

NPN-Silizium-Fototransistor in SMT-Gehäuse mit Linse
Silicon NPN Phototransistor in SMT-Package with lens
Lead (Pb) Free Product - RoHS Compliant

SFH 3219



Wesentliche Merkmale

- TOPLED mit Linse
- Speziell geeignet für Anwendungen im Bereich von 430 nm bis 1150 nm
- Hohe Linearität
- Für alle Lötverfahren geeignet
- Gehäusegleich mit SFH 4209, SFH 4219, SFH 4289

Features

- TOPLED with lens
- Especially suitable for applications from 430 nm to 1150 nm
- High linearity
- Suitable for all soldering methods
- Same package as SFH 4209, SFH 4219, SFH 4289

Anwendungen

- Miniaturlichtschranken
- Industrieelektronik
- „Messen/Steuern/Regeln“
- Sensorik

Applications

- Miniature photointerrupters
- Industrial electronics
- For control and drive circuits
- Sensor technology

Typ Type	Bestellnummer Ordering Code	Fotostrom , ($E_e=0,1\text{mW/cm}^2, \lambda=950\text{nm}$ $V_{CE} = 5\text{ V}$) Photocurrent I_{pce} (μA)
SFH 3219	Q65110A2651	> 63

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
Kollektor-Emitterspannung Collector-emitter voltage	V_{CE}	35	V
Kollektorstrom Collector current	I_C	15	mA
Kollektorspitzenstrom, $\tau < 10 \mu s$ Collector surge current	I_{CS}	75	mA
Verlustleistung, $T_A = 25 \text{ }^\circ\text{C}$ Total power dissipation	P_{tot}	165	mW
Wärmewiderstand für Montage auf PC-Board Thermal resistance for mounting on pcb	R_{thJA}	450	K/W

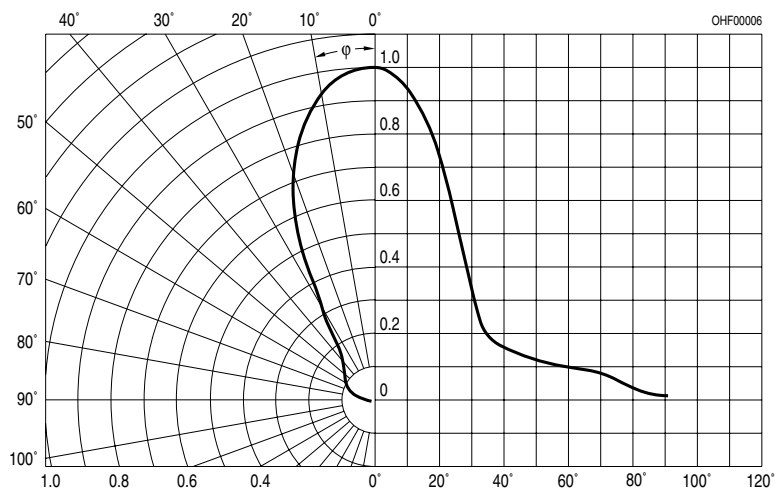
Kennwerte ($T_A = 25\text{ °C}$, $\lambda = 950\text{ nm}$)

