

UV - Photodiode with integrated amplifier

JIC 149 L
JIC 149 L-1



- characteristics :**
- ◆ SiC-Photodiode with integrated current/voltage converter
 - ◆ very high UV-responsivity
 - ◆ enlargement of effective chiparea 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 ¹⁾		11	11	mm ²
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 _{rms}
maximum of spectral responsivity	S = S _{max} λ = 285 nm	30	30	mV/nW
spectral responsivity	λ = 310 nm	270 (180-400)	270 (180-400)	mV/ nW/mm ²
selectivity	S _{400-1200nm} / S _{310nm}	< 10 ⁻⁴	< 10 ⁻⁴	
rise time		20	0,6	ms
bandwidth	- 3 dB	15	500	Hz
opening angle	S=0,5*S _{max}	± 5	± 5	Grad
saturation voltage	R _L = 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

¹⁾ effektive active area because of focusing of light by the lense

rev2 (03/2009)

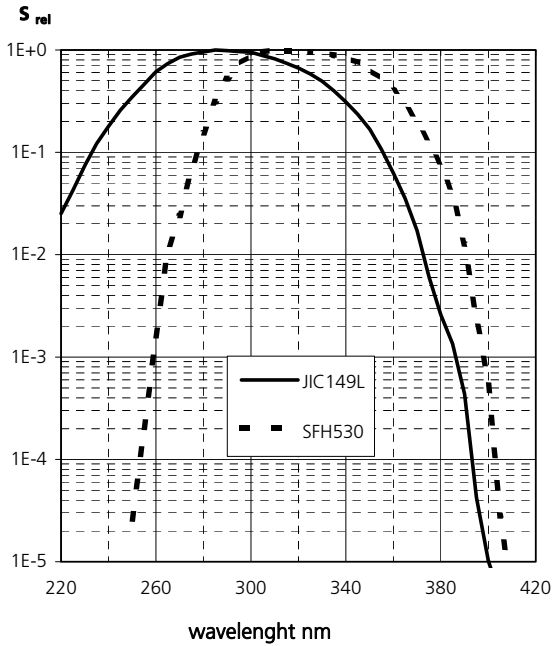
For more information:

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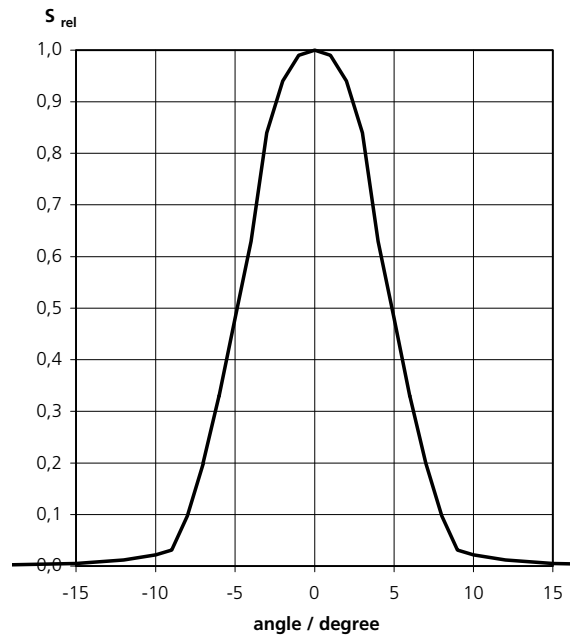
DATA SHEET

JIC 149 L, JIC 149 L-1

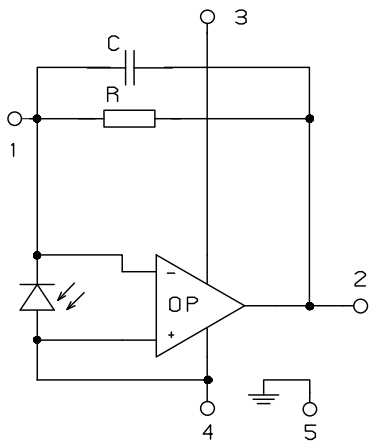
relative spectral responsivity



response characteristic

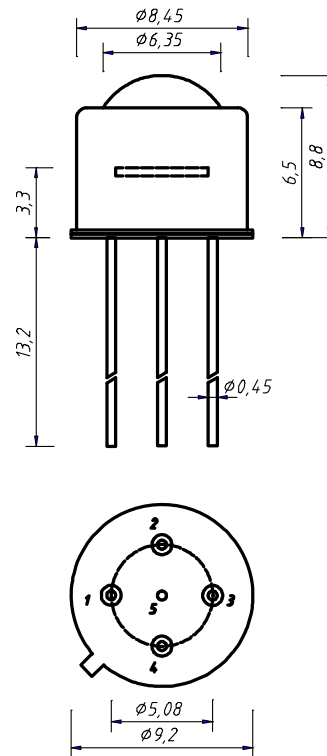


internal circuit



- 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 lenght of connectors is as short as possible to reduce noise and capacitive interference.
- If internally adjusted gain is used only, please cut pin „1“.