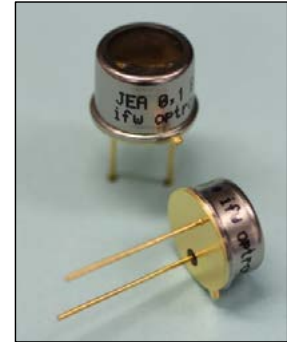


SiC-Photodiode with integrated UV-filter
JEA5A · JEA5B · JEA5C

Characteristics :

- ◆ large active area SiC-photodiode
- ◆ active area: 5 mm²
- ◆ UV-filters for UVA-, UVB- and UVC-range
- ◆ more filter options on request
- ◆ hermetically sealed TO-package
- ◆ RoHS, REACH and WEEE conform



Applications :

- ◆ optical measurement in UV-range with selected spectral range
- ◆ control of sterilization lamps
- ◆ flame control
- ◆ sun light measurement

Maximum Ratings :

- ◆ reverse voltage 10 V
- ◆ operating temperature range - 40 °C ... 125 °C
- ◆ storage temperature range - 40 °C ... 125 °C
- ◆ soldering temperature (3s) 260 °C

Versions:

Filter	Anode: isolated Cathode: case-pin	Cathode: isolated Anode: case-pin	Anode, Cathode: isolated Additional case-pin	Operating Temperature: 150 °C
UV-A	JEA5A	JEAC5A	JEA5A-I	*-HT
UV-B	JEA5B	JEAC5B	JEA5B-I	
UV-C	JEA5C	JEAC5C	JEA5C-I	

Further available optical filters:

Filter	Spectral-range	Part
UV-AB	280-360 nm	JEA5AB
UV-BC	228-322 nm	JEA5BC
UV-DVGW	240-290 nm	JEA5DVGW
Erythema	CIE 87	JEA5E

Further available active areas:

Active Area
0,1 mm ²
0,25 mm ²
1 mm ²
2 mm ²

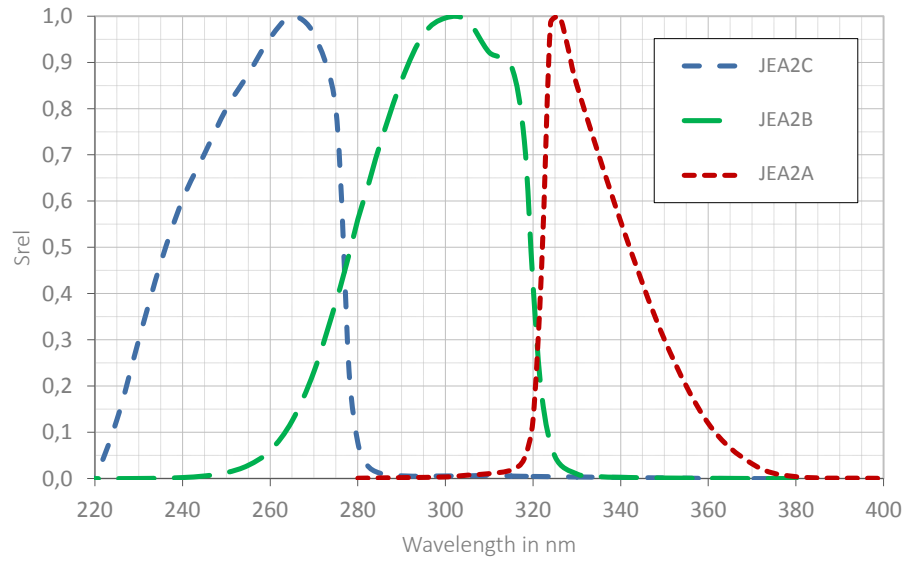
Further available packages:

Package	Parts	Datasheet
TO18	JEA5A/B/C-S	on request

Rev. 0 (03/2019)

SiC-Photodiode with integrated UV-filter JEA5A · JEA5B · JEA5C

Relative Spectral Responsivity S_{rel} :



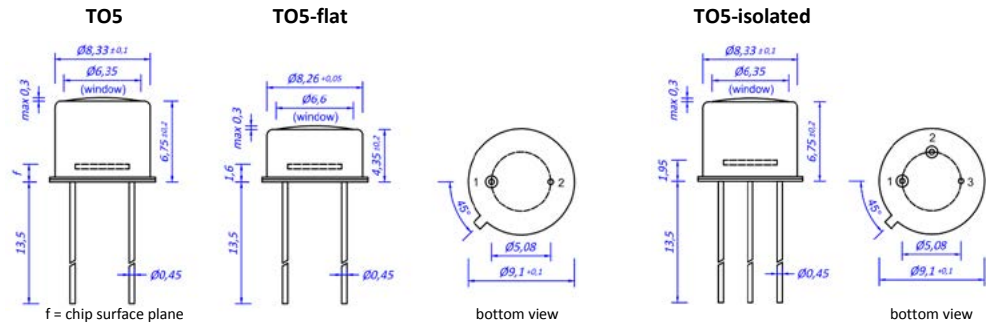
Technical Data:

Parameter	Test Conditions	UV-A	UV-B	UV-C	Einheit	
active area		Ø 2,525			mm	
spectral range	$S = 0,1 * S_{max}$	λ_{min}	318	265	225	nm
		λ_{max}	360	322	280	nm
wavelength of maximum responsivity	λ_{Smax}	325	300	265	nm	
maximum responsivity S_{max}	$S = S_{max}$	0,10	0,14	0,18	A/W	
dark current I_R	$U_R = 1 V$	500			fA	
junction capacitance C_j (max)	$f = 10 kHz$	500 (750)			pF	
field of view	Anode isolated	±30	±30	±45	degree	
	Cathode isolated	±27				
	A. + C. isolated	±28				
weight		1,1			gram	
package (see below for dimensions)	Anode isolated	TO5	TO5	TO5-flat		
	Cathode isolated	TO5				
	A. + C. isolated	TO5-isolated				

typical values; test conditions, as not otherwise specified: $T_A = 25 ^\circ C$, $U_R = 0 V$

SiC-Photodiode with integrated UV-filter JEA5A · JEA5B · JEA5C

Package Dimensions:

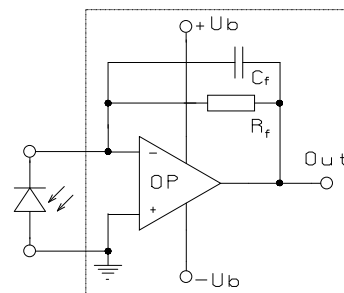


Anode isolated: Pin 1: Anode
Pin 2: Cathode + Case
f = 1,6 mm

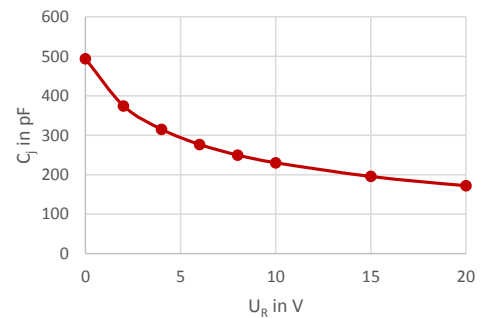
Anode + Cathode isolated: Pin 1: Anode
Pin 2: Cathode
Pin 3: Case

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.