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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 :

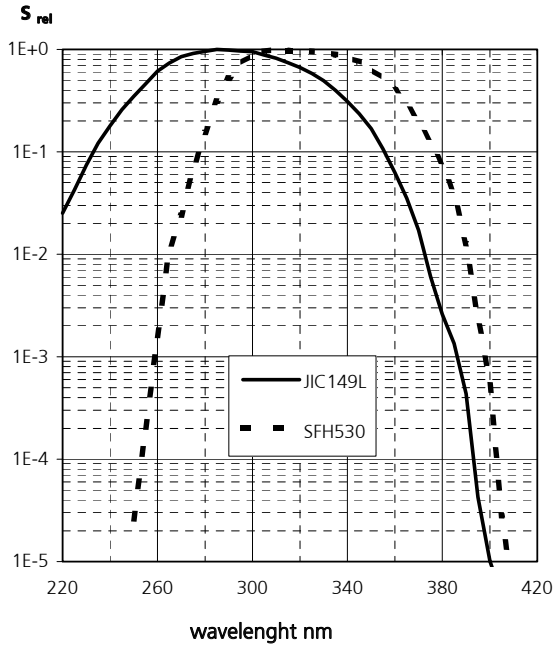
common test conditions, as not otherwise specified: T_A = 25 °C, V_S = +5 V

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

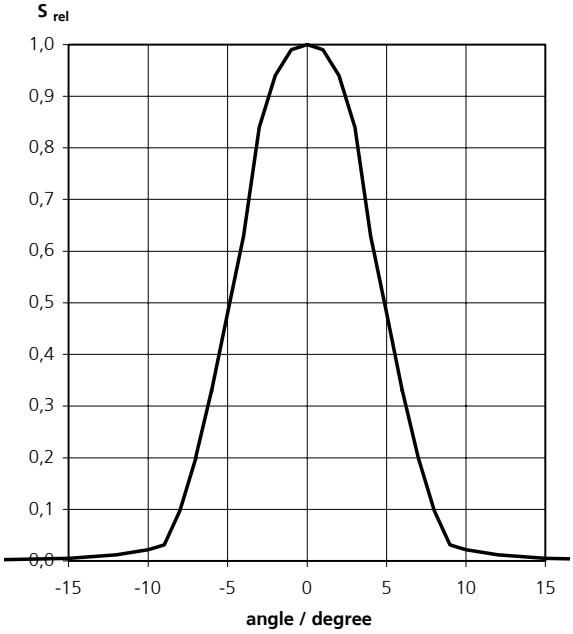
[1)] effektive active area because of focusing of light by the lense

DATA SHEET

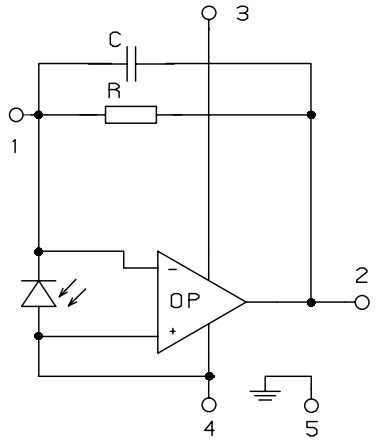
relative spectral responsivity



response characteristic

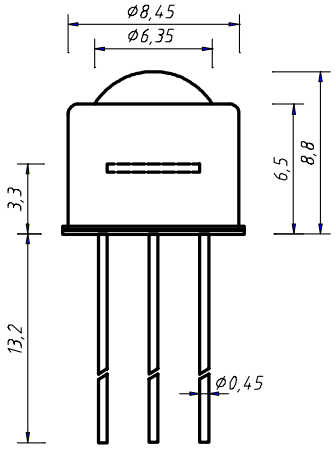


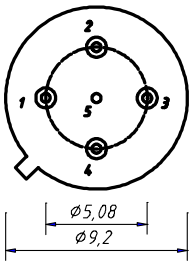
internal circuit



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 capacative interference.
- If internally adjusted gain is used only, please cut pin „1".