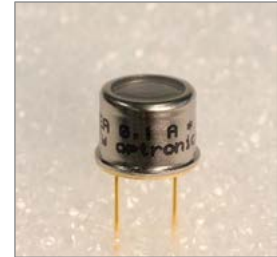


SiC-Photodiode with integrated UV-A filter JEA0,1A · JEA0,1A-350 · JEA0,1A-365

Characteristics :

- ◆ full range UV-A sensors 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 TO-package
- ◆ UT-option for extended operating temperature range 250°C
- ◆ RoHS, REACH and WEEE conform



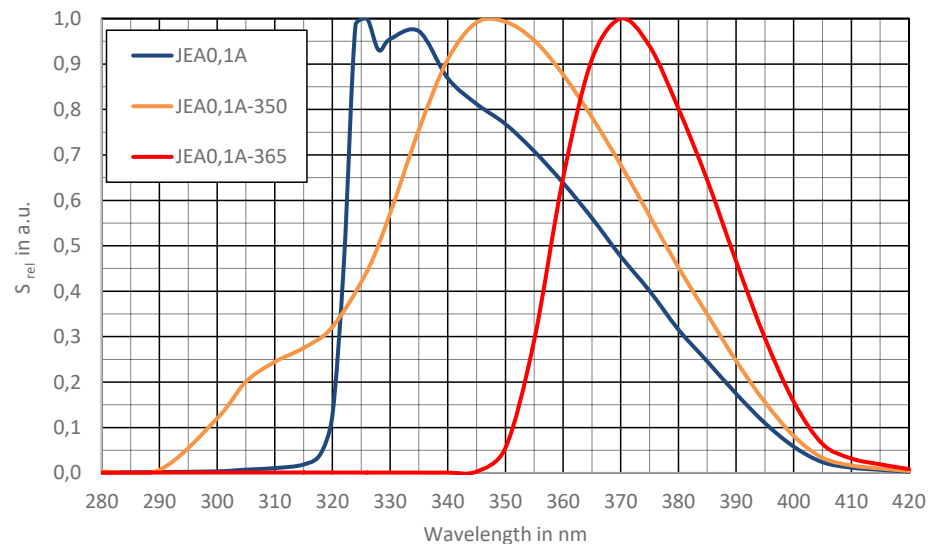
Applications :

- ◆ general UV-A measurements
with optional bandwidth reduction and weighing
- ◆ 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 |
| ◆ soldering temperature (3s) | 260 °C |

Relative Spectral Responsivity S_{rel} :



Rev. 2 (01/2021)

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

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% $R_L = 50 \Omega$ $\lambda = 266 nm$	1			ns
field of view	Anode isolated Cathode isolated A. + C. isolated	±30 ±27 ±28			degree
weight		1,1			gramm
drawing/package	Anode isolated Cathode isolated A. + C. isolated	TO5 TO5 TO5-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: 250 °C
UV-A	JEA0,1A	JEAC0,1A	JEA0,1A-I	*-UT
UV-A-350	JEA0,1A-350	JEAC0,1A-350	JEA0,1A-350-I	
UV-A-365	JEA0,1A-365	JEAC0,1 A-365	JEA0,1A-365-I	

Further available packages:

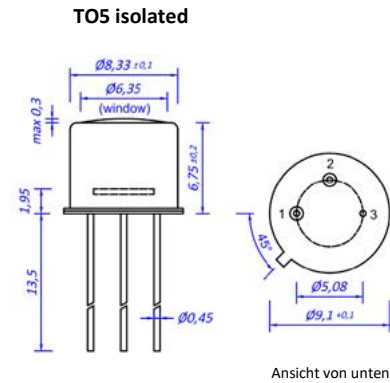
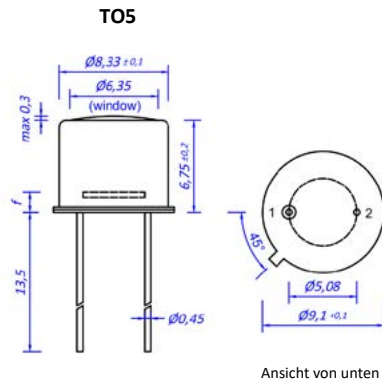
Package	Parts	Datasheet
TO18	JEA0,1A-S / JEA0,1A-350-S / JEA0,1A-365-S	JEA0,1F-S

Further available UV-A filters:

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

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

Package dimensions:

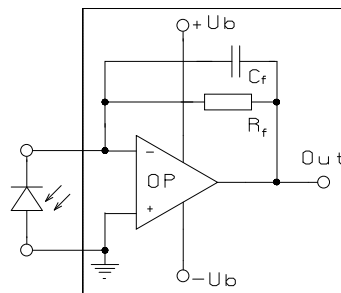


Anode isolated: Pin 1: Anode
Pin 2: Cathode + Case
f = 1,6 mm

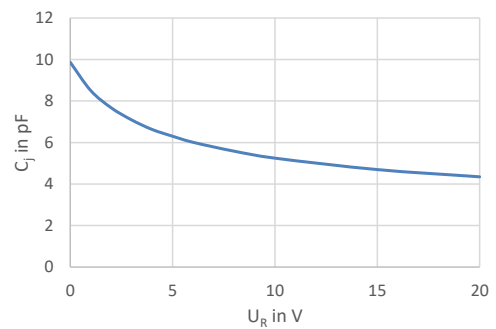
Anode + Cathode isolated: Pin 1: Anode
Pin 2: Cathode
Pin 3: Case

Cathode isolated: Pin 1: Cathode
Pin 2: Anode + Case
f = 1,85 mm

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 reverse voltage U_R . Lower intrinsic capacitance can be used to increase the bandwidth (lower the rise time) in electric circuits.