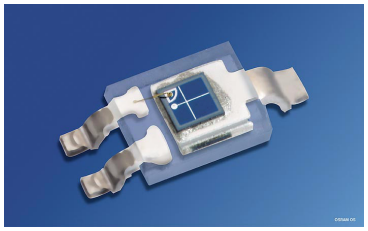
NPN-Silizium-Fototransistor
Silicon NPN Phototransistor
Lead (Pb) Free Product - RoHS Compliant

SFH 3400



Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 460 nm bis 1080 nm
- Hohe Linearität
- Nur gegurtet lieferbar

Features

- Especially suitable for applications from 460 nm to 1080 nm
- High linearity
- Available only on tape and reel

Anwendungen

- Umgebungslicht-Detektor
- Lichtschranken
- Industrieelektronik
- „Messen/Steuern/Regeln“

Applications

- Ambient light detector
- Photointerrupters
- Industrial electronics
- For control and drive circuits

Typ **Type**	**Bestellnummer** **Ordering Code**	**Fotostrom** , (E_e=0,1mW/cm^2,λ=950nm V_{CE} = 5 V) **Photocurrent** Ipce (µA)
SFH 3400	Q65110A2629	63...320
SFH 3400-2/3	Q65110A2634	100...320

Opto Semiconductors OSRAM

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} V_{CE} (t < 2 min)	20 70	V
Kollektorstrom Collector current	I_C	50	mA
Kollektorspitzenstrom, τ < 10 µs Collector surge current	I_{CS}	100	mA
Emitter-Kollektorspannung Emitter-collector voltage	V_{EC}	7	V
Verlustleistung, T_A = 25 °C Total power dissipation	P_{tot}	120	mW
Wärmewiderstand für Montage auf PC-Board Thermal resistance for mounting on pcb	R_{thJA}	450	K/W

Kennwerte (T_A = 25 °C, λ = 950 nm)
Characteristics

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\ max}$	850	nm
Spektraler Bereich der Fotoempfindlichkeit S = 10% von S_{max} Spectral range of sensitivity S = 10% of S_{max}	λ	460 …1080	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	0.55	mm^2
Abmessungen der Chipfläche Dimensions of chip area	$L \times B$ $L \times W$	1 × 1	mm × mm
Halbwinkel Half angle	φ	± 60	Grad deg.
Kapazität, V_{CE} = 5 V, f = 1 MHz, E = 0 Capacitance	C_{CE}	10	pF
Dunkelstrom Dark current V_{CE} = 10 V, E = 0	I_{CEO}	3 (≤100)	nA

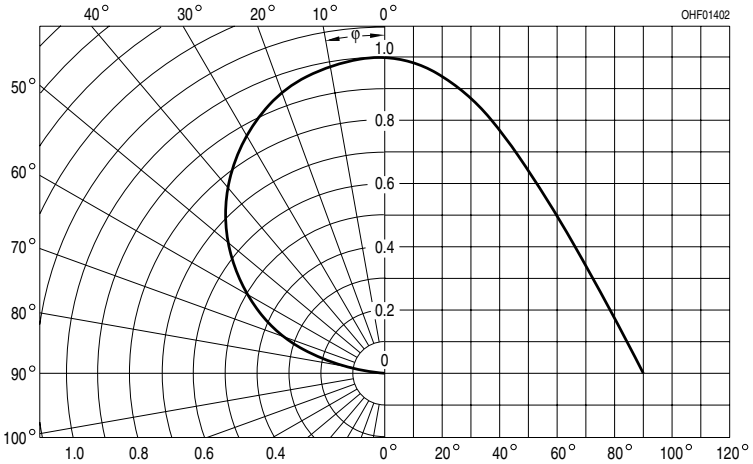
Die Fototransistoren werden nach ihrer Fotoempfindlichkeit gruppiert und mit arabischen Ziffern gekennzeichnet.
The phototransistors are grouped according to their spectral sensitivity and distinguished by arabian figures.

Bezeichnung Parameter	Symbol Symbol	Wert Value			Einheit Unit
		-1	-2	-3	
Fotostrom, λ = 950 nm Photocurrent E_e = 0.1 mW/cm², V_{CE} = 5 V E_v = 1000 lx, Normlicht A/ standard light A, V_{CE} = 5 V	I_{PCE} I_{PCE}	63 …125 1.65	100 …200 2.6	160 …320 4.2	µA mA
Anstiegszeit/Abfallzeit Rise and fall time I_C = 1 mA, V_{CC} = 5 V, R_L = 1 kΩ	t_r, t_f	16	24	34	µs
Kollektor-Emitter-Sättigungsspannung Collector-emitter saturation voltage $I_C = I_{PCEmin}$ [1] × 0.3, E_e = 0.1 mW/cm²	V_{CEsat}	170	170	170	mV

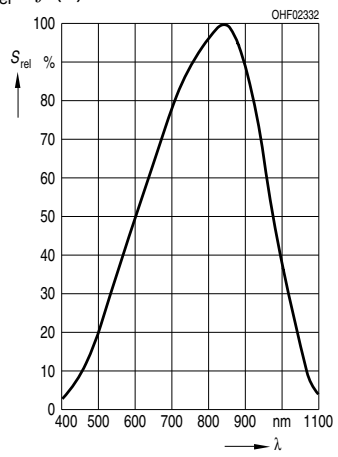
[1] I_{PCEmin} ist der minimale Fotostrom der jeweiligen Gruppe.

