

Silizium-PIN-Fotodiode Silicon PIN Photodiode

SFH 206 K



Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 400 nm bis 1100 nm
- Kurze Schaltzeit (typ. 20 ns)
- 5-mm-Plastikbauform im LED-Gehäuse
- Auch gegurtet lieferbar

Anwendungen

- Computer-Blitzlichtgeräte
- Lichtschranken für Gleich- und Wechsellichtbetrieb
- Industrieelektronik
- „Messen/Steuern/Regeln“

Features

- Especially suitable for applications from 400 nm to 1100 nm
- Short switching time (typ. 20 ns)
- 5 mm LED plastic package
- Also available on tape and reel

Applications

- Computer-controlled flashes
- Photointerrupters
- Industrial electronics
- For control and drive circuits

Typ Type	Bestellnummer Ordering Code
SFH 206 K	Q62702-P129

Grenzwerte
Maximum Ratings

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebs- und Lagertemperatur Operating and storage temperature range	$T_{op}; T_{stg}$	- 40 ... + 100	°C
Löttemperatur (Lötstelle 2 mm vom Gehäuse entfernt bei Lötzeit $t \leq 3$ s) Soldering temperature in 2 mm distance from case bottom ($t \leq 3$ s)	T_S	230	°C
Sperrspannung Reverse voltage	V_R	32	V
Verlustleistung, $T_A = 25$ °C Total power dissipation	P_{tot}	150	mW

Kennwerte ($T_A = 25$ °C, Normlicht A, $T = 2856$ K)

Characteristics ($T_A = 25$ °C, standard light A, $T = 2856$ K)

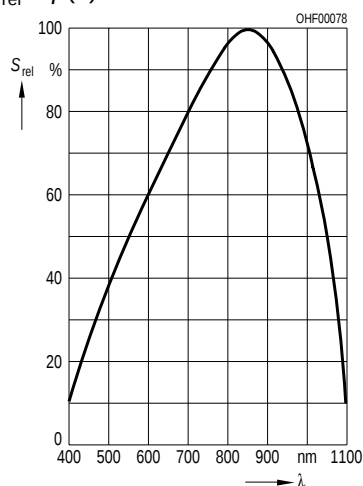
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Fotoempfindlichkeit, $V_R = 5$ V Spectral sensitivity	S	80 (≥ 50)	nA/lx
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S \max}$	850	nm
Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von $S_{\max}$ Spectral range of sensitivity $S = 10\%$ of $S_{\max}$	λ	400 ... 1100	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	7.00	mm ²
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$	2.65×2.65	mm × mm
Abstand Chipoberfläche zu Gehäuseoberfläche Distance chip front to case surface	H	1.2 ... 1.4	mm
Halbwinkel Half angle	φ	± 60	Grad deg.
Dunkelstrom, $V_R = 10$ V Dark current	I_R	2 (≤ 30)	nA
Spektrale Fotoempfindlichkeit, $\lambda = 850$ nm Spectral sensitivity	S_λ	0.62	A/W

Kennwerte ($T_A = 25\text{ °C}$, Normlicht A, $T = 2856\text{ K}$)

