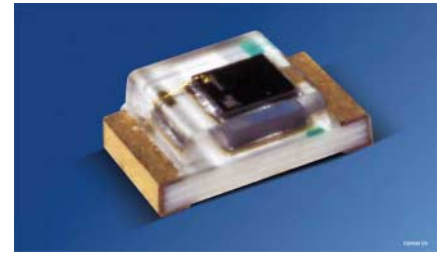


NPN-Si-Fototransistor mit V_λ Charakteristik
Silicon NPN Phototransistor with V_λ Characteristics
Lead (Pb) Free Product - RoHS Compliant

SFH 3710



Wesentliche Merkmale

- Sehr kleines SMT Gehäuse
- Angepaßt an die Augenempfindlichkeit (V_λ)

Features

- Very small SMT package
- Adapted to human eye sensitivity (V_λ)

Anwendungen

- Umgebungslicht-Detektor
- Beleuchtungsmesser
- Dimmungssensor für Hintergrundbeleuchtung
- „Messen/Steuern/Regeln“

Applications

- Ambient light detector
- Exposure meter for daylight and artificial light
- Sensor for Backlight-Dimming
- For control and drive circuits

Typ Type	Bestellnummer Ordering Code	Fotostrom , $E_e = 10 \mu\text{W}/\text{cm}^2$, $\lambda = 560 \text{ nm}$, $V_{\text{CE}} = 5 \text{ V}$ Photocurrent $I_{\text{pce}} (\mu\text{A})$
SFH 3710	Q65110A3107	2.5...12.5
SFH 3710-2/3	Q65110A3512	2.5...8.0
SFH 3710-3/4	Q65110A3511	4.0...12.5

Einzelgruppen auf Anfrage / single bins on request

Grenzwerte ($T_A = 25\text{ °C}$)**Maximum Ratings**

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebs- und Lagertemperatur Operating and storage temperature range	$T_{op}; T_{stg}$	- 40 ... + 85	°C
Kollektor-Emitterspannung Collector-emitter voltage	V_{CE}	5.5	V
Kollektorstrom Collector current	I_C	20	mA
Emitter-Kollektorspannung Emitter-collector voltage	V_{EC}	0.5	V

Kennwerte ($T_A = 25\text{ °C}$)**Characteristics**

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	λ_{Smax}	570	nm
Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von S_{max} Spectral range of sensitivity $S = 10\%$ of S_{max}	λ	350 ... 950	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	0.29	mm ²
Abmessung der Chipfläche Dimensions of chip area	$L \times B$ $L \times W$	0.75×0.75	mm × mm
Halbwinkel Half angle	φ	± 60	Grad. deg.
Kapazität, $V_{CE} = 0\text{ V}$, $f = 1\text{ MHz}$, $E = 0$ Capacitance	C_{CE}	4	pF
Dunkelstrom Dark current $V_R = 5\text{ V}$	I_{CEO}	3 (< 50)	nA
Temperaturkoeffizient Temperature Coefficient Normlicht A / Standard Light A $\lambda = 550\text{ nm}$	TK $TK_{550\text{ nm}}$	0.9 0.78	%/K %/K

Kennwerte ($T_A = 25\text{ °C}$)

Characteristics

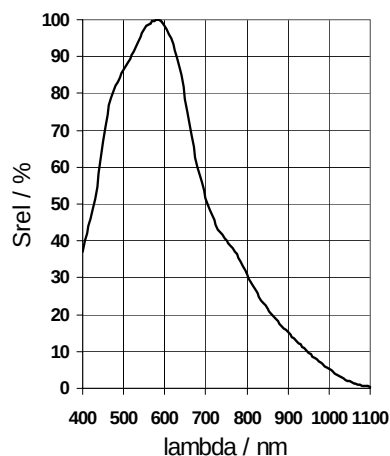
Bezeichnung Parameter	Symbol Symbol	Wert Value			Einheit Unit
		-2	-3	-4	
Fotostrom Photocurrent $E_e = 10\text{ }\mu\text{W}/\text{cm}^2$, $\lambda = 560\text{ nm}$, $V_{CE} = 5\text{ V}$ $E_v = 1000\text{ lx}$, Normlicht/Standard light A	I_{PCE}	2.5...5 220	4...8 350	6.3...12.5 570	μA μA
Kollektor-Emitter-Sättigungsspannung Collector-emitter saturation voltage $I_C = I_{PCEmin}^{1)} \times 0.3$, $E_e = 10\text{ }\mu\text{W}/\text{cm}^2$, $\lambda = 560\text{ nm}$	V_{CEsat}	100	100	100	mV