Characteristics

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\text{ max}}$	990	nm
Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von S_{max} Spectral range of sensitivity $S = 10\%$ of S_{max}	λ	430 ...1150	nm
Bestrahlungsempfindliche Fläche ($\varnothing 220\text{ }\mu\text{m}$) Radiant sensitive area	A	0.038	mm^2
Abmessung der Chipfläche Dimensions of chip area	$L \times B$ $L \times W$	0.45×0.45	$\text{mm} \times \text{mm}$
Halbwinkel Half angle	φ	± 25	Grad deg.
Kapazität, $V_{\text{CE}} = 0\text{ V}$, $f = 1\text{ MHz}$, $E = 0$ Capacitance	C_{CE}	5.0	pF
Dunkelstrom Dark current $V_{\text{CE}} = 20\text{ V}$, $E = 0$	I_{CEO}	1 (≤ 50)	nA
Fotostrom Photo current $E_e = 0.1\text{ mW/cm}^2$, $V_{\text{CE}} = 5\text{ V}$	I_{PCE}	≥ 63	μA
Anstiegszeit/Abfallzeit Rise and fall time $I_{\text{C}} = 1\text{ mA}$, $V_{\text{CC}} = 5\text{ V}$, $R_{\text{L}} = 1\text{ k}\Omega$	t_r , t_f	7	μs
Kollektor-Emitter-Sättigungsspannung Collector-emitter saturation voltage $I_{\text{C}} = 20\text{ }\mu\text{A}$ $E_e = 0.1\text{ mW/cm}^2$	V_{CEsat}	150	mV

