

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



SFH 2430



SFH 2430 R

**Wesentliche Merkmale**

- Spektrale Empfindlichkeit angepasst an die Augenempfindlichkeit ( $V\lambda$ )
- Niedriger Temperaturkoeffizient der Fotoempfindlichkeit
- Gute Linearität
- DIL-Plastikbauform mit hoher Packungsdichte

**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

**Applications**

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

Typ Type	Bestellnummer Ordering Code
SFH 2430	Q65110A2673
SFH 2430 R	Q65110A4739

**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	$S$	6.3 (>5)	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 $S_{max}$	$\lambda$	400 ... 900	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	$A$	7.00	mm <sup>2</sup>
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$	2.65 × 2.65	mm × mm
Halbwinkel Half angle	$\varphi$	± 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	$S_\lambda$	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	$\mu\text{s}$
Durchlaßspannung, $I_F = 100\text{ mA}$ , $E = 0$ Forward voltage	$V_F$	1.2	V

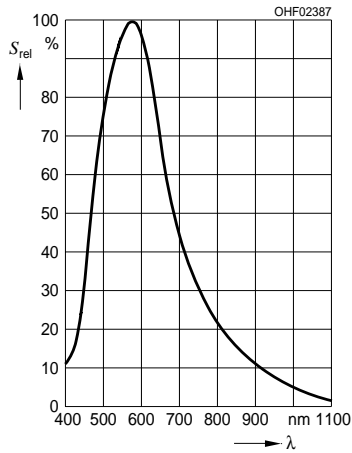
**Kennwerte** ( $T_A = 25\text{ °C}$ , Normlicht A,  $T = 2856\text{ K}$ )

**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 $I_{SC}$	$TC_1$	0.16	%/K

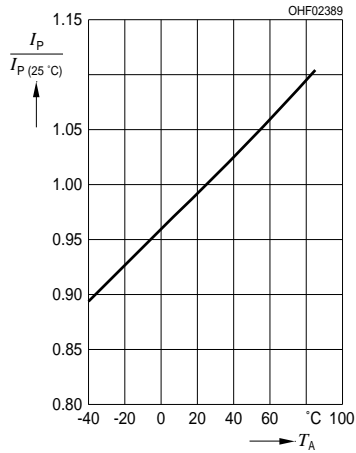
**Relative Spectral Sensitivity**

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



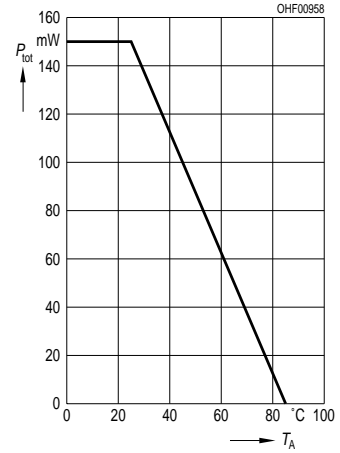
**Photocurrent  $I_P/I_{P(25^\circ C)} = f(T_A)$**