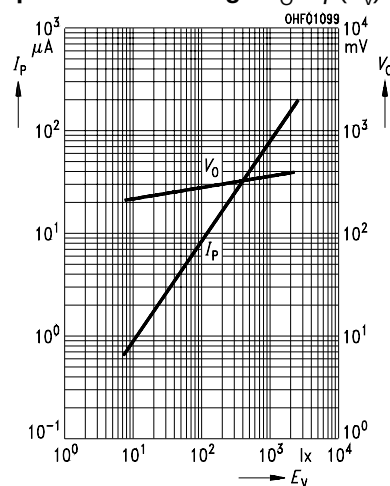
Characteristics ($T_A = 25\text{ °C}$, standard light A, $T = 2856\text{ K}$) (cont'd)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Quantenausbeute, $\lambda = 850\text{ nm}$ Quantum yield	η	0.90	<u>Electrons</u> Photon
Leerlaufspannung, $E_v = 1000\text{ lx}$ Open-circuit voltage	V_O	365 (≥ 310)	mV
Kurzschlußstrom, $E_v = 1000\text{ lx}$ Short-circuit current	I_{SC}	80	μA
Anstiegs- und Abfallzeit des Fotostromes Rise and fall time of the photocurrent $R_L = 50\text{ }\Omega$; $V_R = 5\text{ V}$; $\lambda = 850\text{ nm}$; $I_p = 800\text{ }\mu\text{A}$	t_r, t_f	20	ns
Durchlaßspannung, $I_F = 100\text{ mA}$, $E = 0$ Forward voltage	V_F	1.3	V
Kapazität, $V_R = 0\text{ V}$, $f = 1\text{ MHz}$, $E = 0$ Capacitance	C_0	72	pF
Temperaturkoeffizient von V_O Temperature coefficient of V_O	TC_{V_O}	-2.6	mV/K
Temperaturkoeffizient von I_{SC} Temperature coefficient of I_{SC}	$TC_{I_{SC}}$	0.18	%/K
Rauschäquivalente Strahlungsleistung Noise equivalent power $V_R = 10\text{ V}$, $\lambda = 850\text{ nm}$	NEP	4.2×10^{-14}	$\frac{\text{W}}{\sqrt{\text{Hz}}}$
Nachweisgrenze, $V_R = 10\text{ V}$, $\lambda = 850\text{ nm}$ Detection limit	D^*	6.3×10^{12}	$\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$

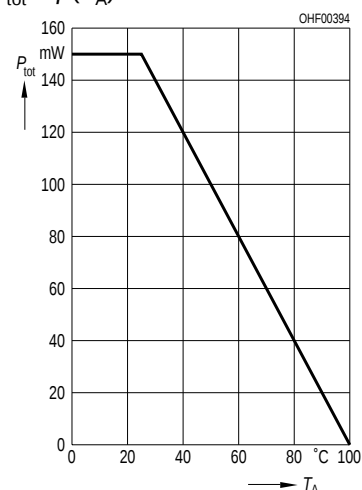
Relative Spectral Sensitivity
 $S_{\text{rel}} = f(\lambda)$



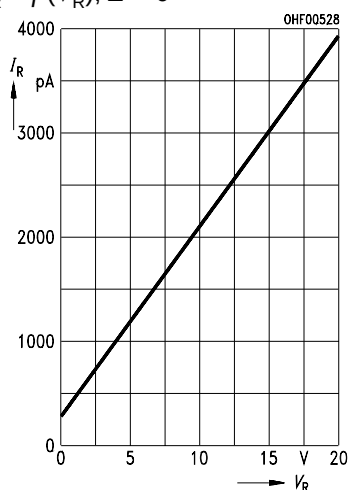
Photocurrent $I_P = f(E_V)$, $V_R = 5 \text{ V}$
Open-Circuit Voltage $V_O = f(E_V)$



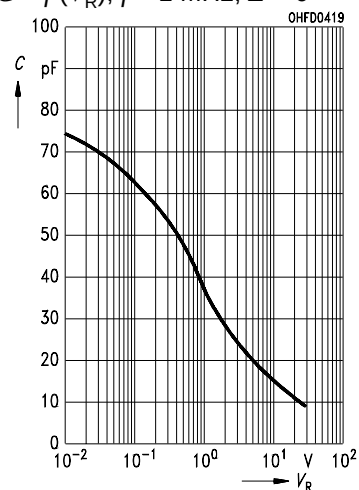
Total Power Dissipation
 $P_{\text{tot}} = f(T_A)$