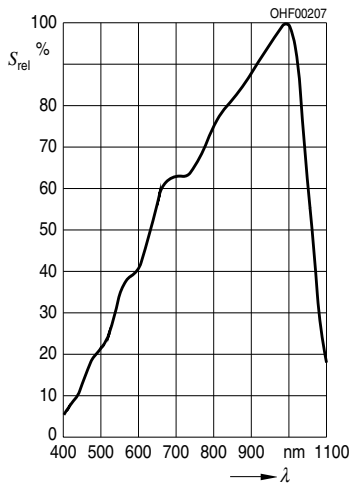
Directional Characteristics

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



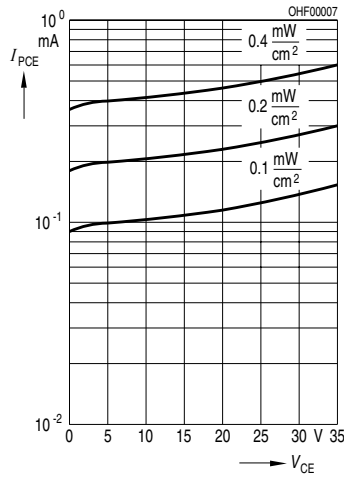
Relative Spectral Sensitivity

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



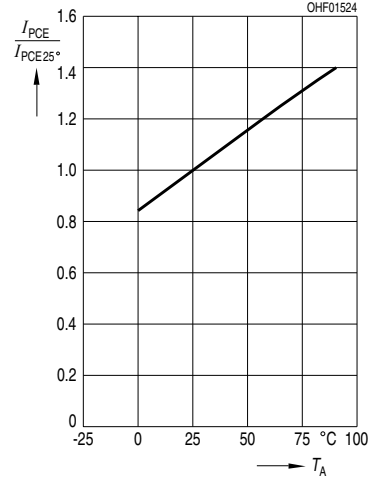
Photocurrent

$I_{PCE} = f(V_{CE}), E_e = \text{Parameter}$



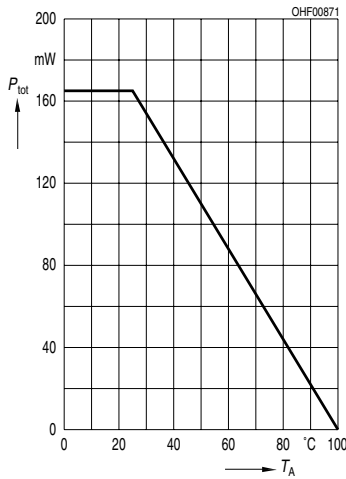
