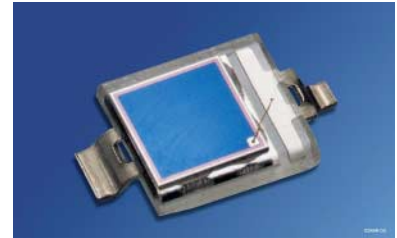


Silizium-Fotodiode mit V_λ Charakteristik Silicon Photodiode with V_λ Characteristics

SFH 2430



Wesentliche Merkmale

- Spektrale Empfindlichkeit angepasst an die Augenempfindlichkeit (V_λ)
- 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_λ)
- 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	Q65110A1130

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
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

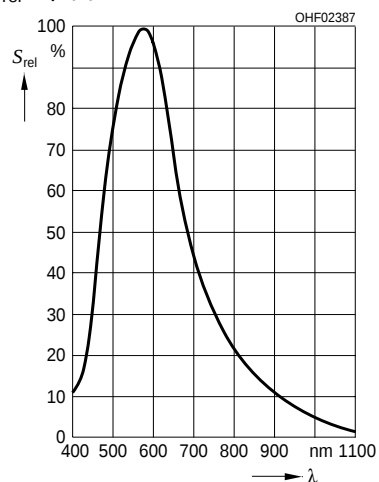
Kennwerte ($T_A = 25\text{ °C}$, Normlicht A, $T = 2856\text{ K}$)

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

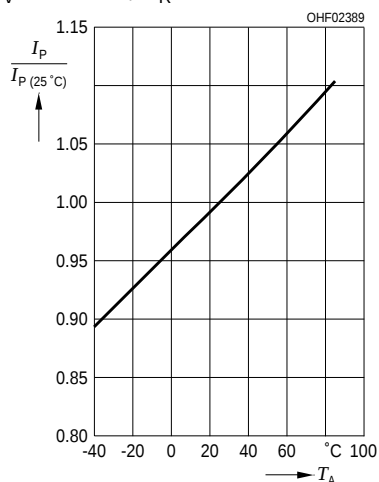
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kapazität, $V_R = 0\text{ V}$, $f = 1\text{ MHz}$, $E = 0$ Capacitance	C_0	1000	pF
Temperaturkoeffizient von I_{SC} Temperature coefficient of I_{SC}	TC_I	0.16	%/K

Relative Spectral Sensitivity

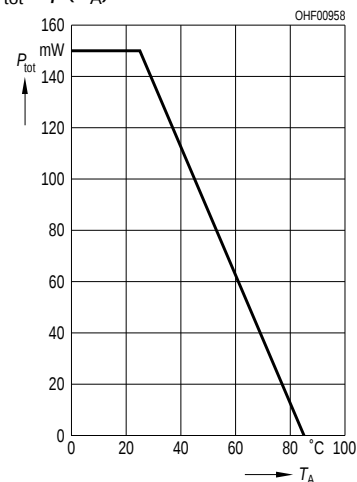
$$S_{\text{rel}} = f(\lambda)$$

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

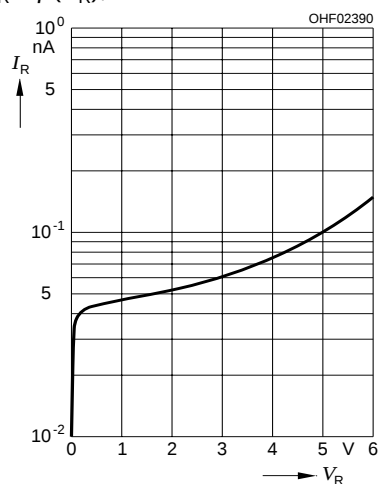
$$E_V = 1000 \text{ lx}, V_R = 5 \text{ V}$$

