

## SiC-Photodiode – Extended Wavelength JEA0,1X · JEA0,1X-S · JEA0,1X-SS

### Characteristics :

- ◆ SiC-photodiode with extended wavelength range
- ◆ active area: 0,1 mm<sup>2</sup>
- ◆ spectral range: 220 ... 390 nm
- ◆ high UV-responsivity: 0,18 A/W
- ◆ hermetically sealed TO-package
- ◆ option for isolated assembly of photodiode
- ◆ UT-option for extended operating temperature range 250°C
- ◆ RoHS, REACH and WEEE conform



### Applications :

- ◆ optical measurements in UV-range
- ◆ control of sterilization lamps
- ◆ flame control

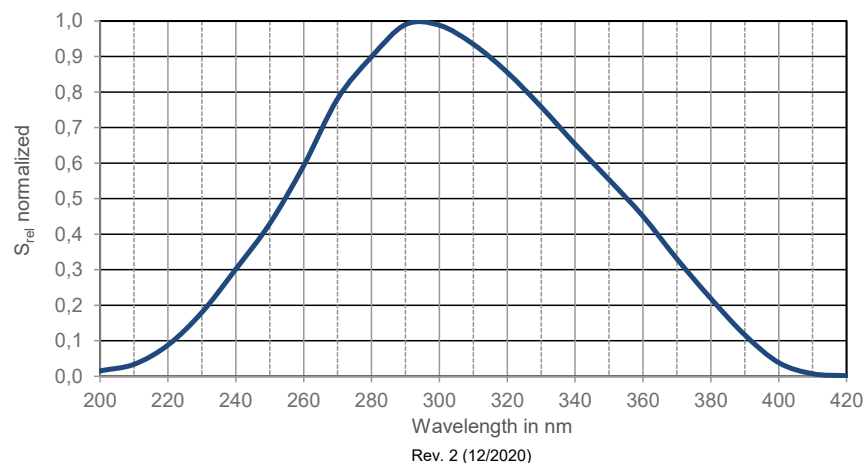
### Absolute Maximum Ratings :

- ◆ reverse voltage  $U_R$  20 V
- ◆ operating temperature range - 40 °C ... 150 °C
- ◆ storage temperature range - 40 °C ... 150 °C
- ◆ soldering temperature (3s) 260 °C

### Versions:

Package	Anode: isolated Cathode: case	Anode: isolated Cathode: case	Cathode, Anode : isolated + case-ground-pin	Operating Temperature up to 250 °C
TO5	JEA0,1X	JEAC0,1X	JEA0,1XI	*-UT
TO18	JEA0,1X-S	JEAC0,1X-S	JEA0,1XISZ	
TO52	JEA0,1X-SS	JEAC0,1X-SS	JEA0,1XISSZ	

### Relativ Spectral Responsivity $S_{rel}$ :



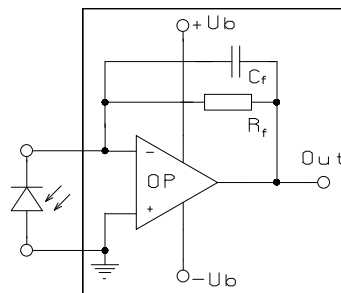
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**Technical Data :**

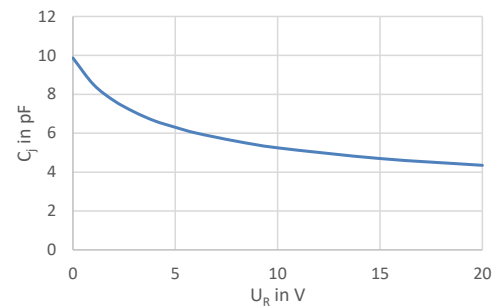
Parameter	Test condition	TO5	TO18	TO52	Unit
active area		0,365 x 0,365			mm <sup>2</sup>
spectral range	$\lambda_{short}$ $\lambda_{long}$ $S = 0,1 \times S_{max}$	222 392			nm nm
wavelength of peak response		292			nm
peak response $S_{max}$	$\lambda = 292 \text{ nm}$	190			mA/W
spectral response $S_{254nm}$	$\lambda = 254 \text{ nm}$	95			mA/W
dark current $I_R$	$U_R = 1 \text{ V}$	10			fA
junction capacitance $C_j$	$f = 10 \text{ kHz}$	10			pF
field of view (FOV)	Anode isolated	±48	±26	±40	degree
	Cathode isolated	±51	±27	±43	
	Both isolated	±52	±29	±46	
weight		0,8	0,3	0,3	gram
package drawing	Anode isolated	TO5	TO18	TO52	
	Cathode isolated	TO5	TO18	TO52	
	Both isolated	TO5 iso.	TO18 iso.	TO52 iso.	

