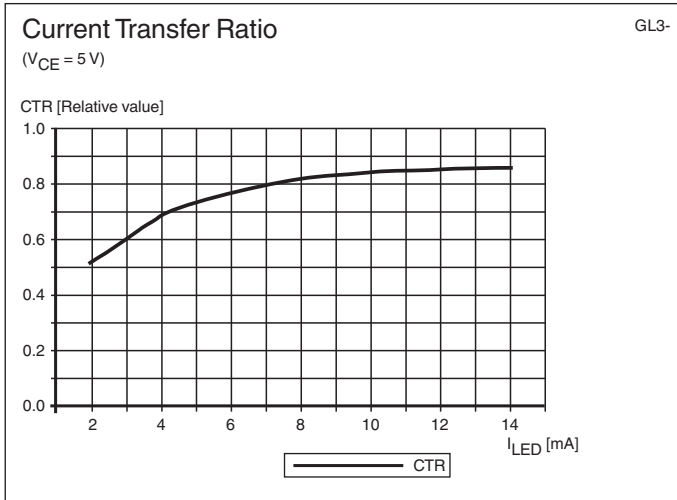
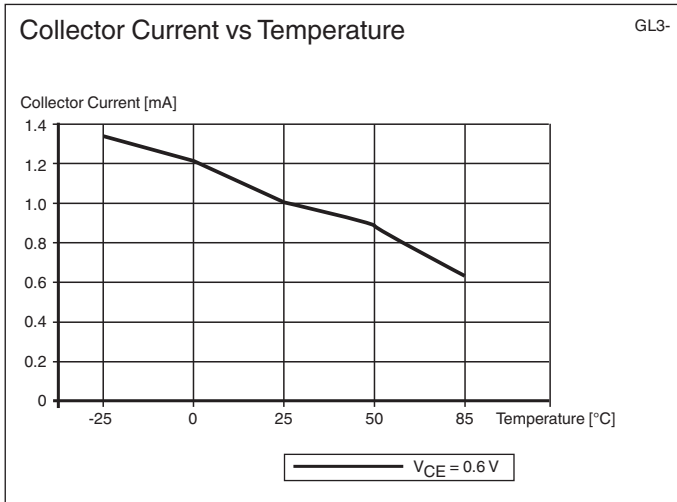


### Characteristic Curve



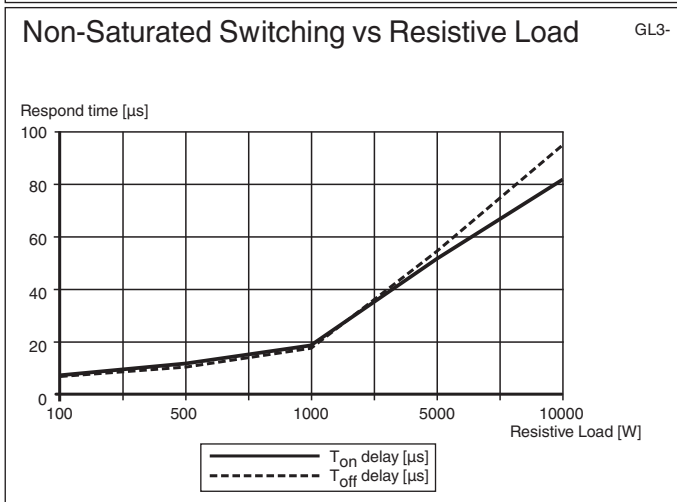
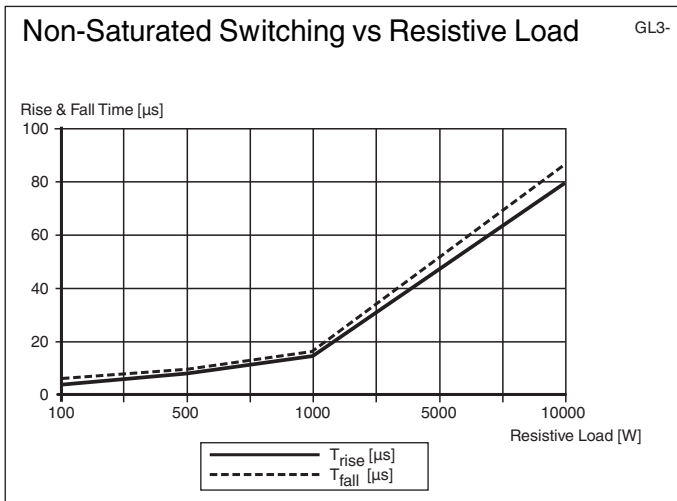
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Characteristic Curve



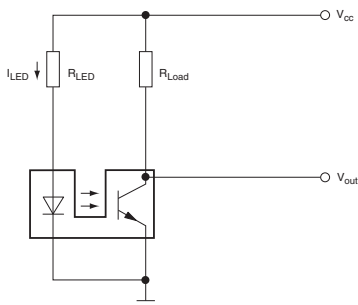
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Characteristic Curve



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**Connection example**



**3 simple steps:**

- Choose power supply
- Choose LED current (set resistor  $R_{LED}$ )
- Choose load current (set resistor  $R_{LOAD}$ )

**Possible connections**

|  |   |
|--|---|
|  |   |
| <p>Circuit with voltage comparator</p> | <p>Circuit with additional transistor</p> |
|  |   |
| <p>Circuit with Op Amp</p>             | <p>Circuit with PNP transistor output</p> |

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