

Characteristics :

- ◆ medium size SiC-photodiode
- ◆ active area: 1 mm²
- ◆ spectral range: 215 ... 358 nm
- ◆ high UV-responsivity: 0,17 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

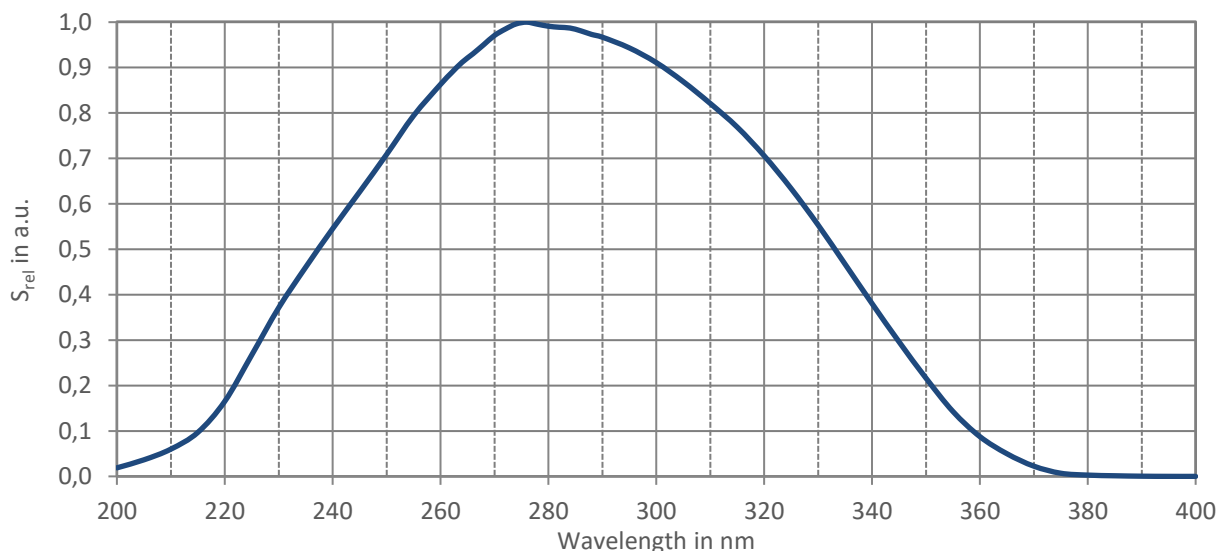
Absolute Maximum Ratings :

- ◆ 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-pin | Cathode: isolated Anode: case-pin | Anode, Cathode: isolated Additional case-pin | Operating Temperature up to 250 °C |
|---------|--------------------------------------|--------------------------------------|---|---------------------------------------|
| TO5 | JEA1 | JEAC1 | JEA1I | *-UT |
| TO18 | JEA1S | JEAC1S | JEA1ISZ | |
| TO52 | JEA1SS | JEAC1SS | JEA1ISSZ | |

Relativ Spectral Responsivity S_{rel} :



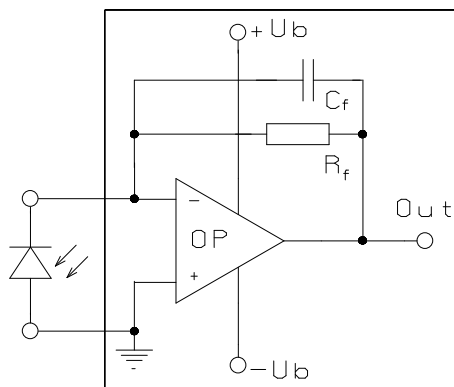
Rev. 4 (09/2020)

Technical Data :

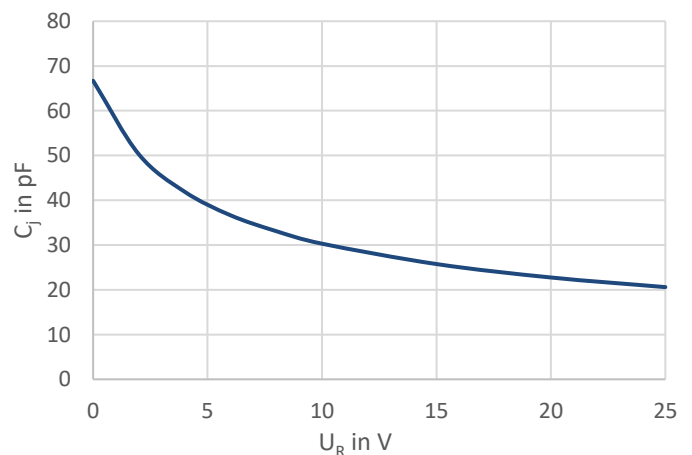
| Parameter | Test condition | TO5 | TO18 | TO52 | Unit |
|-----------------------------------|---|------------------------|---------------------------|---------------------------|-----------------|
| active area | | 1,04 x 1,04 | | | mm ² |
| spectral range | λ_{short} λ_{long} $S = 0,1 \times S_{max}$ | 215 358 | | | nm nm |
| wavelength of peak response | | 276 | | | nm |
| peak response S_{max} | $\lambda = 276 \text{ nm}$ | 0,17 | | | A/W |
| spectral response S_{254nm} | $\lambda = 254 \text{ nm}$ | 0,135 | | | A/W |
| dark current I_R | $U_R = 1 \text{ V}$ | 200 | | | fA |
| junction capacitance C_j (max.) | $f = 10 \text{ kHz}$ | 70 | | | pF |
| rise time t_r of photocurrent | 10%/90% $R_L = 50 \Omega$ $\lambda = 266 \text{ nm}$ | <1,3 | | | ns |
| field of view (FOV) | Anode isolated Cathode isolated Both isolated | ±48 ±51 ±52 | ±26 ±27 ±29 | ±40 ±43 ±46 | degree |
| weight | | 0,8 | 0,3 | 0,3 | gram |
| package drawing | Anode isolated Cathode isolated Both isolated | TO5 TO5 TO5 iso. | TO18 TO18 TO18 iso. | TO52 TO52 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 :

