



DATA SHEET

<b>UV - Photodiode with integrated amplifier</b>	<b>JIC 149 L JIC 149 L-1</b>
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- characteristics :**
- ◆ SiC-Photodiode with integrated current/voltage converter
  - ◆ very high UV-responsivity
  - ◆ enlargement of effective chip area by integrated lense
  - ◆ very low visible and IR responsivity
  - ◆ extra sensor pin for external adjustment of gain and bandwidth
  - ◆ single supply voltage
  - ◆ low current consumption
  - ◆ sensor assembly isolated to ground
  - ◆ replacement for SFH 530 (Osram), but with better characteristics
  - ◆ option „-1“ with higher bandwidth
  - ◆ components are in conformity with RoHS and WEEE

- applications :**
- ◆ selective UV-measurements
  - ◆ flamedetection and -control
  - ◆ control of UV-lamps in water and surface disinfection
  - ◆ control of UV-lasers
  - ◆ control of irradiancy in varnish and adhesive hardening

**absolute maximum ratings :**

- ◆ supply voltage +5,5 V
- ◆ operating temperature range -25 °C ... +85 °C
- ◆ storage temperature range -40 °C ... +100 °C
- ◆ welding temperature (5s) 300 °C

**technical data :**

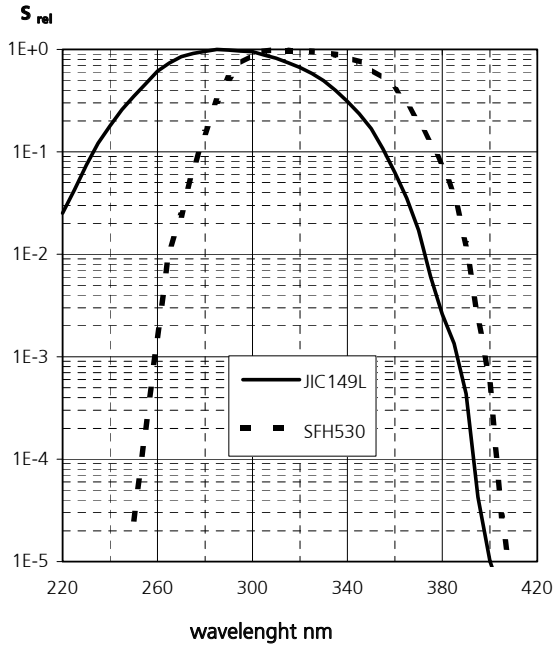
common test conditions, as not otherwise specified:  $T_A = 25\text{ °C}$ ,  $V_S = +5\text{ V}$

parameter	test condition	JIC149L	JIC149L-1	unit
active area <sup>1)</sup>		11	11	mm <sup>2</sup>
feedback resistor		1,0	1,0	GΩ
dark offset voltage	E = 0 lx	± 0,5 (± 2)	± 0,5 (± 2)	mV
noise voltage	B = 1 kHz	0,1	0,5	mV <sub>rms</sub>
maximum of spectral responsivity	S = S <sub>max</sub> λ = 285 nm	30	30	mV/nW
spectral responsivity	λ = 310 nm	270 (180-400)	270 (180-400)	mV/ nW/mm <sup>2</sup>
selectivity	S <sub>400-1200nm</sub> / S <sub>310nm</sub>	< 10 <sup>-4</sup>	< 10 <sup>-4</sup>	
rise time		20	0,6	ms
bandwidth	- 3 dB	15	500	Hz
opening angle	S=0,5*S <sub>max</sub>	± 5	± 5	Grad
saturation voltage	R <sub>L</sub> = 2 kΩ	+ 4,95	+ 4,95	V
short current		± 50	± 50	mA
operating voltage		+2,7...+5	+2,7...+5	V
current consumption		750 (1100)	750 (1100)	μA

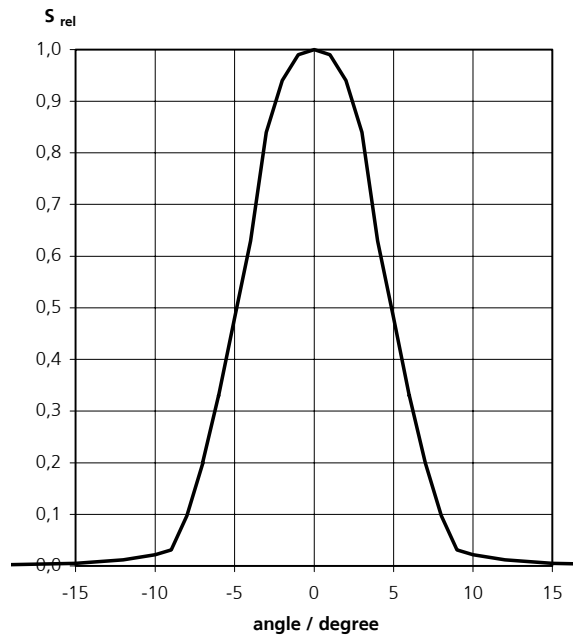
<sup>1)</sup> effektive active area because of focusing of light by the lense

# JIC 149 L, JIC 149 L-1

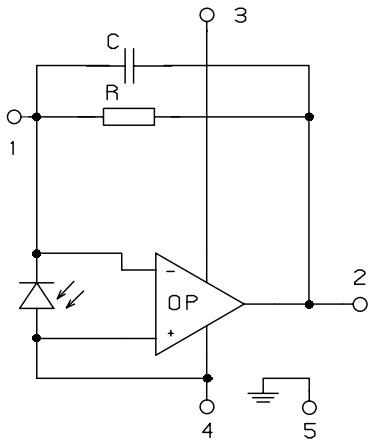
## relative spectral responsivity



## response characteristic

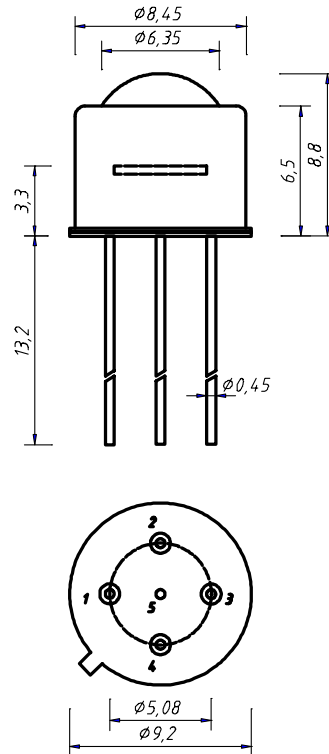


## internal circuit



- 1  $R_f$
- 2 Out
- 3  $V_s$
- 4 GND
- 5 Case

## package dimension



## applicartion hints:

- If an external resistor for reduction of gain is used, please make sure that length of connectors is as short as possible to reduce noise and capacitive interference.
- If internally adjusted gain is used only, please cut pin „1“.