¹⁾ I_{PCEmin} ist der minimale Fotostrom der jeweiligen Gruppe

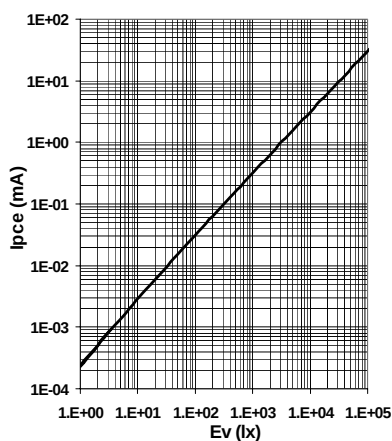
¹⁾ I_{PCEmin} is the min. photocurrent of the specified group

Relative Spectral Sensitivity

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

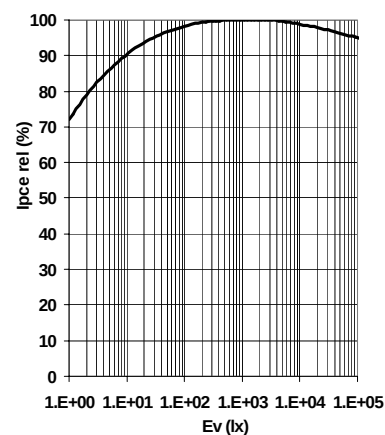
**Photocurrent**

$$I_{\text{PCE}} = f(E_V), V_{\text{CE}} = 5 \text{ V}$$

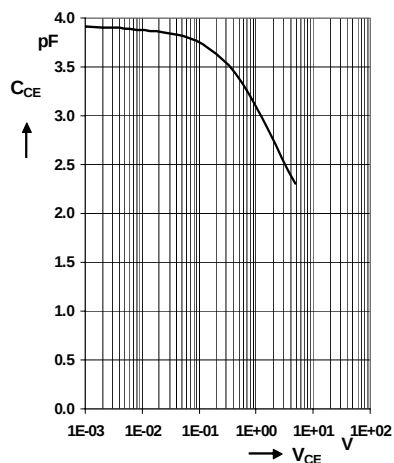
**Photocurrent**

$$I_{\text{PCE}} = f(E_V), V_{\text{CE}} = 5 \text{ V}$$

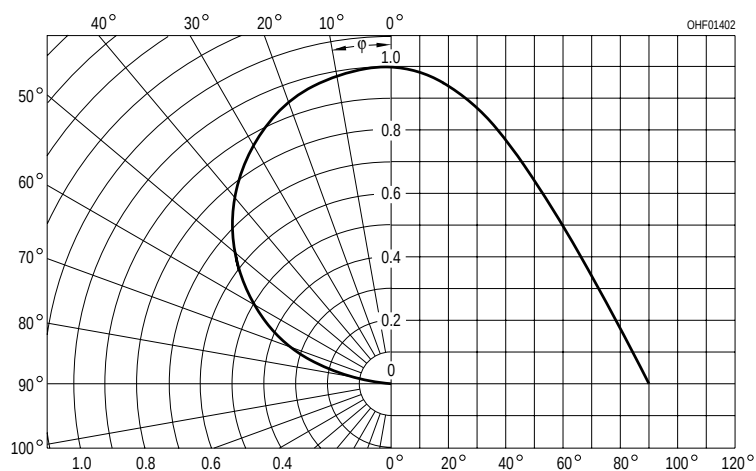
normalized to 1000lx

**Collector-Emitter Capacitance**

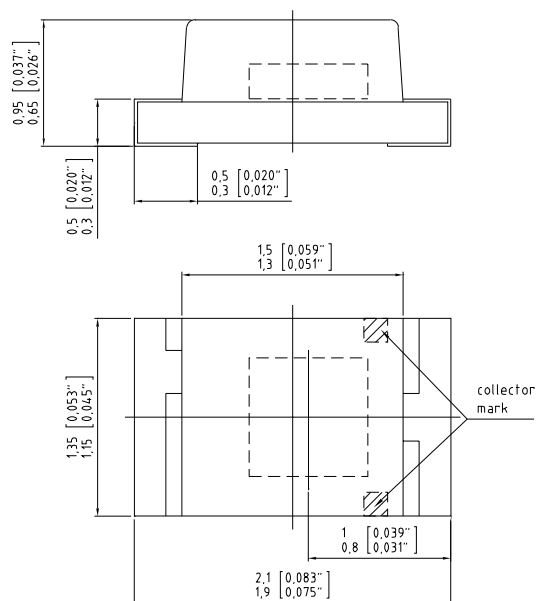
$$C_{\text{CE}} = f(V_{\text{CE}})$$

**Directional Characteristics**

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



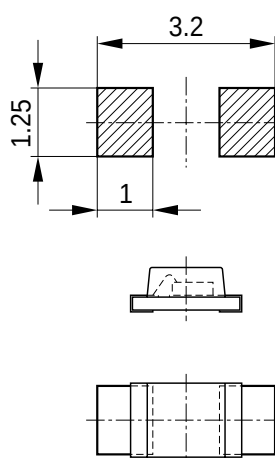
Maßzeichnung Package Outlines



chip placement in y direction:
chip center : -0,1 ... 0,1 [-0,004" ... 0,004"] referred to package axis

