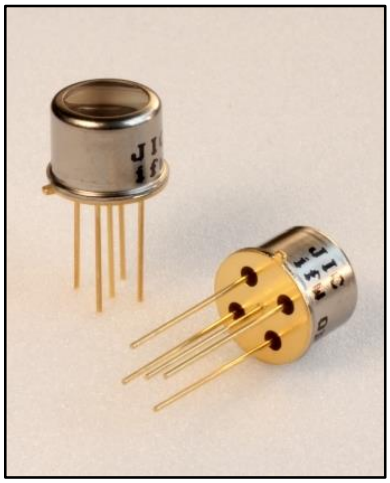
SiC-Photodiode with Integrated Amplifier and Spectral Filter
JIC16xC; JIC16xBC; JIC16xB



Characteristics :

- integrated spectral filter for UVC-, UVB- und UVBC-range
- custom filter characteristics on request
- active area: 0,965 mm²
- decadic staggered sensitivity:
  Transimpedance-code: x=7: 10 MΩ / x=8: 100 MΩ / x=9: 1000 MΩ
- extra sensor pin for external adjustment of gain and bandwidth
- single supply voltage
- sensor assembly isolated from case
- hermetically welded TO5-metal/glass package
- RoHS und WEE conform

Applications :

- selective measurement of the UV region with spectral restriction
- control of UV-lamps
- flame detection
- solar UV-index measurements

Absolute Maximum Ratings :

♦ supply voltage	5,5 V
♦ working temperature	- 25 °C ... 85 °C
♦ storage temperature	- 40 °C ... 100 °C
♦ soldering temperature (5s)	300 °C

Technical Specifications :

Parameter	Test conditions	JIC167f [1)]	JIC168f [1)]	JIC169f [1)]	Unit
Transimpendance		10	100	1.000	MΩ
dark offset voltage	E = 0 lx	± 1	± 2	± 3	mV
noise voltage	B = 1 kHz	1			mV_{rms}
max. spectral responsivity S_{max}	$\lambda = \lambda_p$	0,1	1	10	multiplicator[2)]
rise time		30	150	600	µs
bandwidth	- 3 dB	10	2	0,5	kHz
saturation voltage	R_L = 2 kΩ	+ 4,95 (+ 4,8)			V
short circuit current		± 50			mA
supply voltage		+ 2,7 ... + 5			V
current consumption		750 (1100)			µA

common test conditions, if not specified otherwise: T_A = 25 °C, V_S = +5 V
typical values, maximum values in brackets
[1)]: f: filter variant UV-C, UV-BC or UV-B
[2)]: see S_{max} in table „spectral specifications“

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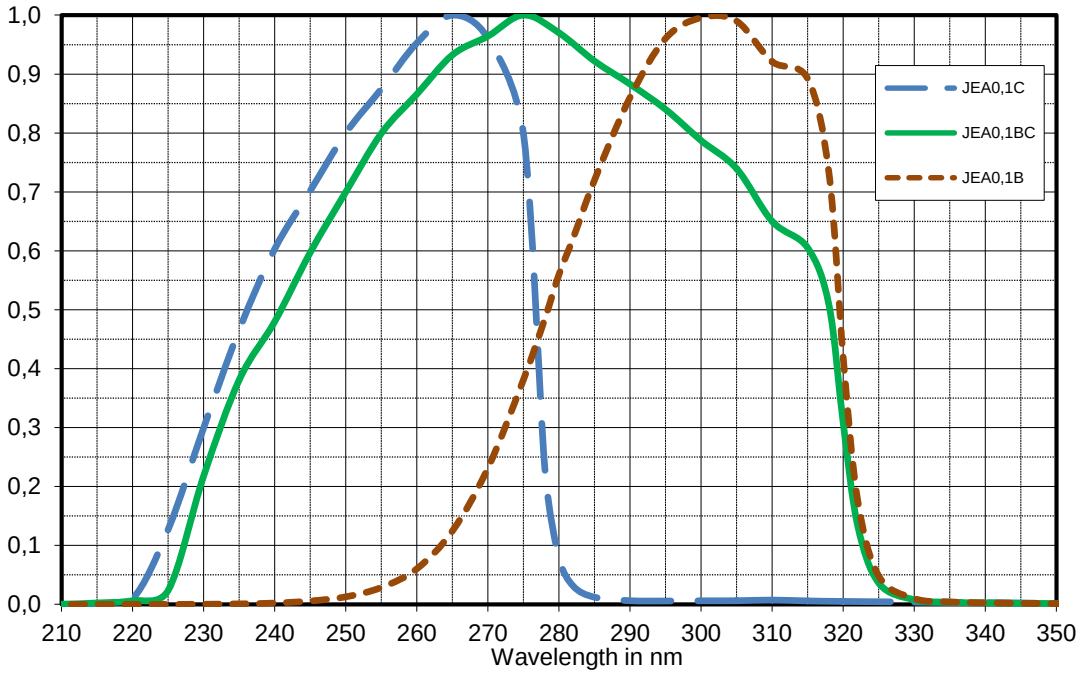
Relative Spectral Sensitivity



Spectral Specifications :

Parameter		Test conditions	JIC16xC	JIC16xBC	JIC16xB	Unit
spectral range	λ_{min} λ_{max}	S = 0,1 * S_{max}	225 280	228 322	265 322	nm nm
wavelength of max. sensitivity λ_p		S = S_{max}	265	275	305	nm
max. spectral sensitivity S_{max}		$\lambda = \lambda_p$ x=8: 100 MΩ [1)]	10	12	7	mV/nW
Sensitivity for Hg-LP-lamps		λ = 254 nm	9	8	< 0,3	mV/nW
field of view		S = 0,5 * S_{max}	±45			Grad

common test conditions, if not specified otherwise: T_A = 25 °C , typical values

[1)] other gain-settings: see S_{max} in table “technical specifications”

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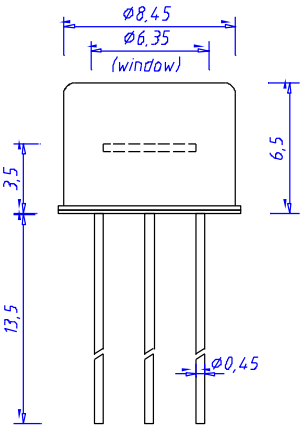
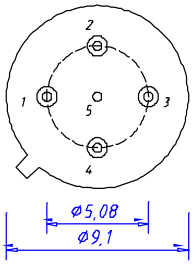
Case Dimensions



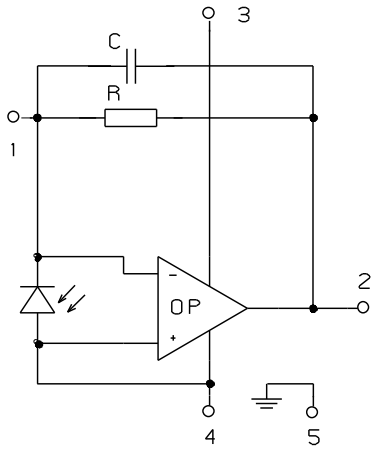
pin configuration:

1 R_F
2 Out
3 V_S
4 GND
5 Case



bottom view

Application Example



If an external resistor for gain reduction between pin “1” and “2” is used, it is good practice to keep the connector-length as short as possible to reduce noise incoupling and capacative interference.

If the internally adjusted gain is used only, it is good practice to cut pin “1“.

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