Photocurrent

$I_{PCE} / I_{PCE25^\circ} = f(T_A), V_{CE} = 5 \text{ V}$



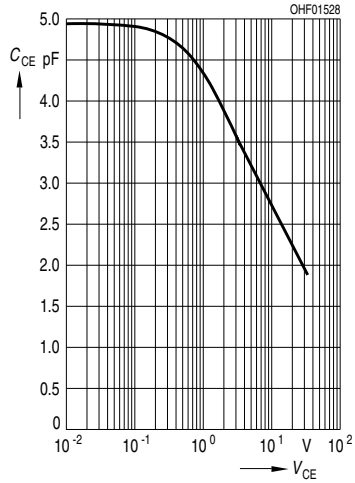
Total Power Dissipation

$P_{tot} = f(T_A)$



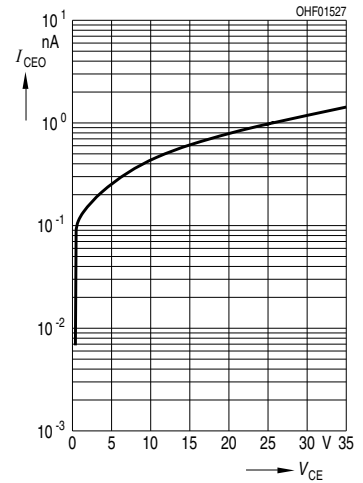
Capacitance

$C_{CE} = f(V_{CE}), f = 1 \text{ MHz}, E = 0$



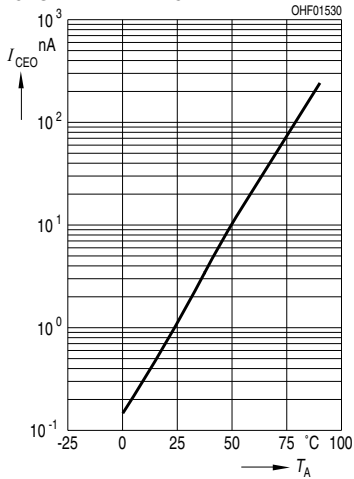
Dark Current

$I_{CEO} = f(V_{CE}), E = 0$

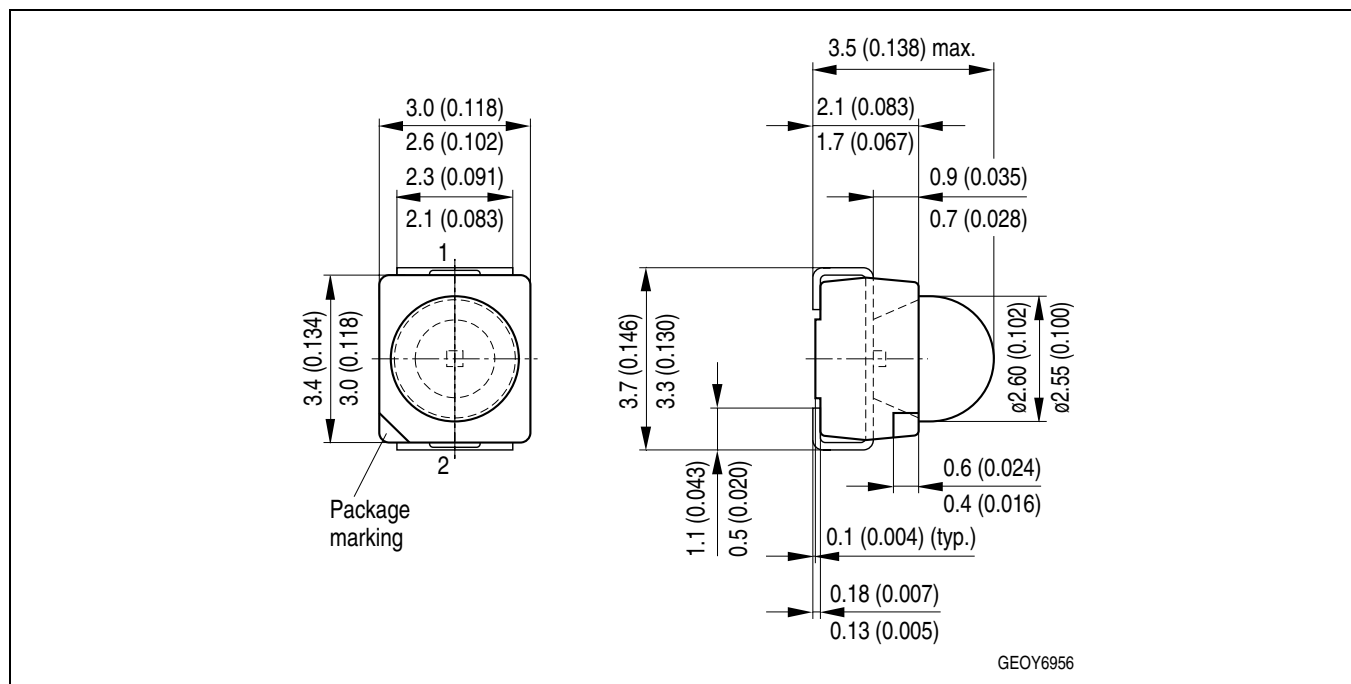


Dark Current

