

SiC - Photodiode**JEC 1 I-DE**

- characteristics :**
- ◆ SiC-photodiode with integrated special filter
 - ◆ response close to erythema characteristic (CIE 87)
 - ◆ ideal for solar application
 - ◆ full hermetic TO-5 package
 - ◆ integrated diffusor for cos-shaped response characteristic
 - ◆ sensor assembly isolated to ground
 - ◆ components are in conformity with RoHS and WEEE

- applications :**
- ◆ measurement of erythema efficient UV-part on natural sunlight (UVI-measurement with high exactness is possible)

absolute maximum ratings :

- ◆ max. reverse voltage 20 V
- ◆ operating temperature range -25 °C...+70 °C
- ◆ storage temperature range -40 °C...+100 °C
- ◆ welding temperature (3s) 260 °C

technical data :

common test conditions if not otherwise specified: $T_A = 25\text{ °C}$, $V_R = 0\text{ V}$

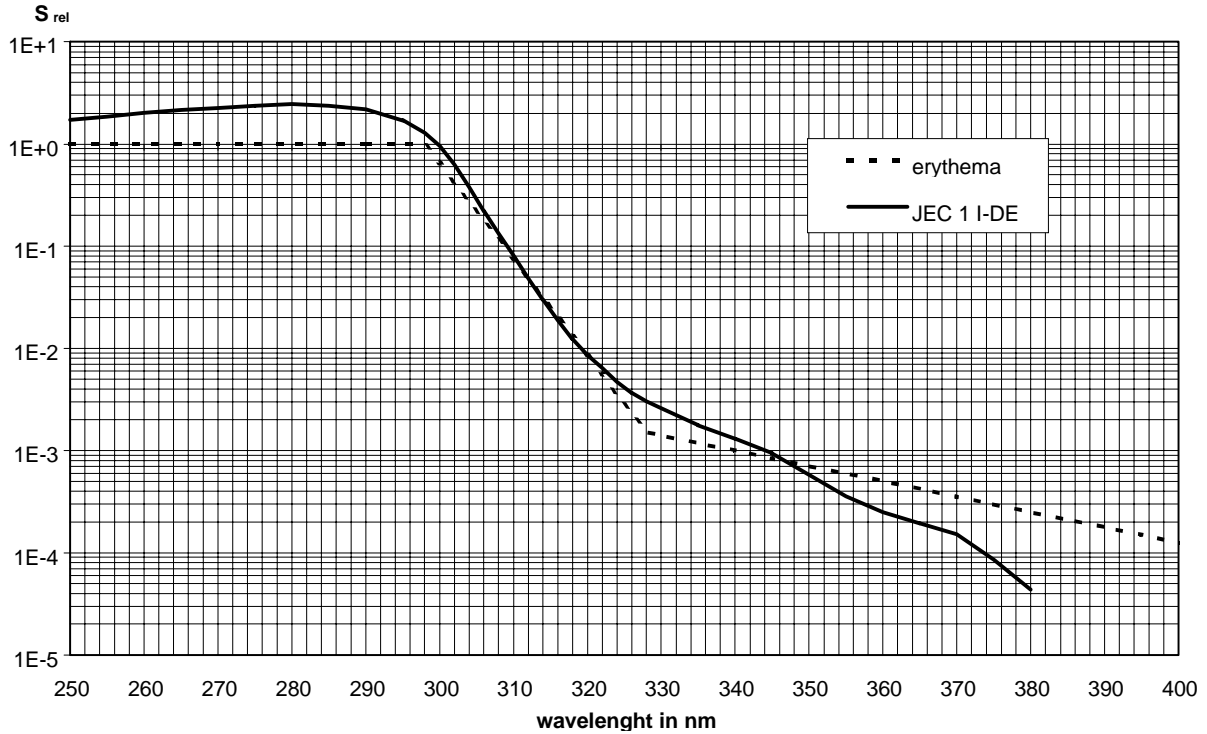
parameter	test condition	min.	typ.	max.	unit
active area of sensor			0,965		mm ²
efficient area of diffusor			13,85 (Ø 4,2)		mm ²
max. of spectral responsivity *)	$S = S_{\max}$	1,5	1,8	2,2	mAW
absolute spectral responsivity *)	$\lambda = 313\text{ nm}$		0,03		mAW
photocurrent at sunlight	bright sun		0,25		nA/UVI
dark current	$V_R = 1\text{ V}$		10		fA
junction capacity			195		pF

*) based on efficient diffusor area

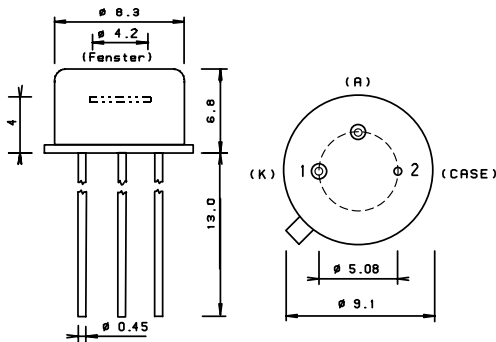
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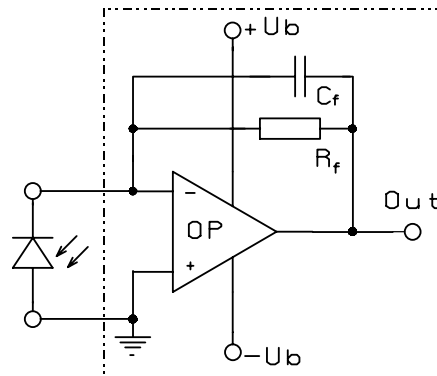
relative spectrale responsivity



package dimensions



application example



The application example shows a typical electrical application circuit.

R_f determines responsivity of the circuit, typical values are 100 M Ω to 1 G Ω .

C_f works as compensation of junction capacity of the photodiode and input capacity of the OP-amplifier.

Exact value of C_f depends on R_f , used OP-Amp as well as the parasitic capacities of the electrical circuit, typical value is 1 pF at minimum. For static measurements (UVI) C_f can be chosen much higher (1nF), so an additional effective suppression of noise of the amplifier can be achieved..