

Silizium-Fotodiode mit $V\lambda$ Charakteristik
Silicon Photodiode with $V\lambda$ Characteristics
Lead (Pb) Free Product - RoHS Compliant
SFH 2430



Wesentliche Merkmale

- Spektrale Empfindlichkeit angepasst an die Augenempfindlichkeit ($V\lambda$)
- Niedriger Temperaturkoeffizient der Fotoempfindlichkeit
- Gute Linearität
- DIL-Plastikbauform mit hoher Packungsdichte
- Geeignet für Vapor-Phase Löten und IR-Reflow Löten (JEDEC level 4)

Anwendungen

- Umgebungslichtsensor (Handy, Regensensor, Klimaanlagesteuerung)

Features

- Spectral sensitivity adapted to Human Eye Sensitivity ($V\lambda$)
- Low temperature coefficient of spectral sensitivity
- high linearity
- DIL plastic package with high packing density
- Suitable for vapor-phase and IR-reflow soldering (JEDEC level 4)

Applications

- Ambient light sensor (Mobile phone, rain sensor, regulation of air conditioning)

Typ Type	Bestellnummer Ordering Code
SFH 2430	Q65110A2673

Grenzwerte
Maximum Ratings

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebs- und Lagertemperatur Operating and storage temperature range	$T_{\text{op}}; T_{\text{stg}}$	- 40 ... + 100	°C
Sperrspannung Reverse voltage	V_R	6	V
Verlustleistung, $T_A = 25\text{ °C}$ Total power dissipation	P_{tot}	150	mW

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

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Fotoempfindlichkeit, $V_R = 5\text{ V}$ Spectral sensitivity	S	5.8 (>4)	nA/lx
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\text{ max}}$	570	nm
Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von S_{max} Spectral range of sensitivity $S = 10\%$ of S_{max}	λ	400 ... 900	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
Halbwinkel Half angle	φ	±60	Grad deg.
Dunkelstrom, $V_R = 5\text{ V}$ Dark current	I_R	0.1 (<5)	nA
Spektrale Fotoempfindlichkeit, $\lambda = 550\text{ nm}$ Spectral sensitivity	S_λ	0.17	A/W
Anstiegs- und Abfallzeit des Fotostromes Rise and fall time of the photocurrent $R_L = 50\text{ k}\Omega$; $V_R = 5\text{ V}$; $\lambda = 550\text{ nm}$	t_r, t_f	200	µs
Durchlaßspannung, $I_F = 100\text{ mA}$, $E = 0$ Forward voltage	V_F	1.2	V

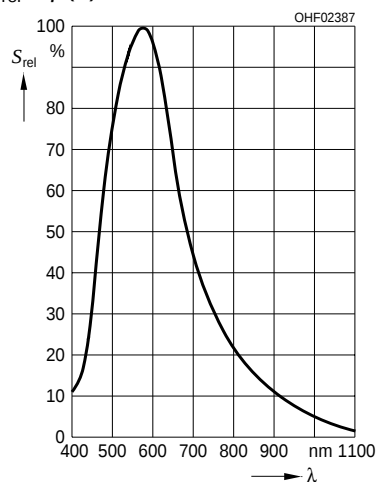
Kennwerte ($T_A = 25\text{ °C}$, Normlicht A, $T = 2856\text{ K}$)

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

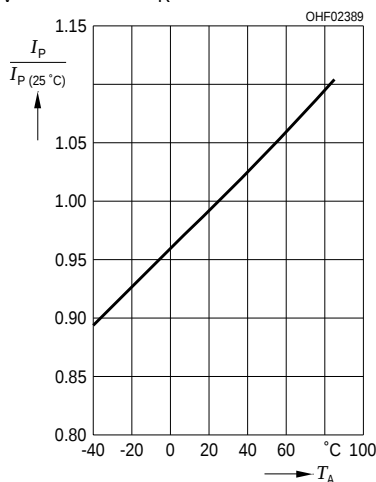
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kapazität, $V_R = 0\text{ V}$, $f = 1\text{ MHz}$, $E = 0$ Capacitance	C_0	1000	pF
Temperaturkoeffizient von I_{SC} Temperature coefficient of I_{SC}	TC_I	0.16	%/K