$I_{CEO} = f(T_A), V_{CE} = 5 \text{ V}, E = 0$



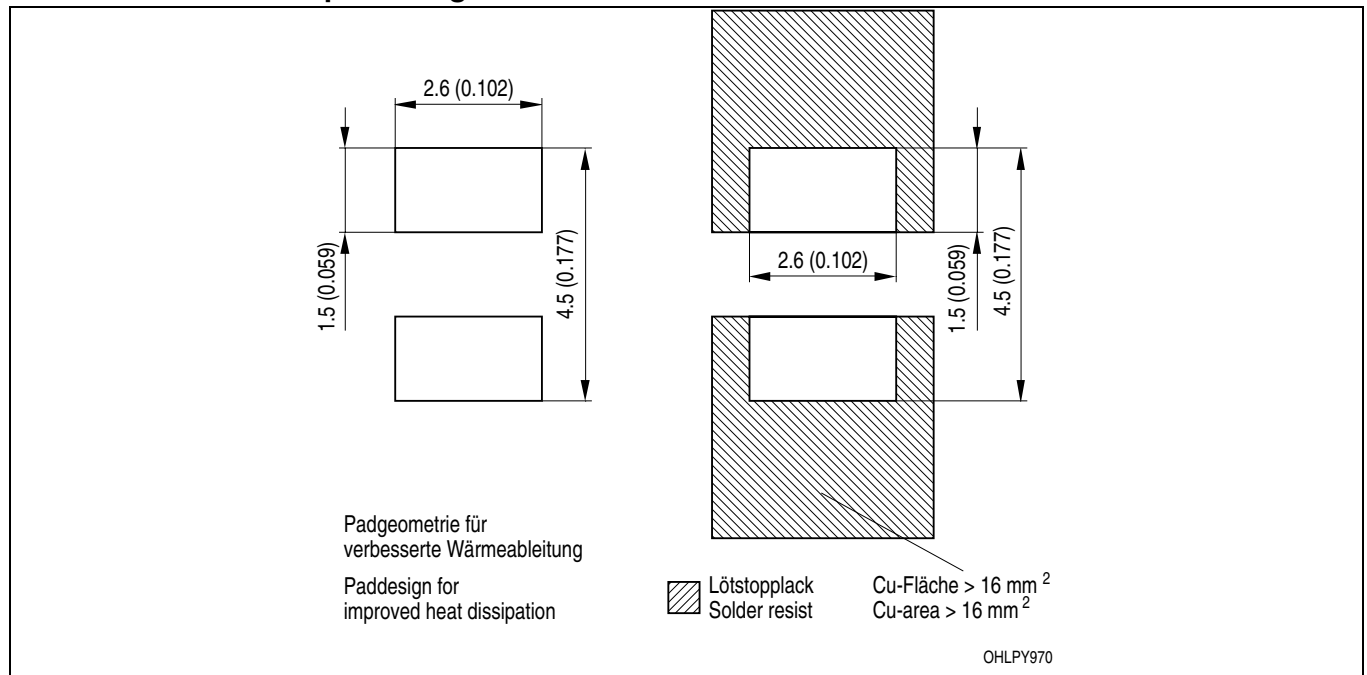
Maßzeichnung Package Outlines



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

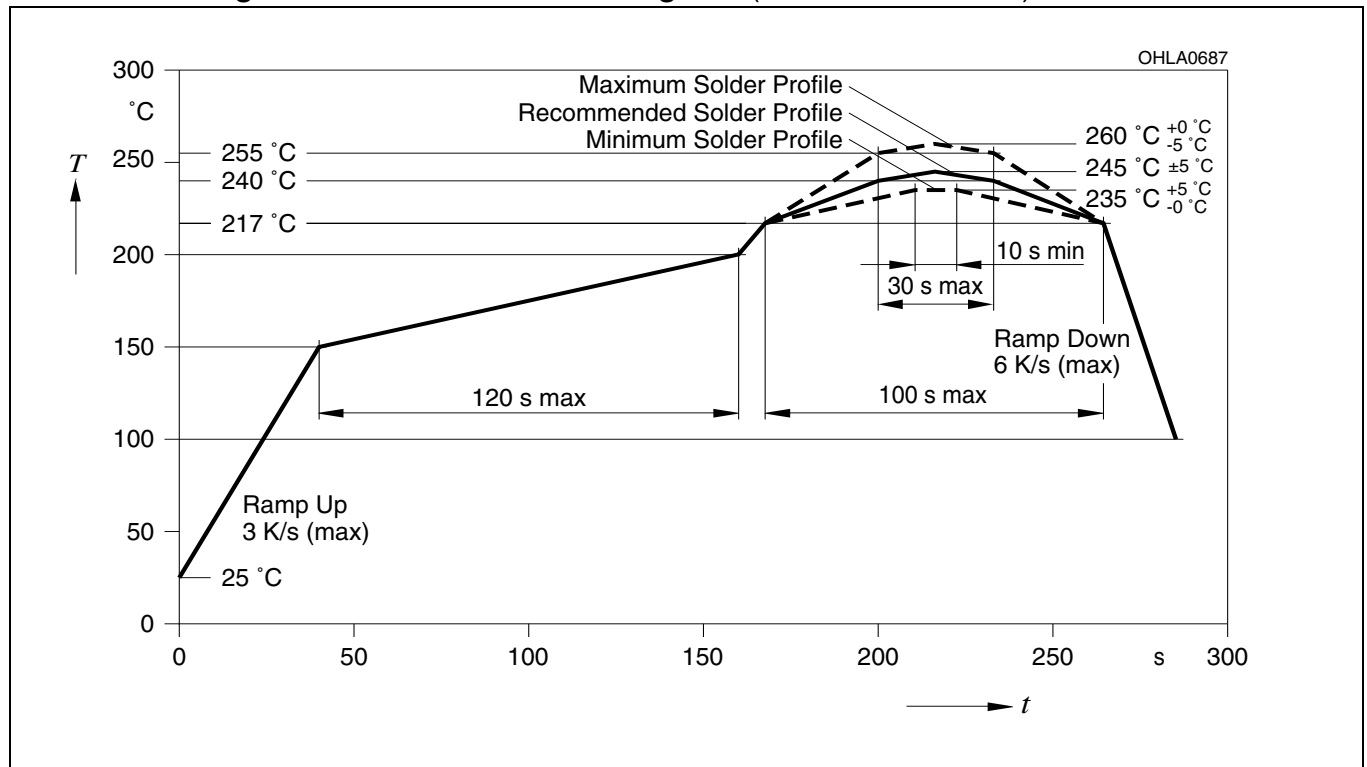
Gehäuse / Package	TOPLED® mit Linse (P-LCC-2) / TOPLED® with lens (P-LCC-2)
Anschlussbelegung pin configuration	1 = Emitter / emitter 2 = Kollektor / collector
Farbe Color	weiß white

