

Photoelectric slot sensor GL3-P/153



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

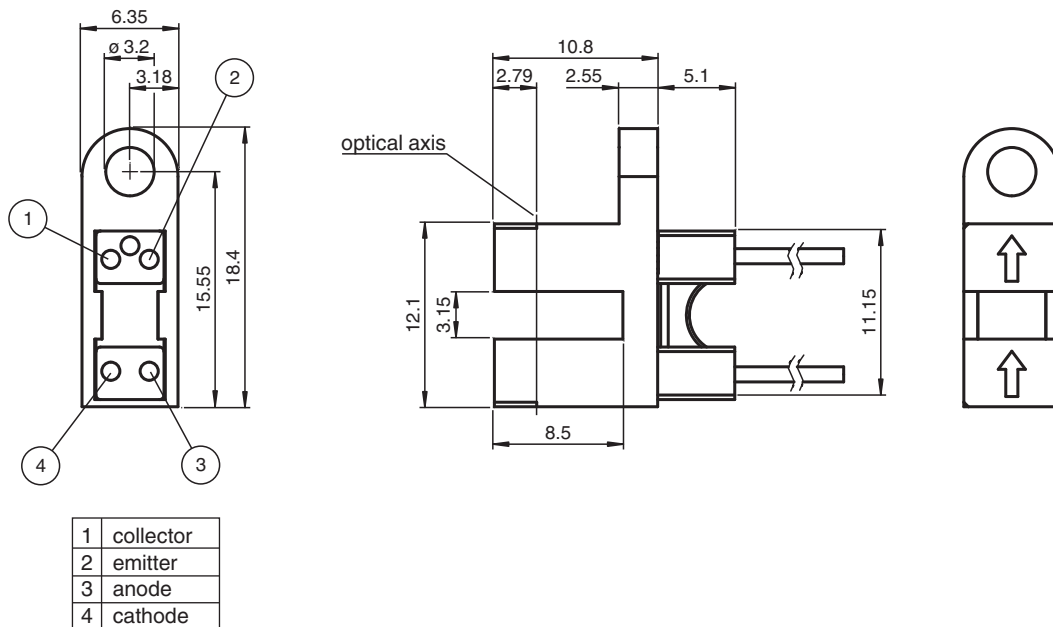
Miniature photoelectric slot sensor for the detection of small parts, P-shaped housing design, 3.15 mm slot width, infrared light, NPN outputs, fixed cable



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 μ 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

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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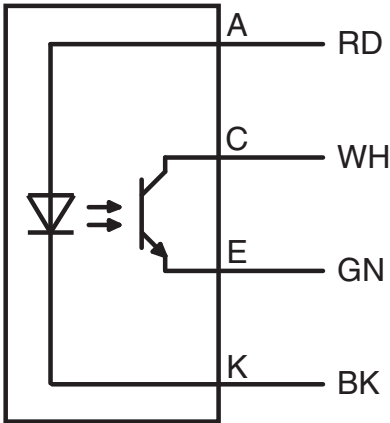
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Technical Data

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

Connection Assignment

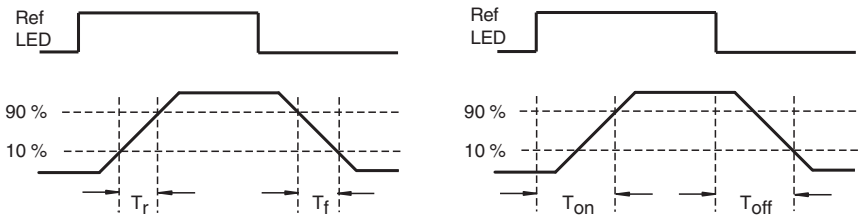


Characteristic Curve

Characteristic response curve

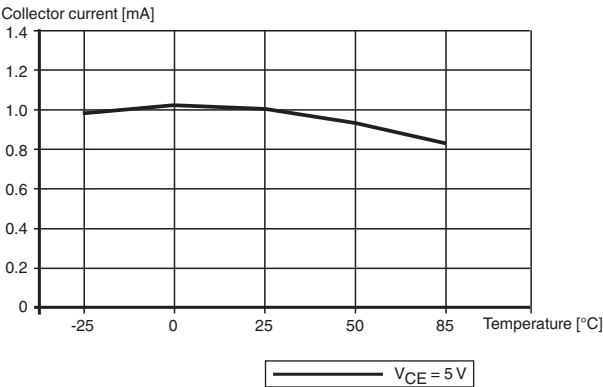
GL3-

The rise (T_r) the fall (T_f) and the response time (T_{on} / T_{off}) is tested with reference LED.