Relative Spectral Sensitivity

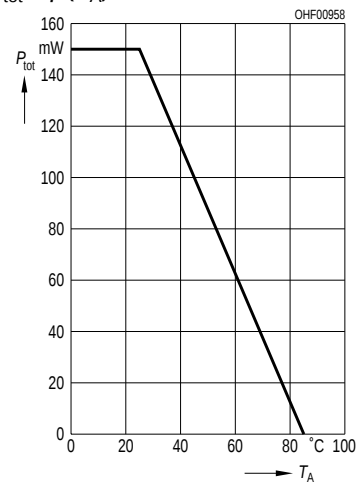
$S_{\text{rel}} = f(\lambda)$

**Photocurrent $I_P/I_{P(25^\circ\text{C})} = f(T_A)$**

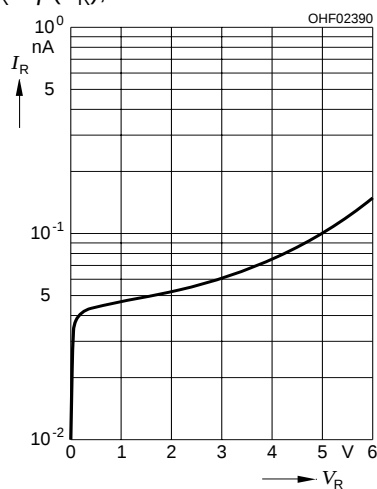
$E_v = 1000 \text{ lx}, V_R = 5 \text{ V}$