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



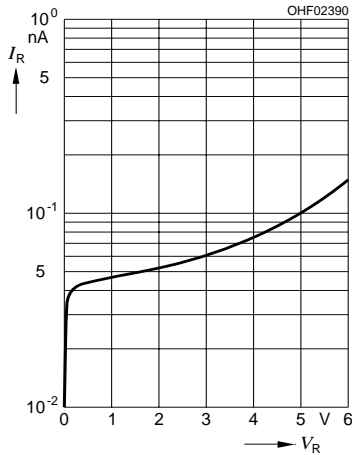
**Total Power Dissipation**

$P_{tot} = f(T_A)$



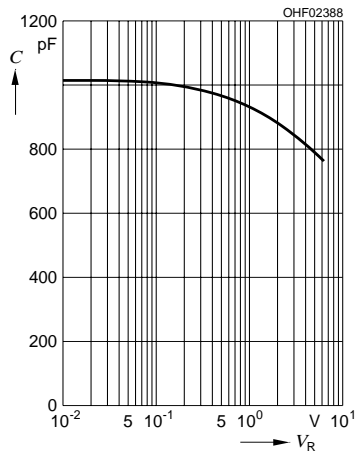
**Dark Current**

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



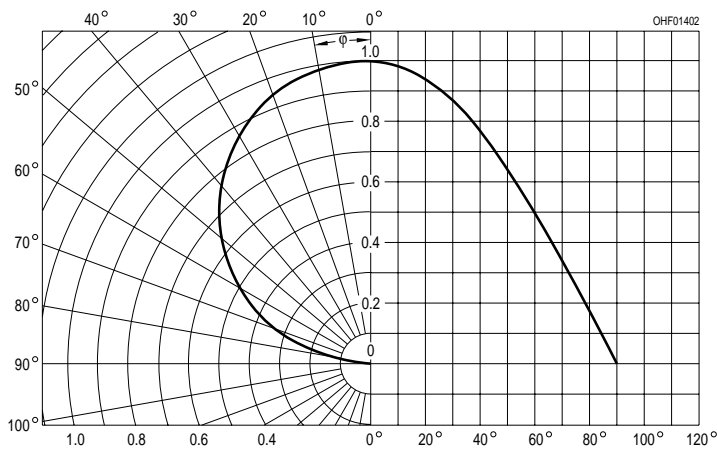
**Capacitance**

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

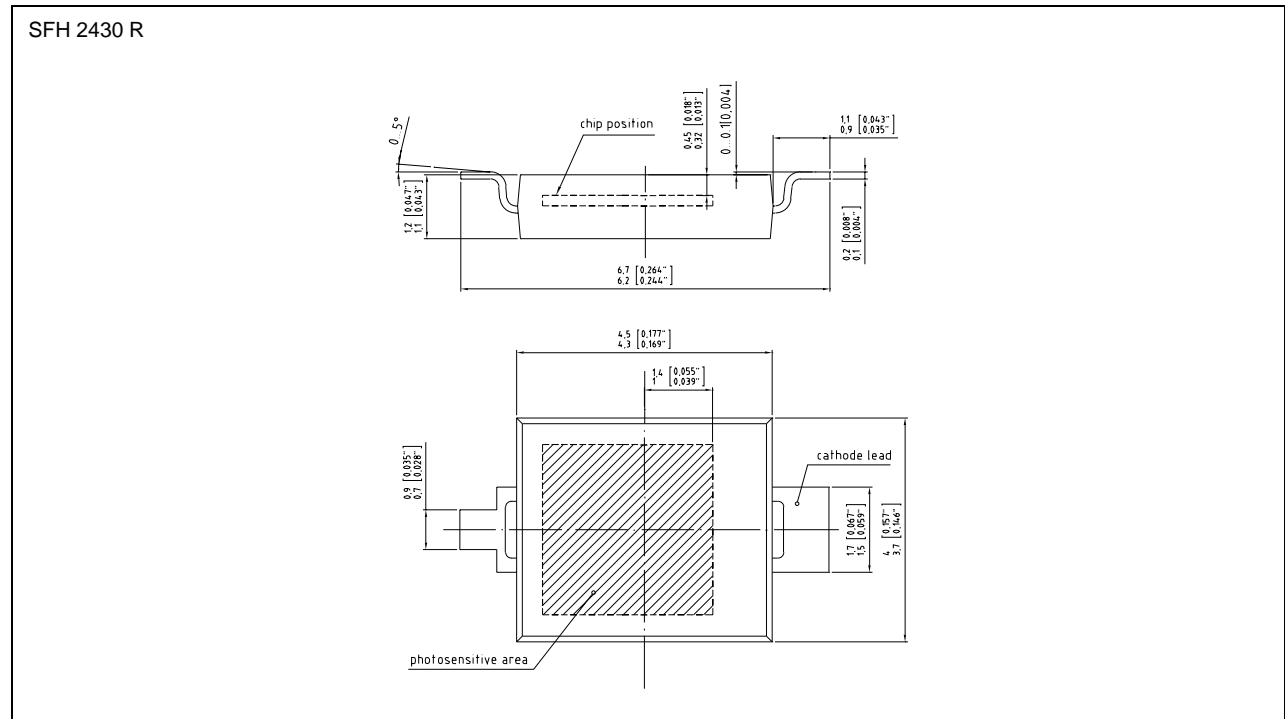
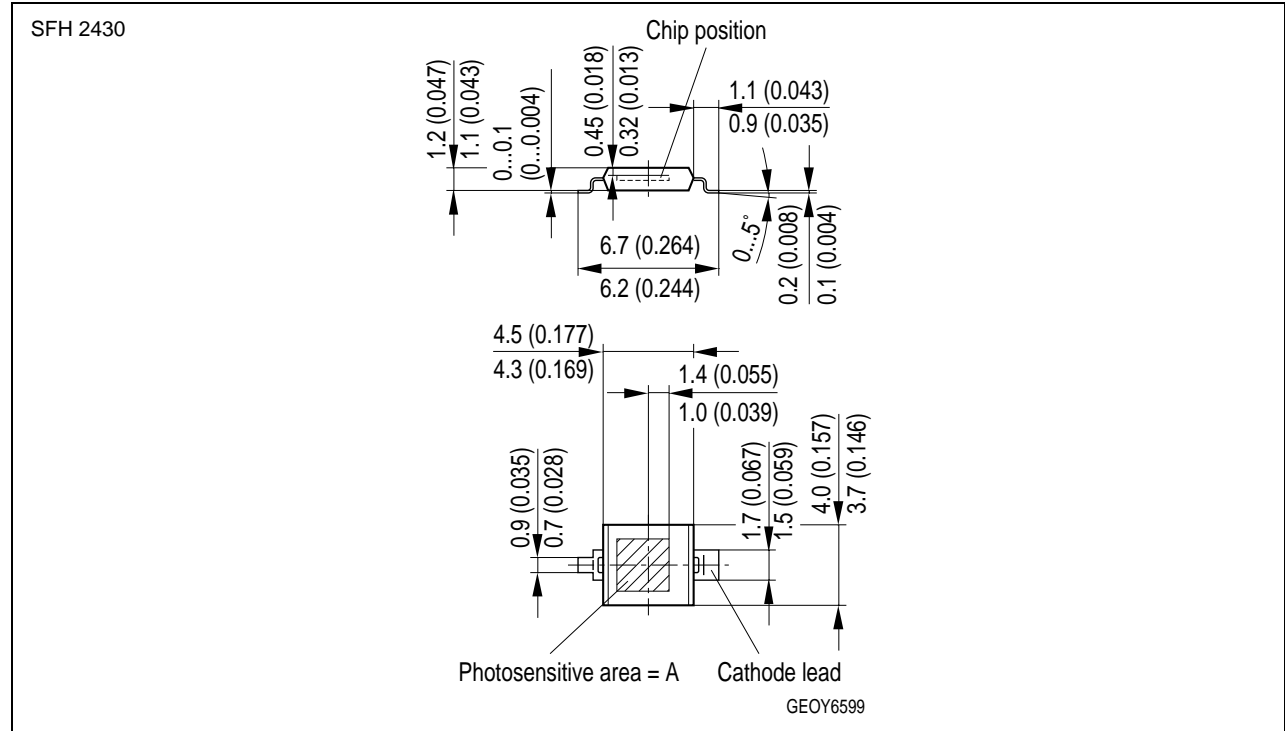