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

Empfohlenes Lötpaddesign Recommended Solderpad Design



Bauteil positioniert
Component location on pad

OHFP2578

Maße in mm / Dimensions in mm

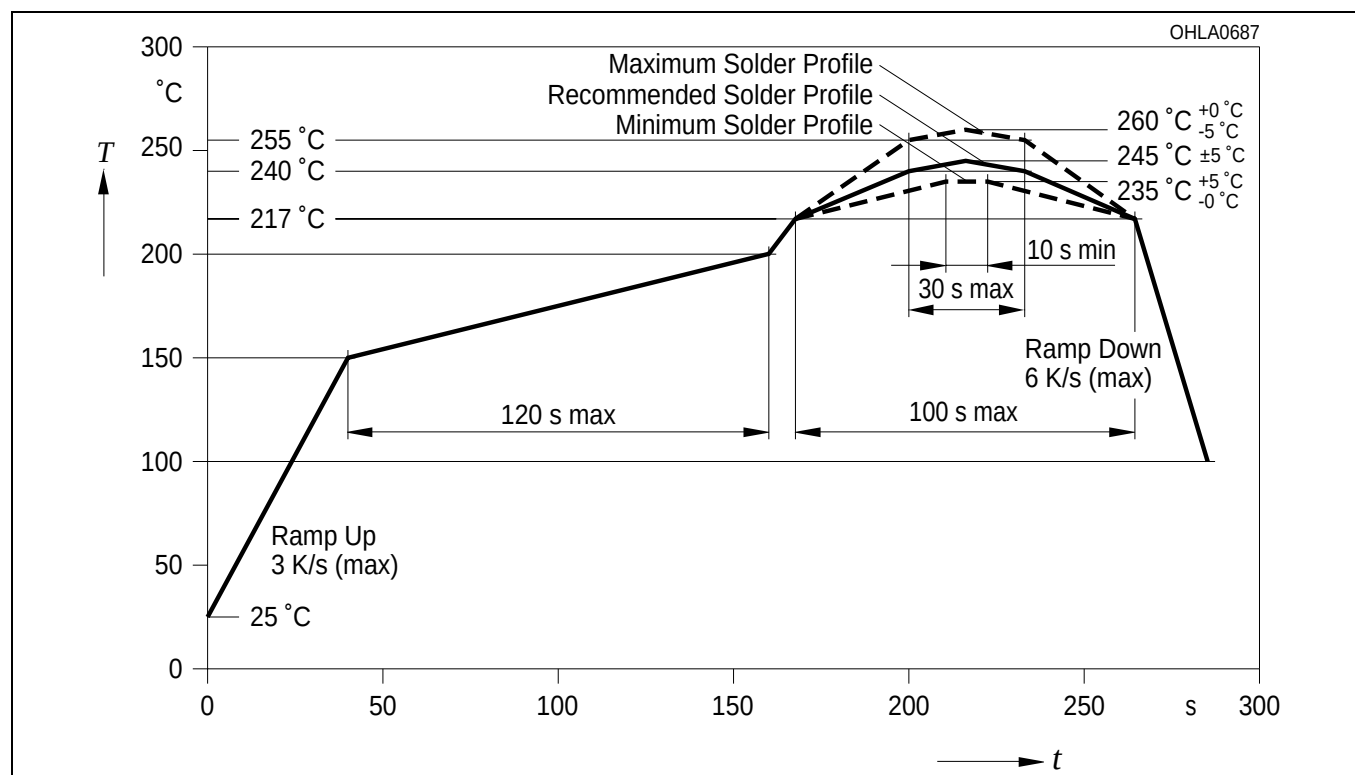
Lötbedingungen**Soldering Conditions****Reflow Lötprofil für bleifreies Löten****Reflow Soldering Profile for lead free soldering**

Vorbehandlung nach JEDEC Level 2

Preconditioning acc. to JEDEC Level 2

(nach J-STD-020C)

(acc. to J-STD-020C)



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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.

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.