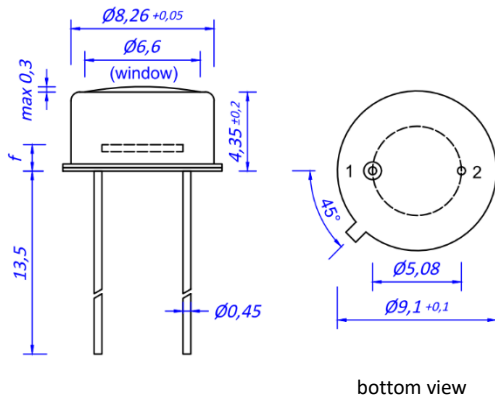


The application example shows a typical circuit R_f is responsible for the gain of the circuit C_f compensates the reverse junction capacitance of the photodiode and the input capacitance of the opamp. The exact value of C_f depends on R_f , used opamp and capacitance of the circuit. A typical value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

Case Dimensions:

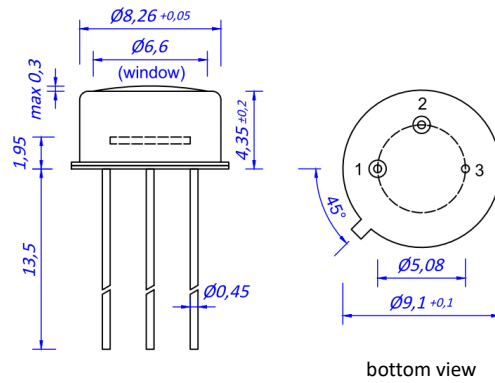
T05



JEA1: Pin 1: Anode
Pin 2: Cathode + Case
f = 1,6 mm

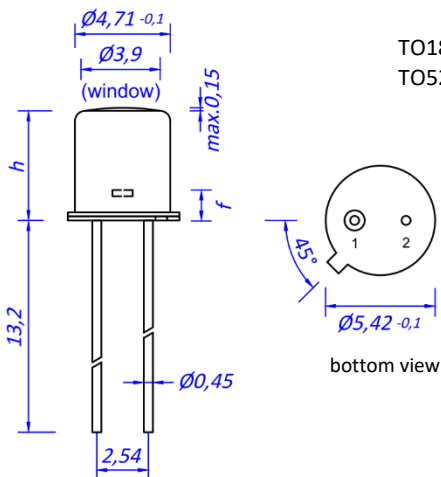
JEAC1: Pin 1: Cathode
Pin 2: Anode + Case
f = 1,85 mm

T05 isolated



JEA1I: Pin 1: Anode
Pin 2: Cathode
Pin 3: Case

T018 / T052

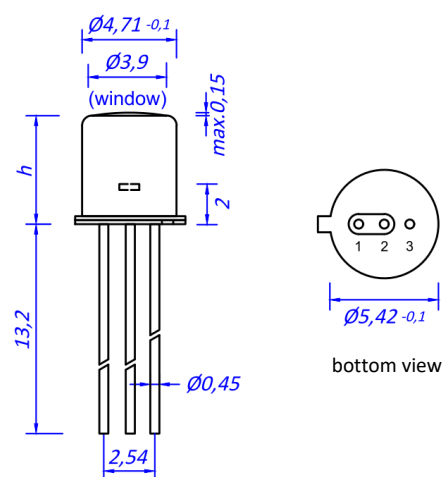


T018: h = 5,2 mm ± 0,1 mm
T052: h = 3,7 mm ± 0,1 mm

JEA1S/SS: Pin 1: Anode
Pin 2: Cathode + Case
f = 1,5 mm

JEAC1S/SS: Pin 1: Cathode
Pin 2: Anode + Case
f = 1,75 mm

T018 / T052 isolated



JEA1ISZ/ ISSZ: Pin 1: Anode
Pin 2: Cathode
Pin 3: Case