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

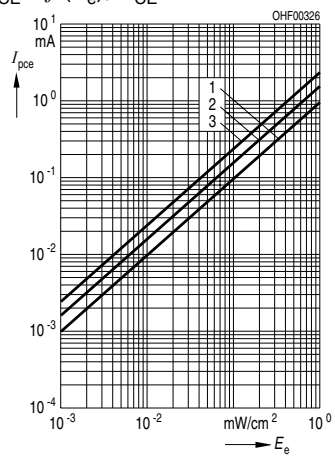
Directional Characteristics $S_{rel} = f(\varphi)$



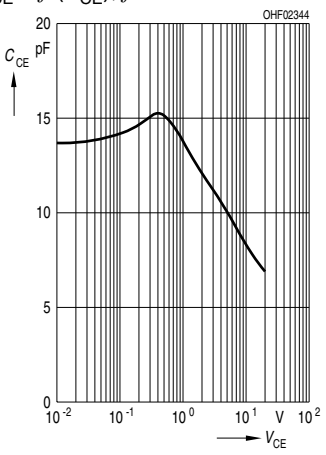
Rel. Spectral Sensitivity,
$S_{rel} = f(\lambda)$



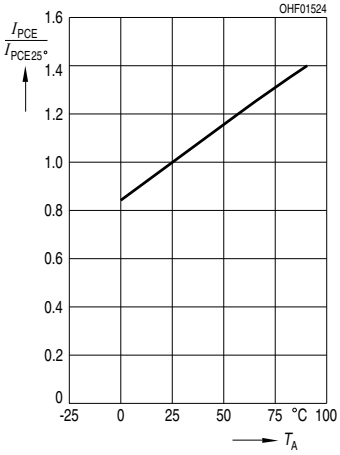
Photocurrent
$I_{PCE} = f(E_e)$, V_{CE} = 5 V



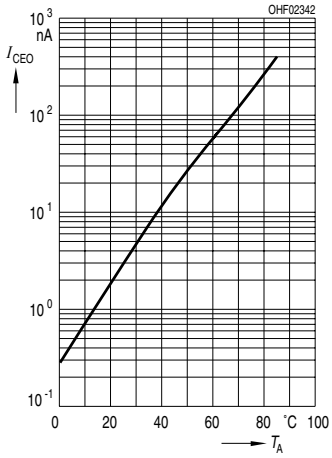
Collector-Emitter Capacitance
$C_{CE} = f(V_{CE})$, f = 1 MHz



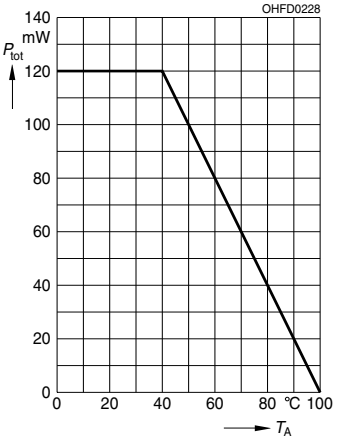
Photocurrent $I_{PCE} = f(T_A)$,
V_{CE} = 5 V, normalized to 25 °C



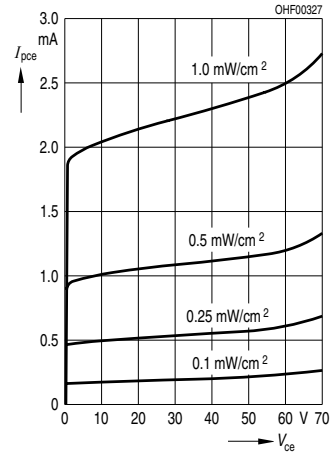
Dark Current
$I_{CEO} = f(T_A)$, V_{CE} = 10 V, E = 0



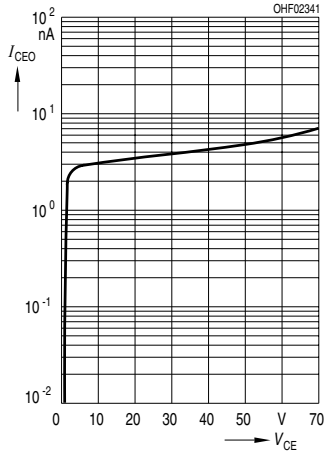
Total Power Dissipation
$P_{tot} = f(T_A)$



