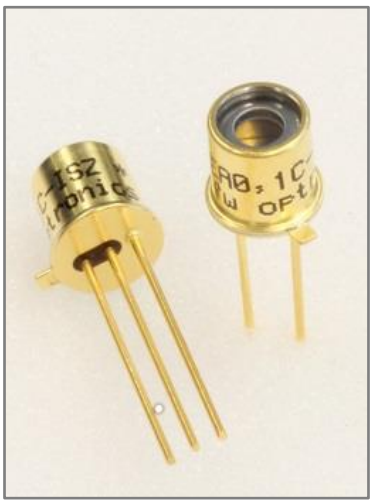
SiC-Photodiode with integrated UV-A filter
JEA0,1A-S · JEA0,1A-350-S · JEA0,1A-365-S

Characteristics :



- full range UV-A sensor up to 400 nm
- active area: 0,1 mm²
- different filter shapes for the UV-A range
- further UV-A filter options available
- hermetically sealed TO18-package
- UT-option for extended operating temperature range 250°C
- RoHS, REACH and WEEE conform

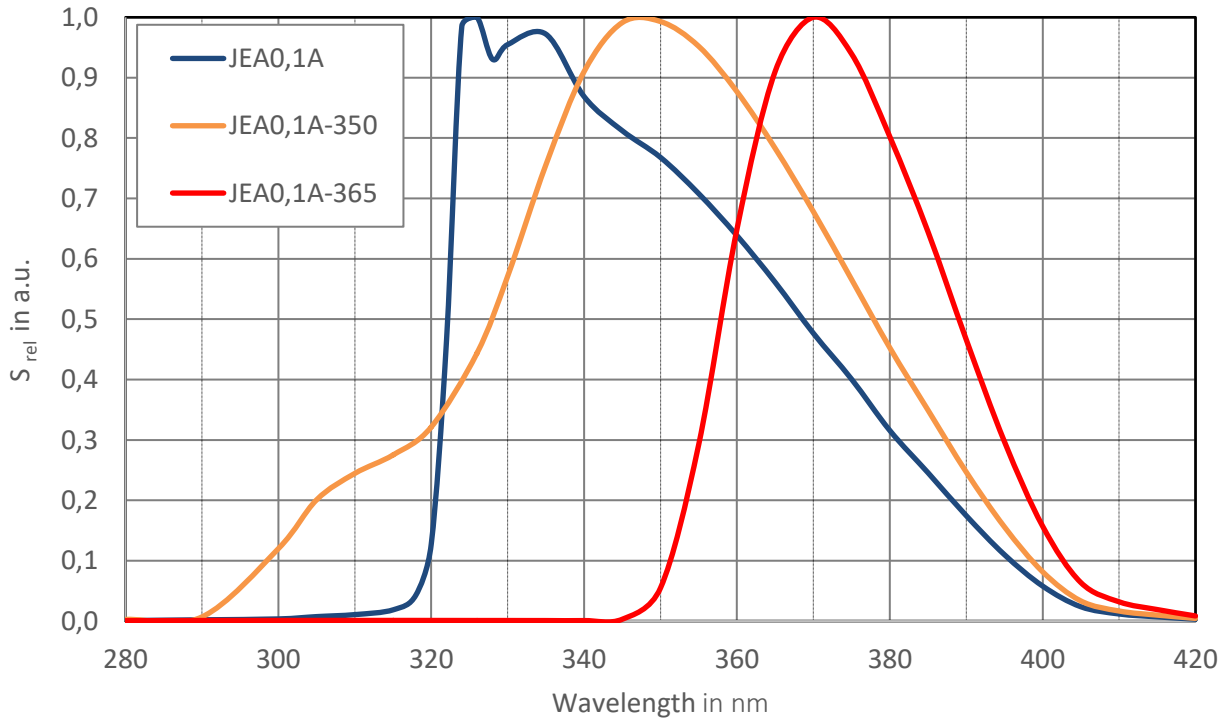
Applications :

- general UV-A measurements
  with optional bandwidth reduction and weigthing
- control of epoxy hardening
- solar measurements

Absolute maximum ratings :

♦ reverse voltage	20 V
♦ operating temperature range	- 40 °C ... 150 °C
♦ storage temperature range	- 40 °C ... 150 °C
♦ solder temperature (3s)	260 °C

Relative Spectral Responsivity S_{rel}:



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Technical data:

Parameter	Measuring-Condition	UV-A	UV-A-350	UV-A-365	Unit
active area		0,365 x 0,365			mm^2
spectral range λ_{short} λ_{long}	S = 0,1 * S_{max}	318 395	300 400	350 400	nm nm
wavelength of maximum responsivity λ_{Smax}		330	350	365	nm
maximum responsivity S_{max}	$\lambda = \lambda_{Smax}$	0,14	0,10	0,05	A/W
dark current I_R	U_R = 1 V	10			fA
junction capacitance C_j	f = 10 kHz	10			pF
rise time t_r of photocurrent	10%/90% R_L = 50 Ω λ = 266 nm	1			ns
field of view	Anode isolated Cathode isolated A. + C. isolated	±20 ±25 ±30			degree
mass		0,5			Gramm
package drawing	Anode isolated Cathode isolated A. + C. isolated	TO18 TO18 TO18-isolated			

test conditions, as not otherwise specified: TA = 25 *C , U_R = 0 V, typical values