**Total Power Dissipation**

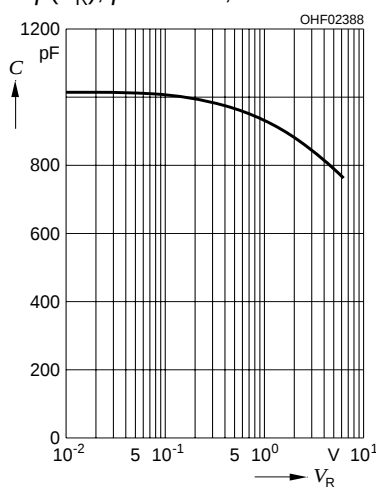
$P_{\text{tot}} = f(T_A)$

**Dark Current**

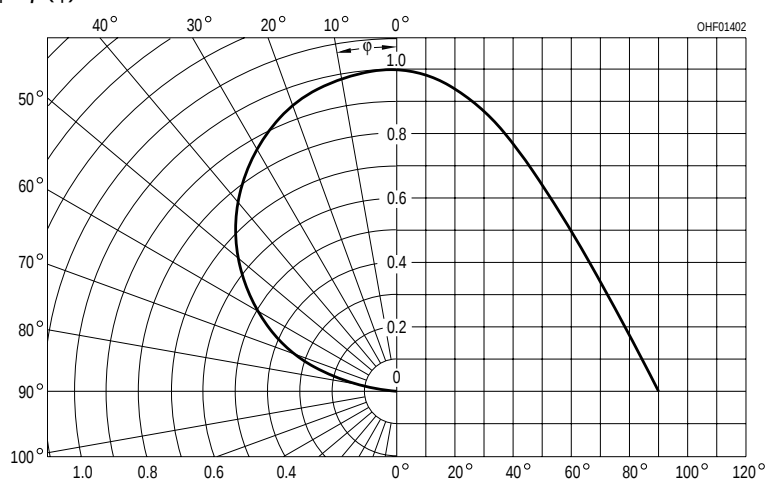
$I_R = f(V_R), E = 0$

**Capacitance**

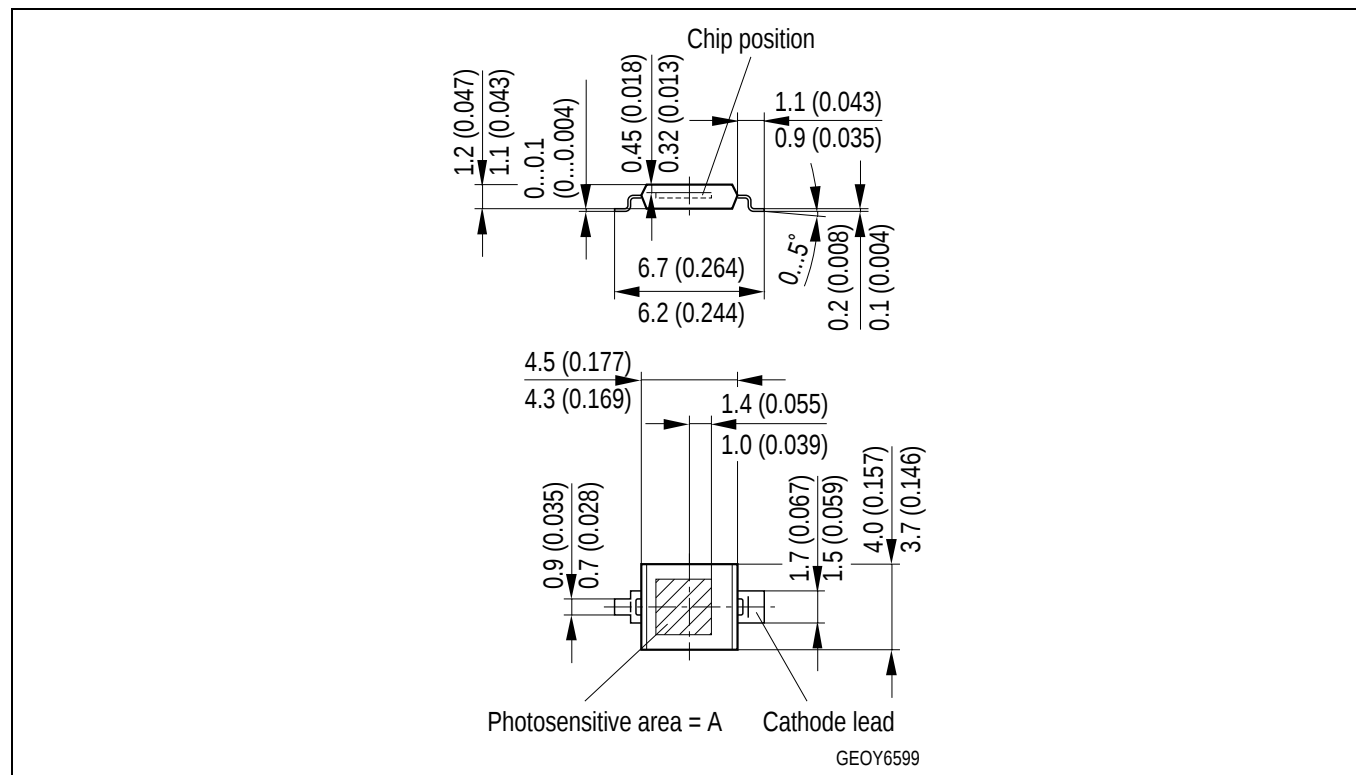
$C = f(V_R), f = 1 \text{ MHz}, E = 0$

**Directional Characteristics**

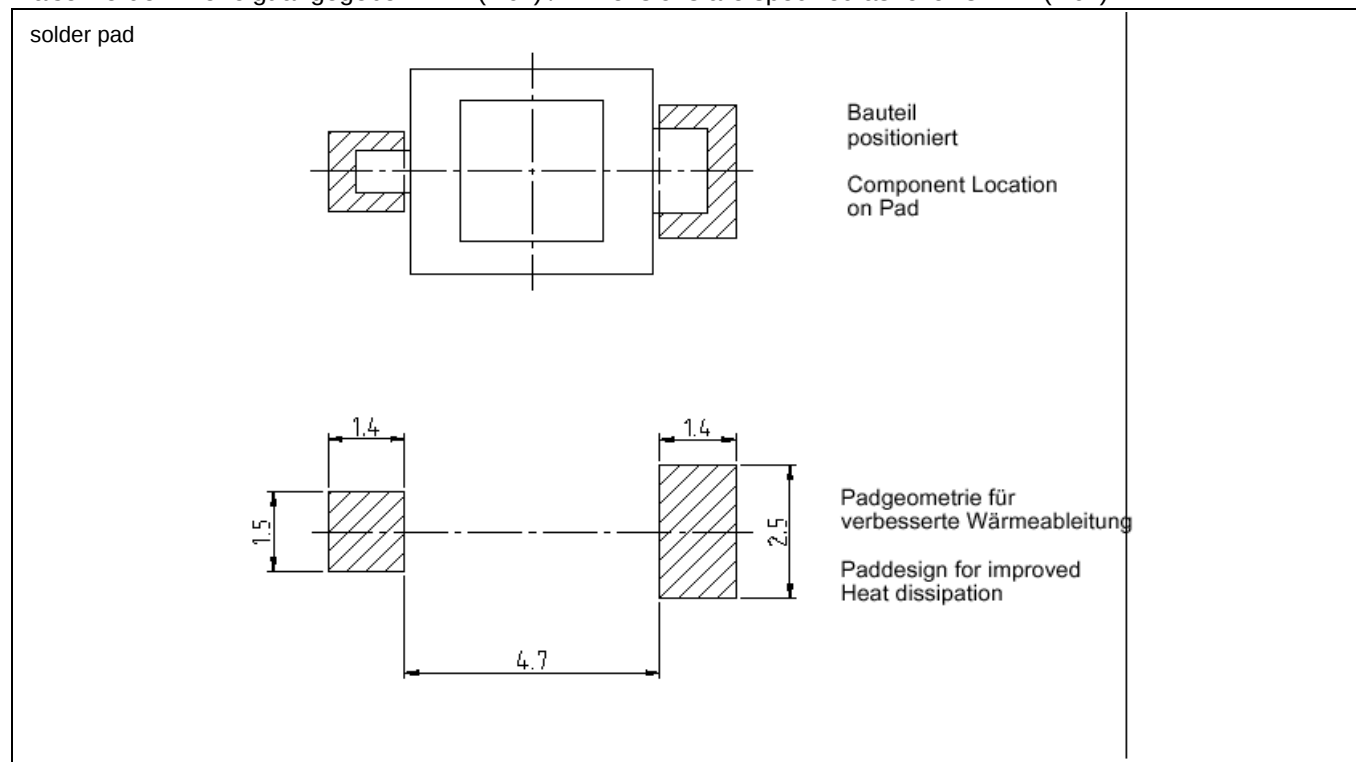
$S_{\text{rel}} = f(\varphi)$



Maßzeichnung **Package Outlines**



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