**Total Power Dissipation**

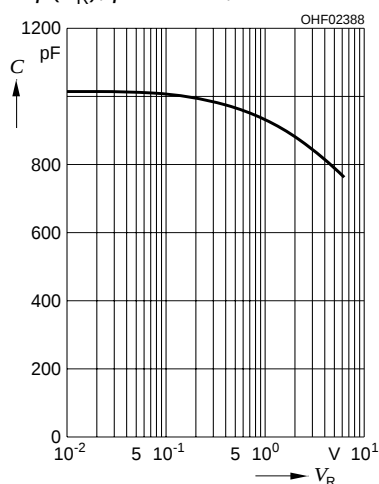
$$P_{\text{tot}} = f(T_A)$$

**Dark Current**

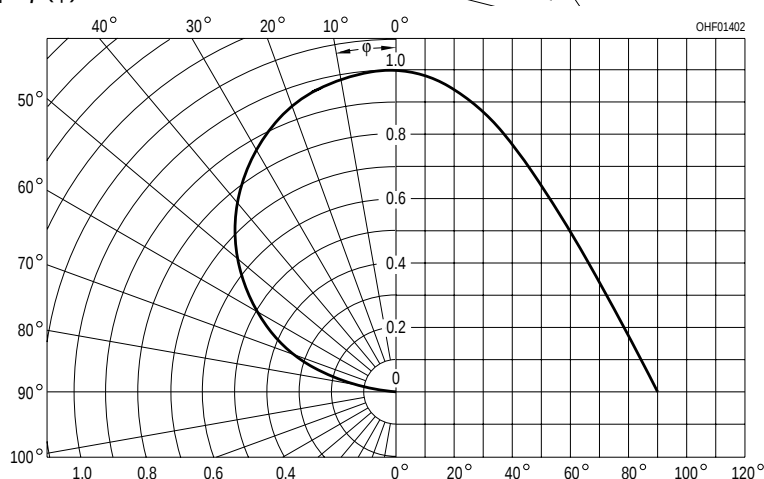
$$I_R = f(V_R), E = 0$$

**Capacitance**

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

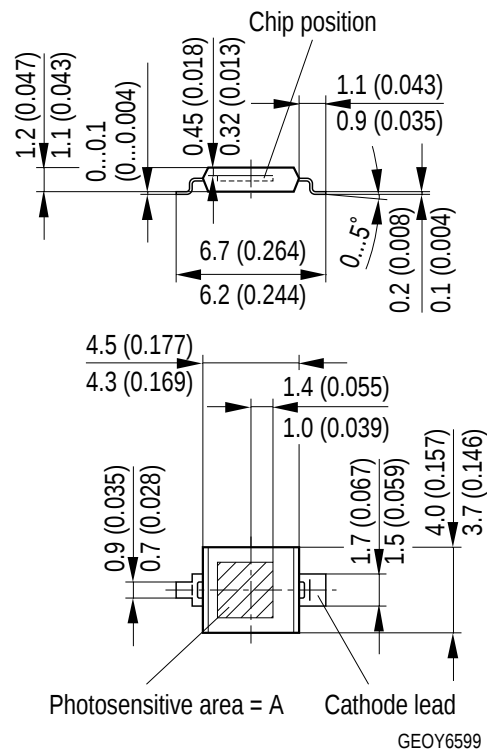
**Directional Characteristics**

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



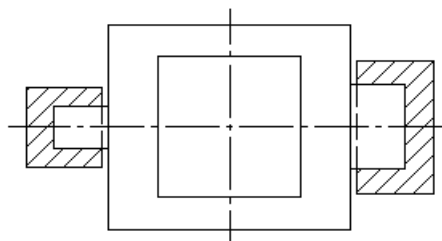
Maßzeichnung Package Outlines

SFH 2430

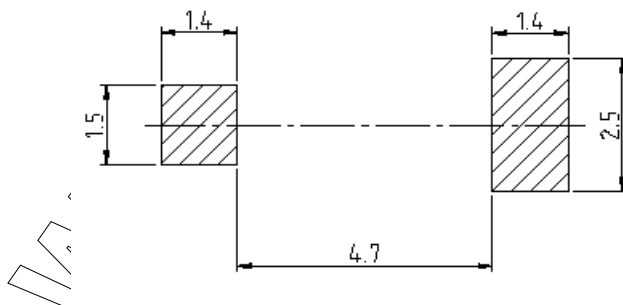


Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

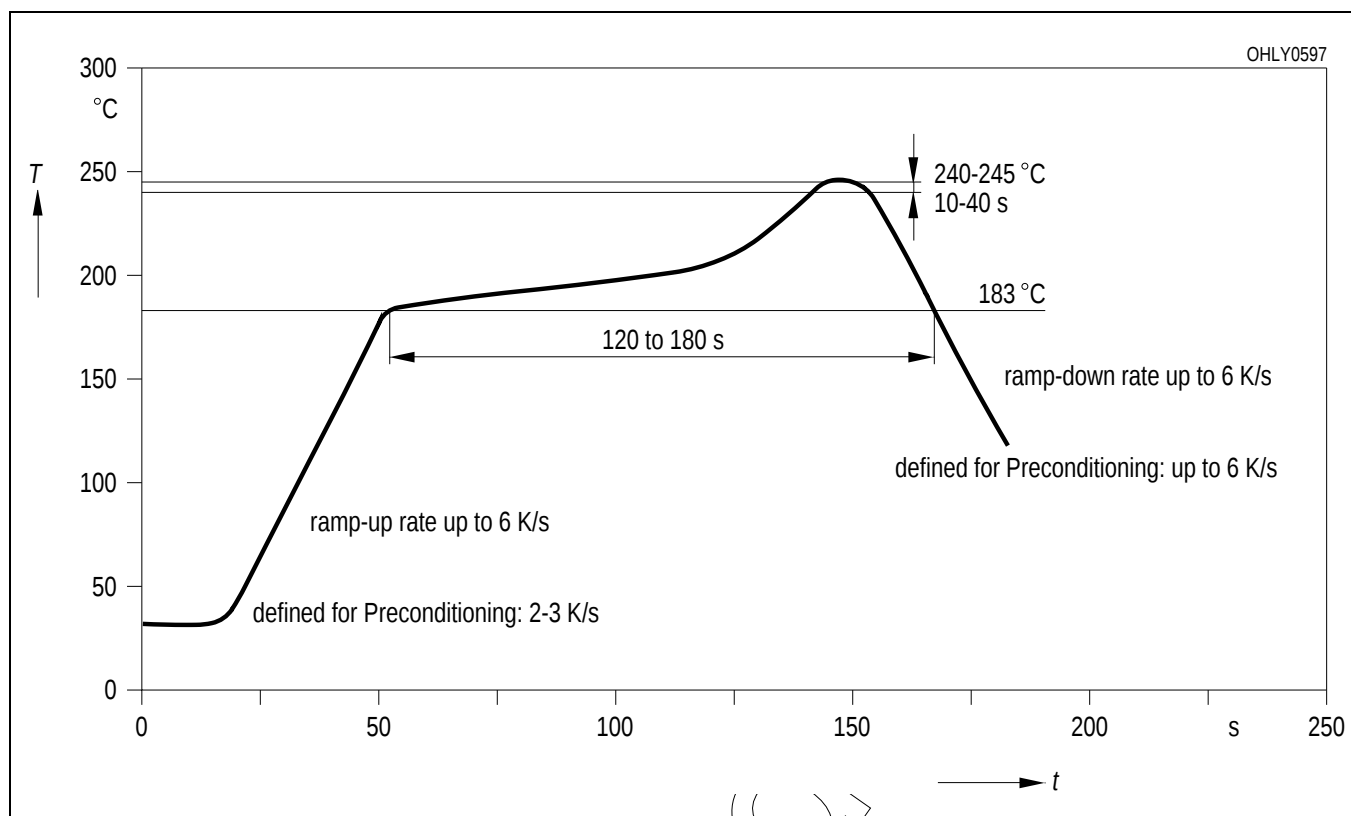
solder pad



Bauteil
positioniert
Component Location
on Pad



Padgeometrie für
verbesserte Wärmeableitung
Paddesign for improved
Heat dissipation



Empfohlenes Profil für IR-Reflow Lötprofil (nach IPC 9501)

Recommended Profile for IR Reflow Soldering Profile (acc. to IPC 9501)

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Attention please!

The information describes the type of component and shall not be considered as assured characteristics.

Terms of delivery and rights to change design reserved. Due to technical requirements components may contain dangerous substances. For information on the types in question please contact our Sales Organization.

Packing

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.

Components used in life-support devices or systems must be expressly authorized for such purpose! Critical components¹, may only be used in life-support devices or systems² with the express written approval of OSRAM OS.

¹ A critical component is a component used in a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or effectiveness of that device or system.

² Life support devices or systems are intended (a) to be implanted in the human body, or (b) to support and/or maintain and sustain human life. If they fail, it is reasonable to assume that the health of the user may be endangered.