test conditions, as not otherwise specified:  $T_A = 25 \text{ }^\circ\text{C}$ ,  $U_R = 0 \text{ V}$

**Application Example**



**Junction Capacitance  $C_j$  vs. Reverse Voltage  $U_R$ :**



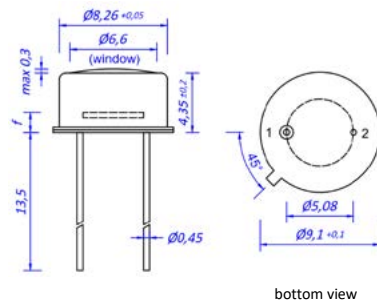
The application example shows a typical circuit  $R_f$  is responsible for the gain of the circuit  $C_f$  compensates the reverse junction capacitance of the photodiode and the input capacitance of the opamp. The exact value of  $C_f$  depends on  $R_f$ , used opamp and capacitance of the circuit. A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

### SiC-Photodiode – Extended Wavelength JEA0,1X · JEA0,1X-S · JEA0,1X-SS

**Case Dimensions:**

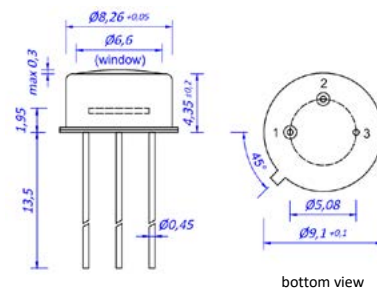
**TO5**



**JEA0,1X:** Pin 1: Anode  
Pin 2: Cathode + Case  
f = 1,6 mm

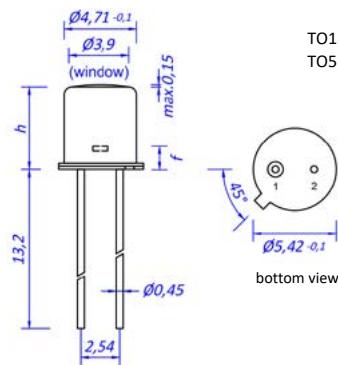
**JEA0,1X:** Pin 1: Cathode  
Pin 2: Anode + Case  
f = 1,85 mm

**TO5 isolated**



**JEA0,1XI:** Pin 1: Anode  
Pin 2: Cathode  
Pin 3: Case

**TO18 / TO52**

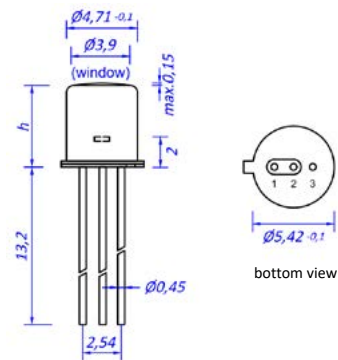


TO18: h = 5,2 mm ± 0,1 mm  
TO52: h = 3,7 mm ± 0,1 mm

**JEA0,1S/SS:** Pin 1: Anode  
Pin 2: Cathode + Case  
f = 1,5 mm

**JEA0,1X-S/SS:** Pin 1: Cathode  
Pin 2: Anode + Case  
f = 1,75 mm

**TO18 / TO52 isolated**



**JEA0,1XISZ/ISSZ:** Pin 1: Anode  
Pin 2: Cathode  
Pin 3: Case