Maße werden wie folgt angegeben: mm / Dimensions are specified as follows: mm

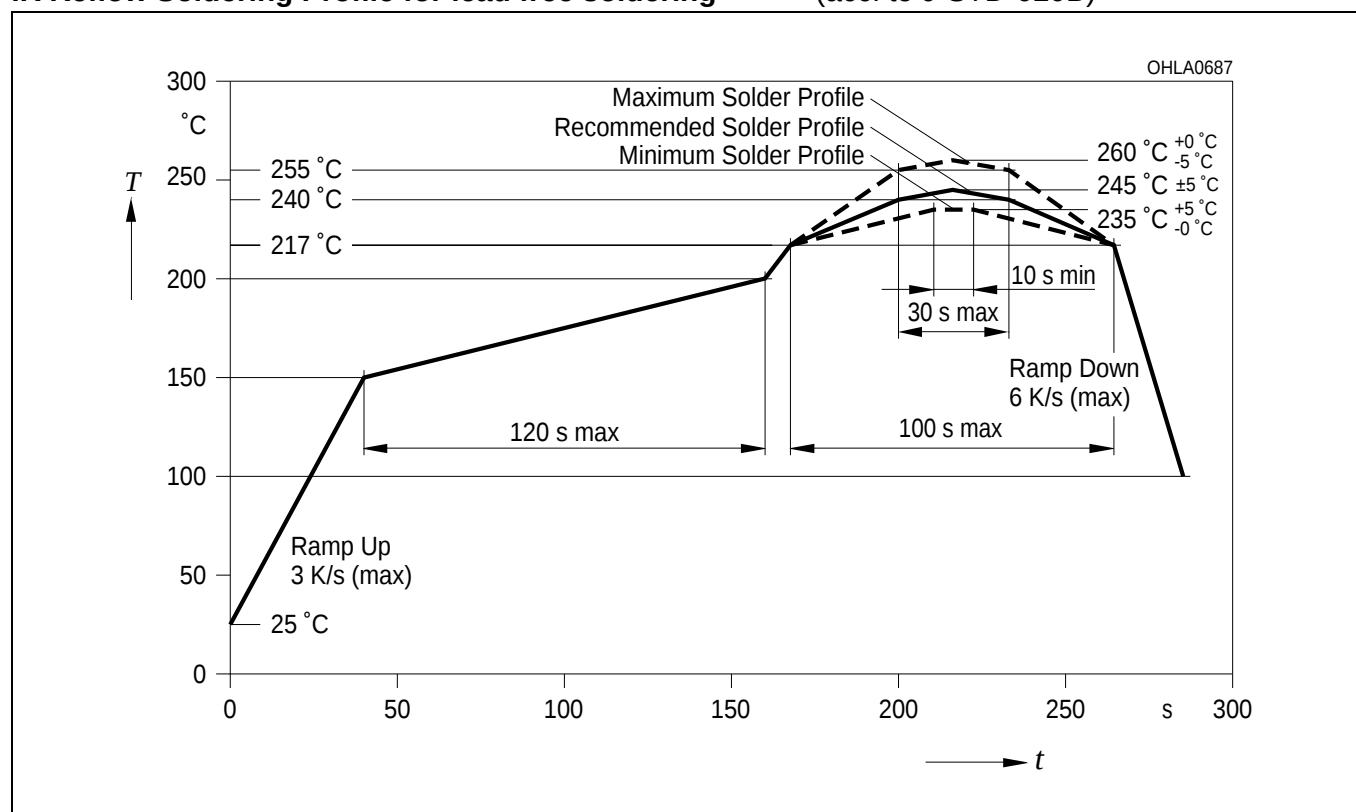
Lötbedingungen**Soldering Conditions****IR-Reflow Lötprofil für bleifreies Löt****IR Reflow Soldering Profile for lead free soldering**

Vorbehandlung nach JEDEC Level 4

Preconditioning acc. to JEDEC Level 4

(nach J-STD-020B)

(acc. to J-STD-020B)

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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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