

**SiC-Photodiode**  
**JEA2 · JEA2S · JEA2SS**

**Characteristics :**

- ◆ large area SiC-photodiode
- ◆ active area: 2 mm<sup>2</sup>
- ◆ spectral range: 215 ... 355 nm
- ◆ high UV-responsivity: 160 mA/W
- ◆ hermetically sealed TO-package
- ◆ option for fully isolated chip assembly within TO package
- ◆ 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

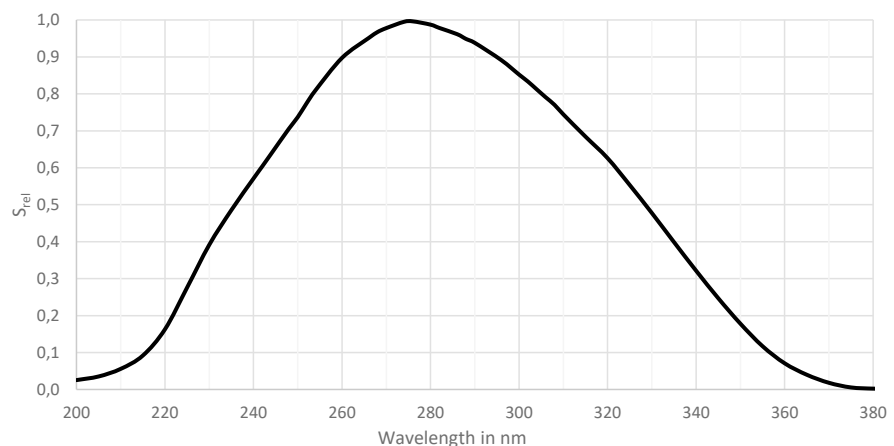
**Absolute Maximum Ratings :**

- ◆ 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-pin	Cathode: isolated Anode: case-pin	Anode, Cathode: isolated Additional case-pin	Operating Temperature up to 250 °C
TO5	JEA2	JEAC2	JEA2I	*-UT
TO18	JEA2S	-	JEA2ISZ	
TO52	JEA2SS	-	JEA2ISSZ	

**Relative Spectral Responsivity  $S_{rel}$ :**



Rev. 8 (01/2021)

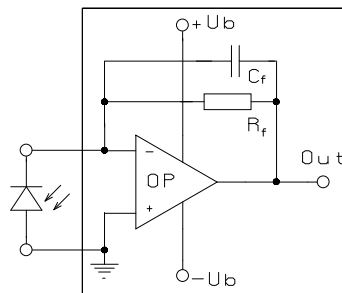
## SiC-Photodiode JEA2 · JEA2S · JEA2SS

**Technical Data :**

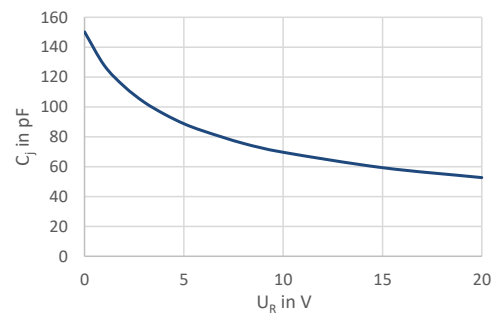
Parameter	Test condition	TO5	TO18	TO52	Unit
active area		1,415 x 1,415			mm <sup>2</sup>
spectral range	$\lambda_{short}$	215			nm
	$\lambda_{long}$	355			nm
wavelength of peak response		274			nm
peak response $S_{max}$	$\lambda = 274 \text{ nm}$	0,16			A/W
spectral response $S_{254nm}$	$\lambda = 254 \text{ nm}$	0,13			A/W
dark current $I_R$	$U_R = 1 \text{ V}$	200			fA
junction capacitance $C_j$ (max.)	$f = 10 \text{ kHz}$	150			pF
rise time $t_r$ of photocurrent	10%/90% $R_L = 50 \Omega$ $\lambda = 266 \text{ nm}$	<1,5			ns
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  $U_R$ :**



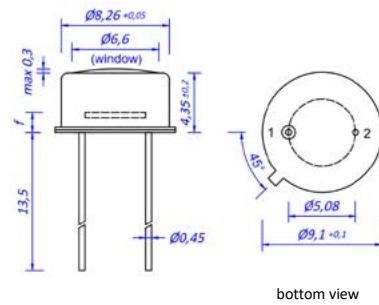
The application example shows a typical circuit  $R_f$  is responsible for the gain of the circuit  $C_f$  compensates the reverse junction capacitance of the photodiode and the input capacitance of the opamp. The exact value of  $C_f$  depends on  $R_f$ , used opamp and capacitance of the circuit. A 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 JEA2 · JEA2S · JEA2SS

### Case Dimensions:

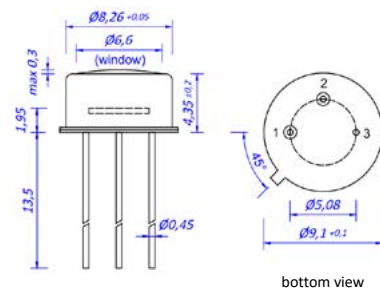
#### TO5



**JEA2:** Pin 1: Anode  
Pin 2: Cathode + Case  
f = 1,6 mm

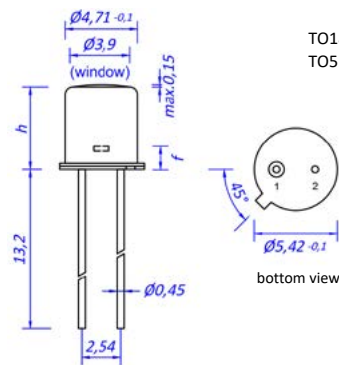
**JEA2S:** Pin 1: Cathode  
Pin 2: Anode + Case  
f = 1,85 mm

#### TO5 isolated



**JEA2I:** Pin 1: Anode  
Pin 2: Cathode  
Pin 3: Case

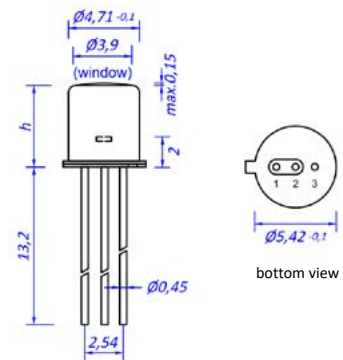
#### TO18 / TO52



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

**JEA2S/SS:** Pin 1: Anode  
Pin 2: Cathode + Case  
f = 1,5 mm

#### TO18 / TO52 isolated



**JEA2ISZ/ISSZ:** Pin 1: Anode  
Pin 2: Cathode  
Pin 3: Case