**Directional Characteristics**

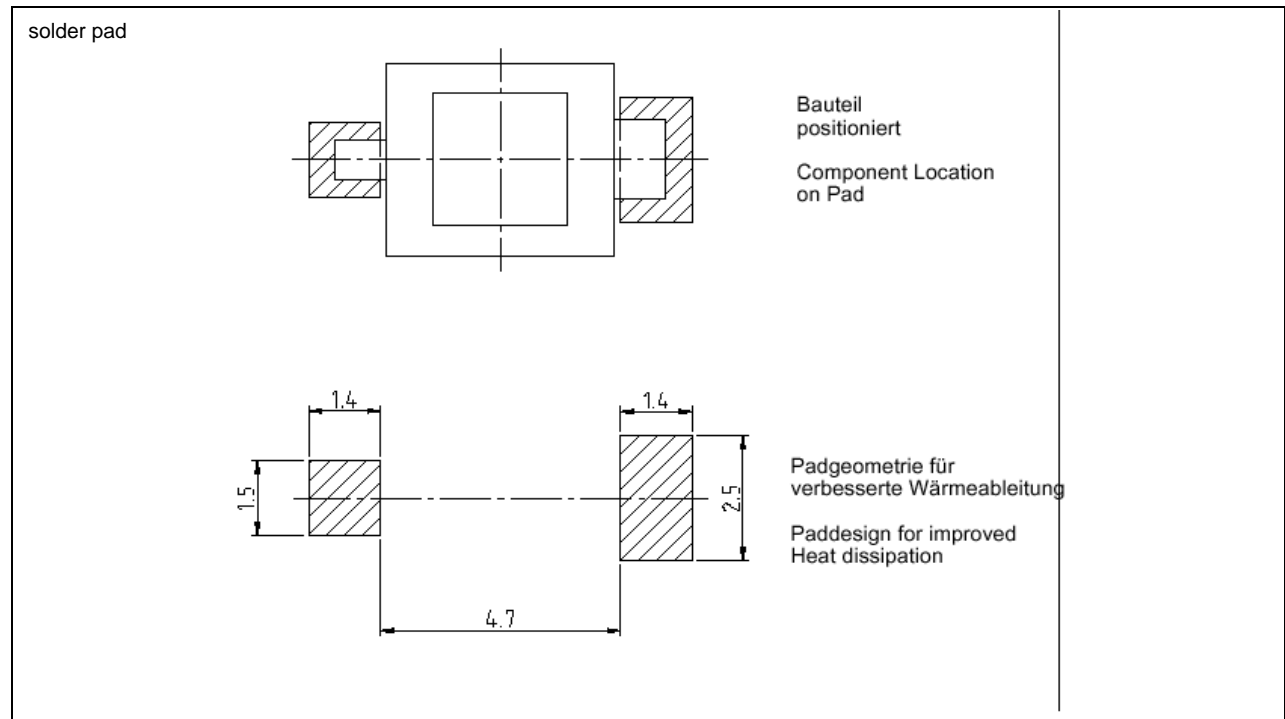
$S_{rel} = f(\varphi)$



Maßzeichnung  
Package Outlines



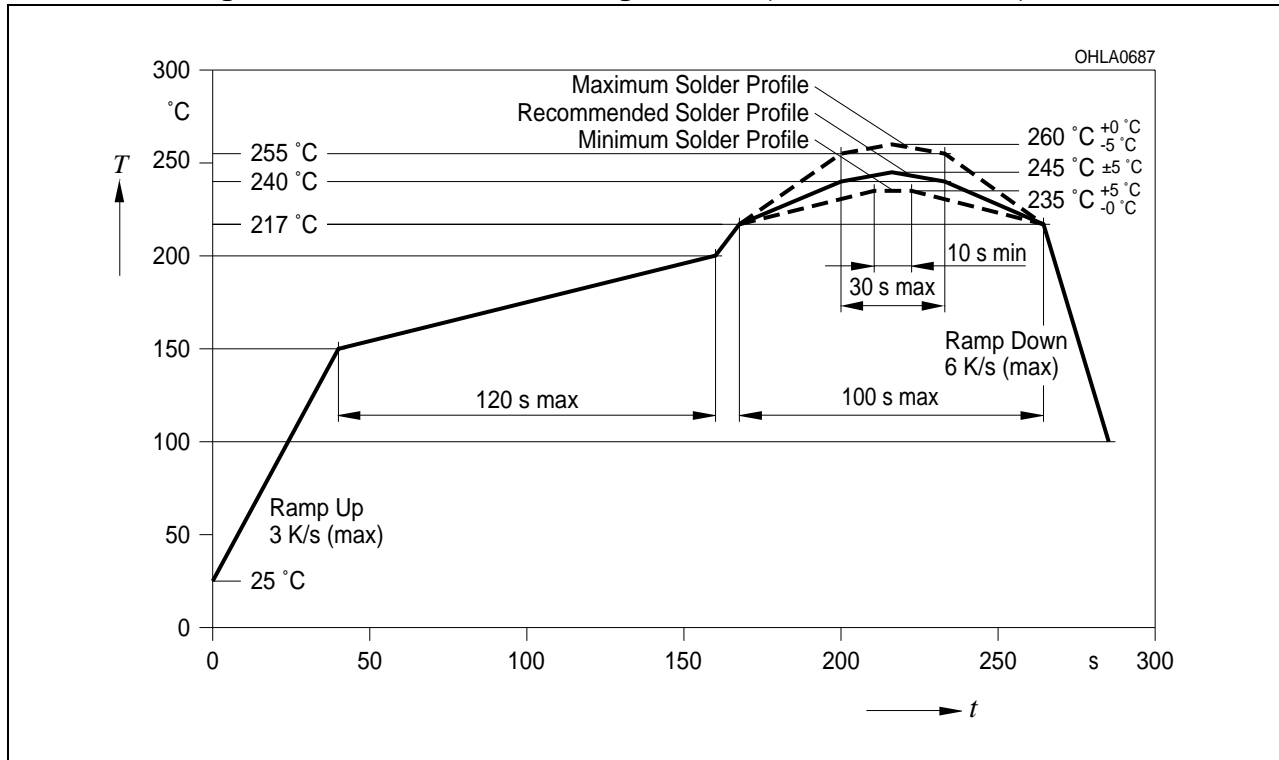
Maße in mm (inch) / Dimensions in mm (inch).



Maße in mm / Dimensions in mm

**Lötbedingungen**  
**Soldering Conditions**  
**Reflow Lötprofil für bleifreies Löten**  
**Reflow Soldering Profile for lead free soldering**

Vorbehandlung nach JEDEC Level 4  
 Preconditioning acc. to JEDEC Level 4  
 (nach J-STD-020C)  
 (acc. to J-STD-020C)



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