Empfohlenes Lötpaddesign
Recommended Solderpad Design



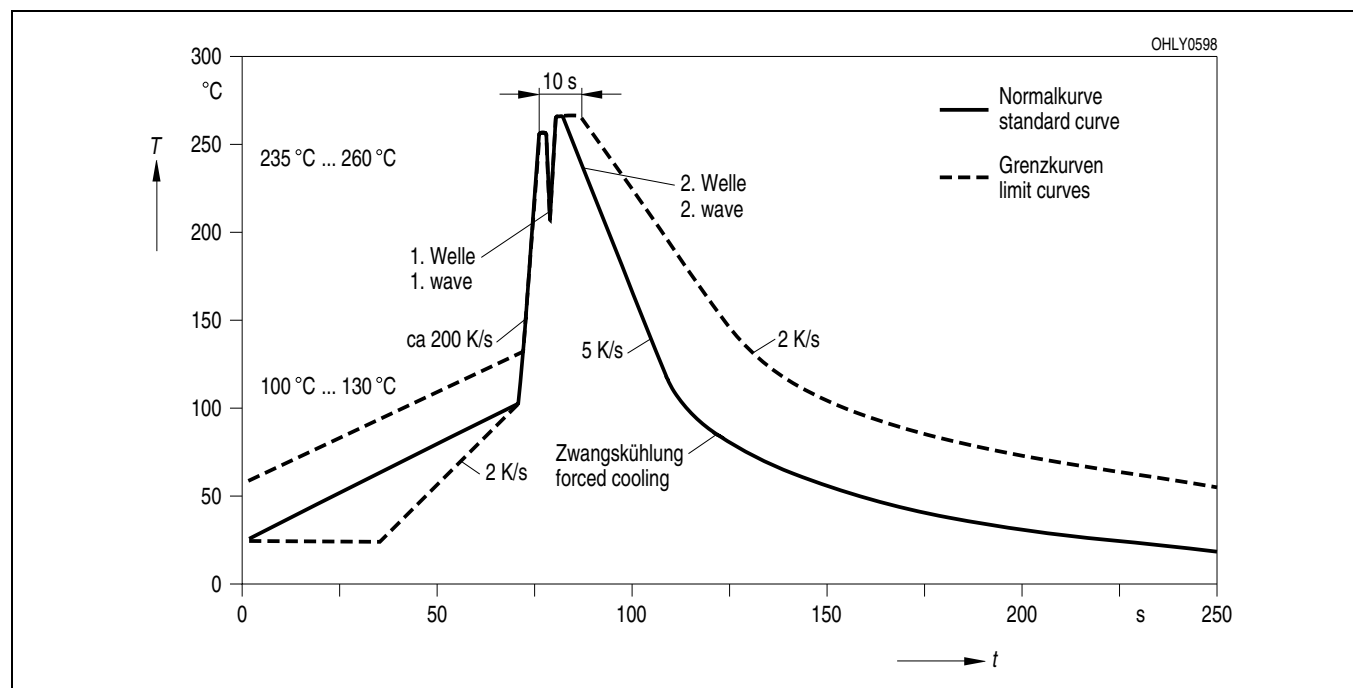
Lötbedingungen
Soldering Conditions
Reflow Lötprofil für bleifreies Löt
Reflow Soldering Profile for lead free soldering

Vorbehandlung nach JEDEC Level 2
 Preconditioning acc. to JEDEC Level 2
 (nach J-STD-020C)
 (acc. to J-STD-020C)



Wellenlötten (TTW) TTW Soldering

(nach CECC 00802)
(acc. to CECC 00802)



Published by
OSRAM Opto Semiconductors GmbH
Wernerwerkstrasse 2, D-93049 Regensburg
www.osram-os.com

© All Rights Reserved.

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.

EU RoHS and China RoHS compliant product



此产品符合欧盟 RoHS 指令的要求；

按照中国的相关法规和标准，不含有毒有害物质或元素。