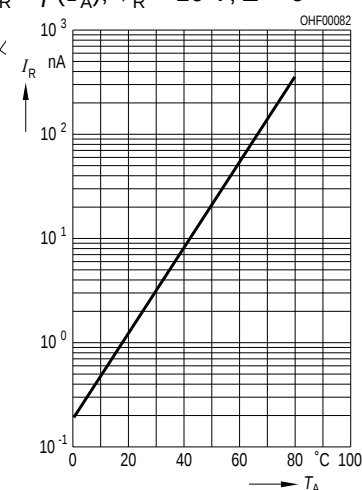
Dark Current
 $I_R = f(V_R), E = 0$



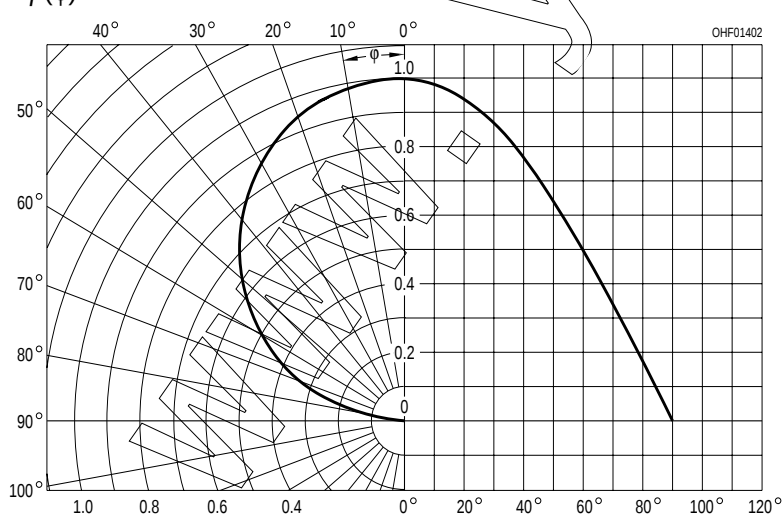
Capacitance
 $C = f(V_R), f = 1 \text{ MHz}, E = 0$



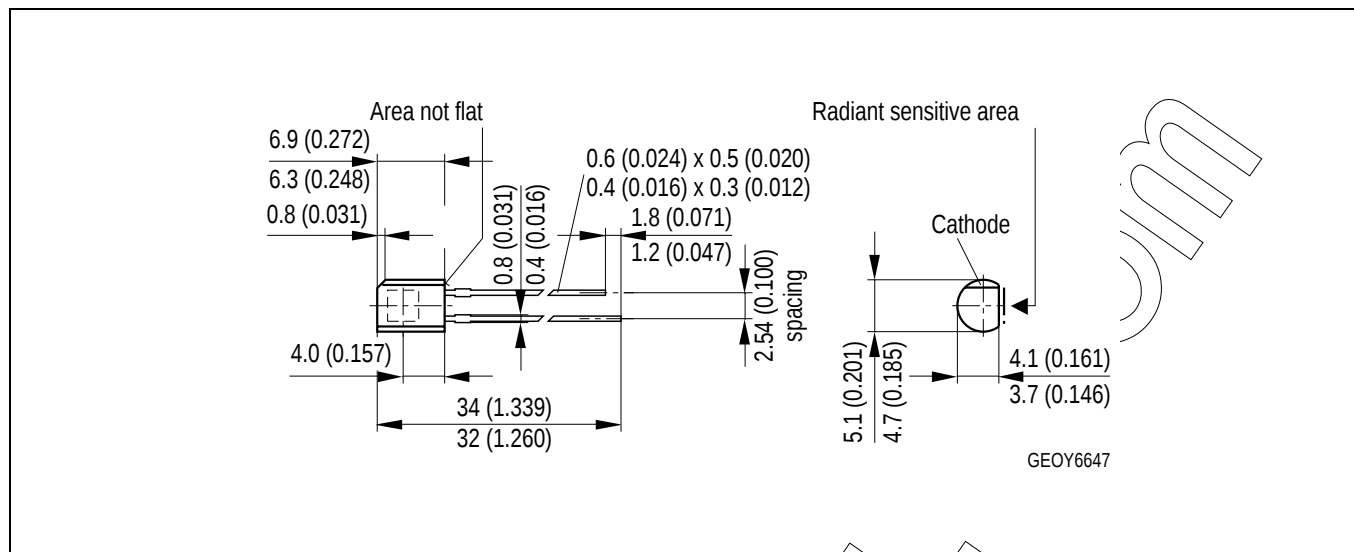
Dark Current
 $I_R = f(T_A), V_R = 10 \text{ V}, E = 0$



Directional Characteristics
 $S_{\text{rel}} = f(\varphi)$



Maßzeichnung Package Outlines



Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

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Please use the recycling operators known to you. We can also help you – get in touch with your nearest sales office. By agreement we will take packing material back, if it is sorted. You must bear the costs of transport. For packing material that is returned to us unsorted or which we are not obliged to accept, we shall have to invoice you for any costs incurred.

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