Collector Current vs Temperature

GL3-

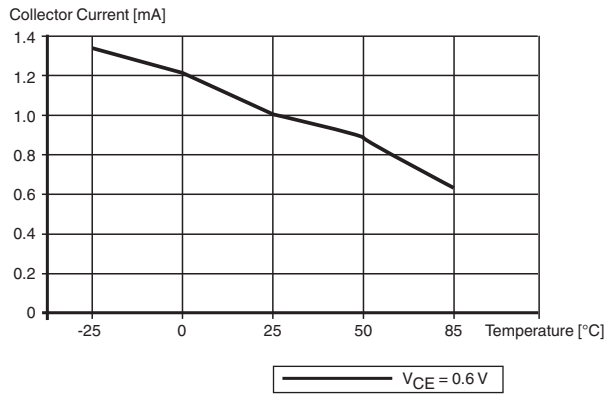


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Characteristic Curve

Collector Current vs Temperature

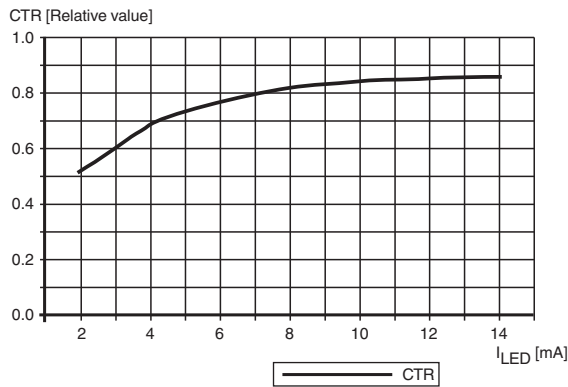
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Current Transfer Ratio

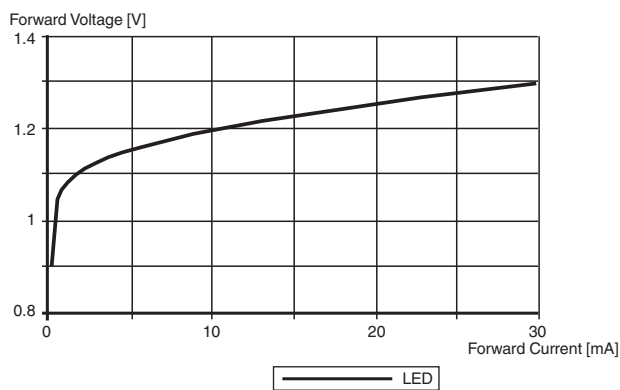
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($V_{CE} = 5\text{ V}$)

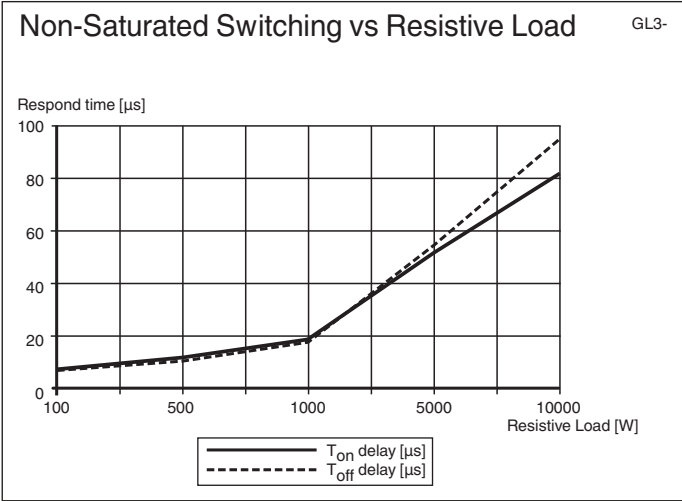
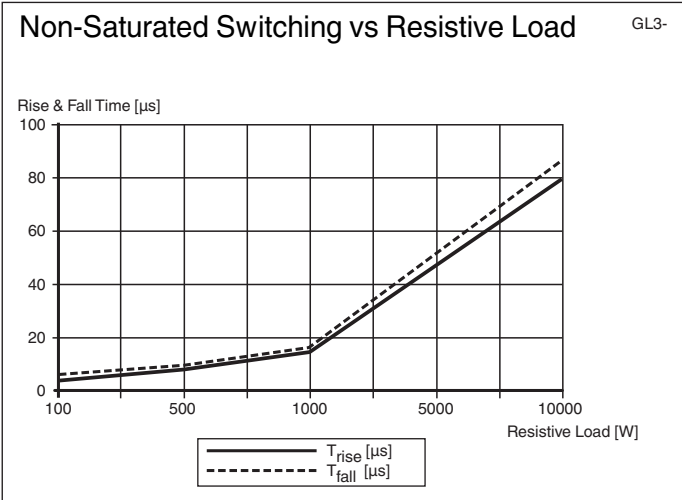


I_{LED} Forward Bias Characteristics

GL3-

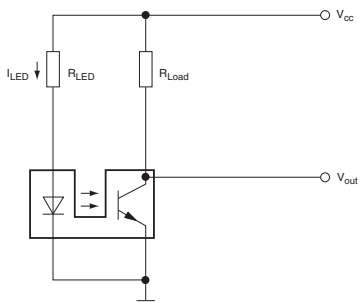


Characteristic Curve



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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

Circuit with voltage comparator	Circuit with additional transistor
Circuit with Op Amp	Circuit with PNP transistor output

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