Versions:

Filter	Anode: isolated Cathode: case-pin	Cathode: isolated Anode: case-pin	Anode, Cathode: isolated Additional case-pin	Operating Temperature: 150 °C
UV-A	JEA0,1A-S	JEAC0,1A-S	JEA0,1A-ISZ	*-HT
UV-A-350	JEA0,1A-350-S	JEAC0,1A-350-S	JEA0,1A-350-ISZ	
UV-A-365	JEA0,1A-365-S	JEAC0,1 A-365-S	JEA0,1A-365-ISZ	

Further available packages:

Package	Partname	Datasheet
TO5	JEA0,1A/A-350/A-365	on request

Further available UV-A filters:

Filter	Spectral-range	Part	Datasheet
UV-AB	280-395 nm	JEA0,1AB-S	on request
UV-AB-4H	280-355 nm	JEA0,1AB-4H-S	on request
UV-A-4H	318-355 nm	JEA0,1A-4H-S	on request

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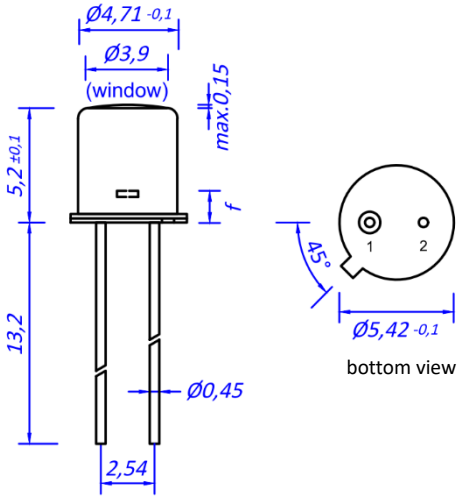
Package dimensions:

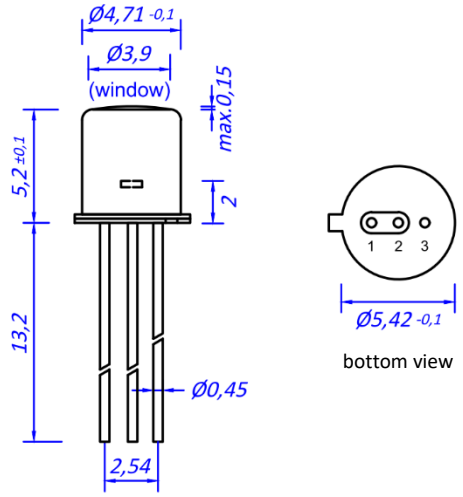
TO18



Anode isolated: Pin 1: Anode
Pin 2: Cathode + Case
f = 1,5 mm

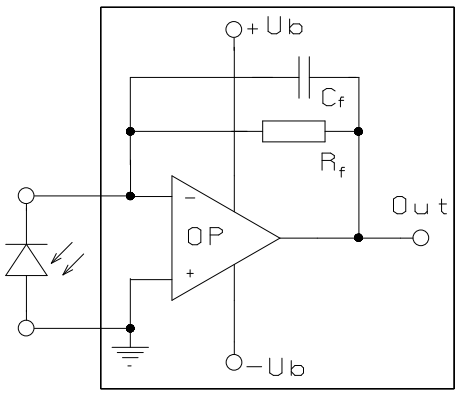
Cathode isolated: Pin 1: Cathode
Pin 2: Anode + Case
f = 1,75 mm

TO18 isolated

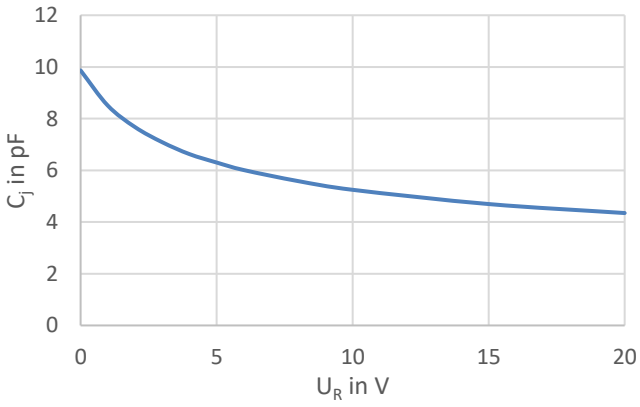


Anode + Cathode isolated: Pin 1: Anode
Pin 2: Cathode
Pin 3: Case

Application Example



Junction Capacitance C_j vs. Reverse Voltage U_R:



The application example shows a typical circuit R_f is responsible for the gain of the circuit C_f compensates the reverse junction capacitance of the photodiode and the input capacitance of the opamp. The exact value of C_f depends on R_f, used opamp and capacitance of the circuit. A typical value is 1pF.

The chart shows the typical dependence of junction capacitance C_j vs. applied revers voltage U_R.
Lower intrinsic capacitance can be used to increase the bandwith (lower the rise time) in electric circuits.

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