

Si - photodiode with integrated amplifier

JI 546
JI 547
JI 548



- characteristics :**
- ◆ Si-photodiode with integrated low noise JFET-amplifier
 - ◆ integrated feedback resistor and capacitor
 - ◆ decadic staggered responsivity
 - ◆ spectral range VIS and NIR
 - ◆ very low offset- and driftparameters
 - ◆ high dynamic range
 - ◆ duale power supply
 - ◆ hermetically sealed TO-5 package
 - ◆ assembly isolated to ground
 - ◆ replacement type for JI 4,8 (not pincompatible!)
 - ◆ components are in conformity with RoHS and WEEE

- applications :**
- ◆ common light-/radiation measuring applications
 - ◆ detector for measuring of low radiation intensities with high signal to noise level
 - ◆ spectroscopy
 - ◆ medical diagnostics

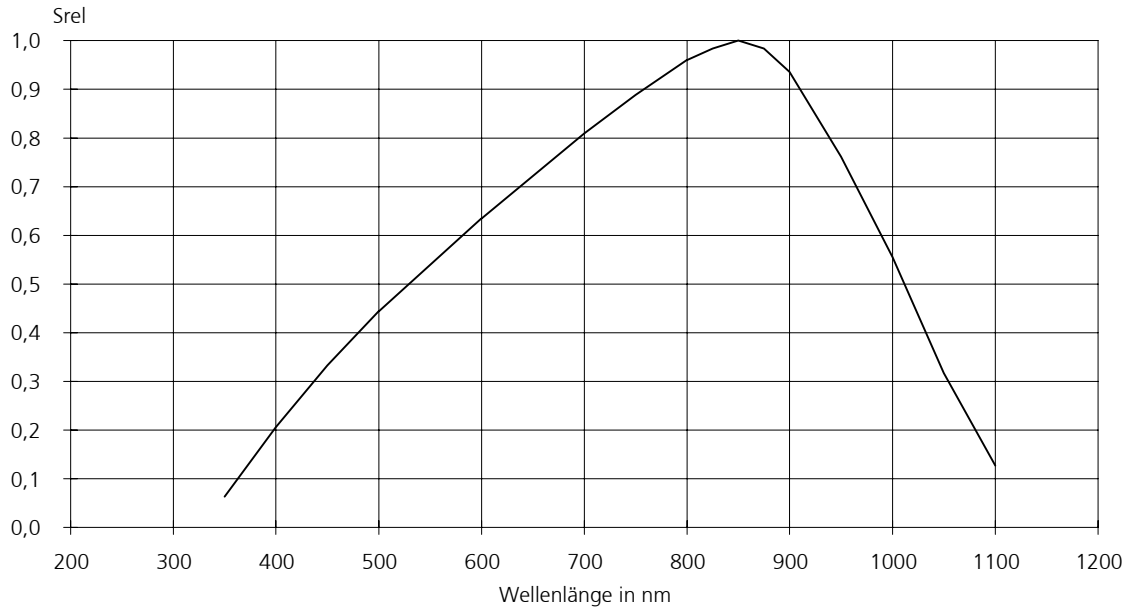
- maximum ratings :**
- ◆ operating voltage $\pm 18 \text{ V}$
 - ◆ operating temperature range $-25 \text{ }^\circ\text{C} \dots +85 \text{ }^\circ\text{C}$
 - ◆ storage temperature range $-40 \text{ }^\circ\text{C} \dots +100 \text{ }^\circ\text{C}$
 - ◆ welding temperature (3s) $260 \text{ }^\circ\text{C}$

technical data :

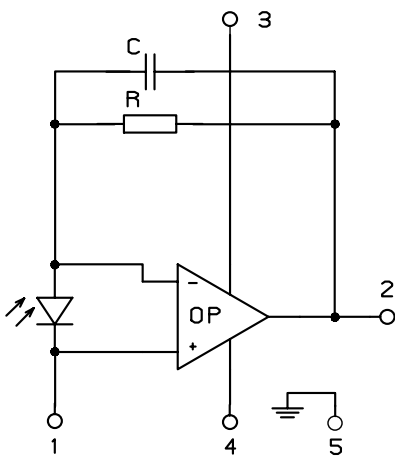
common test conditions, as not otherwise specified: $T_A = 25 \text{ }^\circ\text{C}$, $V_S = \pm 15 \text{ V}$
typ. data, maximum data in brackets

parameter	testcondition	JI 546	JI 547	JI 548	unit
active area		4,8			mm ²
feedback resistor		1	10	100	MΩ
dark offset voltage	$E = 0 \text{ lx}$	$\pm 0,5$	$\pm 0,5$	± 2	mV
noise voltage	$B = 20 \text{ kHz}$	0,2	0,3	0,5	mV _{rms}
spectral range	$S=0,1 * S_{\text{max}}$	400...1100			nm
max. of spectral responsivity	$S=S_{\text{max}}$	850			nm
max. spectral responsivity	$S=S_{\text{max}}$	0,6	6	60	mV/nW
rise time		3	15	35	μs
bandwidth	- 3 dB	120	25	10	kHz
opening angle	$S(\varphi)=0,5 * S_{\text{max}} * \cos(\varphi)$	± 50			Grad
saturation voltage	$R_L = 2 \text{ k}\Omega$	-14,8 (-14,5)			V
short current		± 45			mA
operation voltage		$\pm 5 \dots \pm 15$			V
current consumption		2,2 (2,6)			mA

relative spectral responsivity



internal circuit



- 1 GND
- 2 Out
- 3 +V_s
- 4 -V_s
- 5 Case

package dimensions