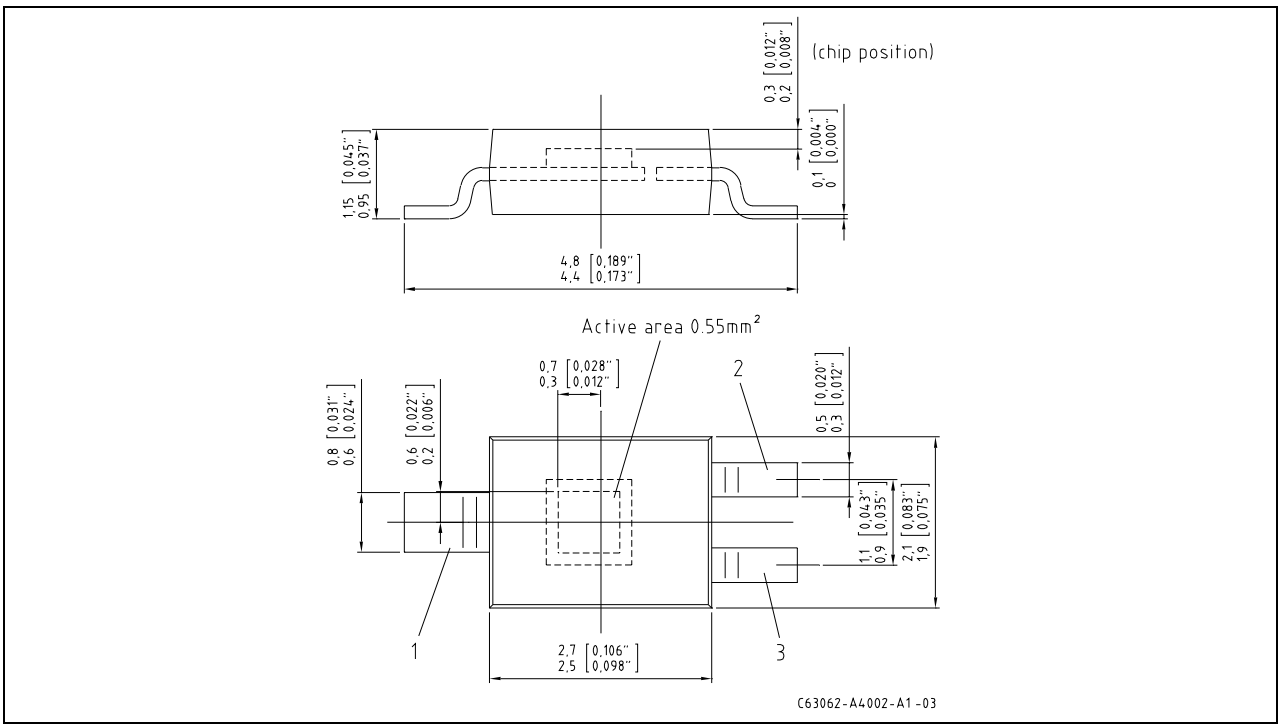
Photocurrent
$I_{PCE} = f(V_{CE})$



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



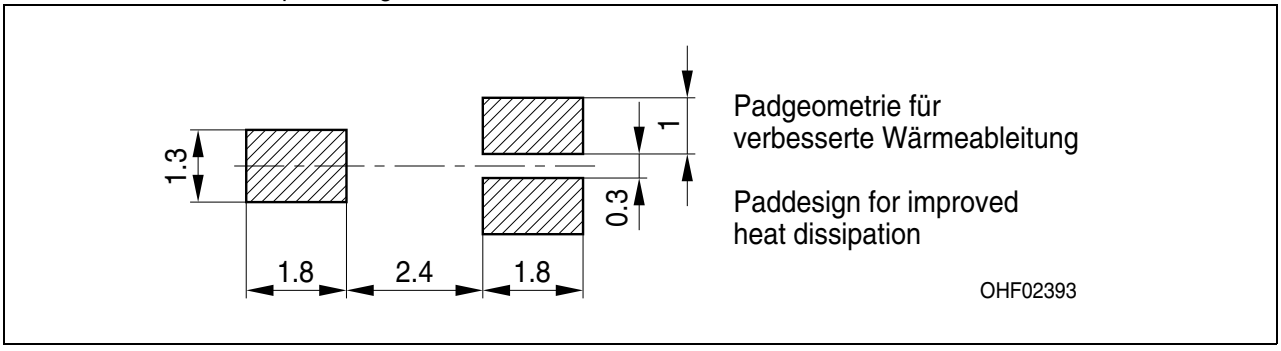
Maßzeichnung
Package Outlines



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

Anschlussbelegung **Pin configuration**	Pin 1 = Kollektor / collector Pin 2 = n.c. Pin 3 = Emitter / emitter

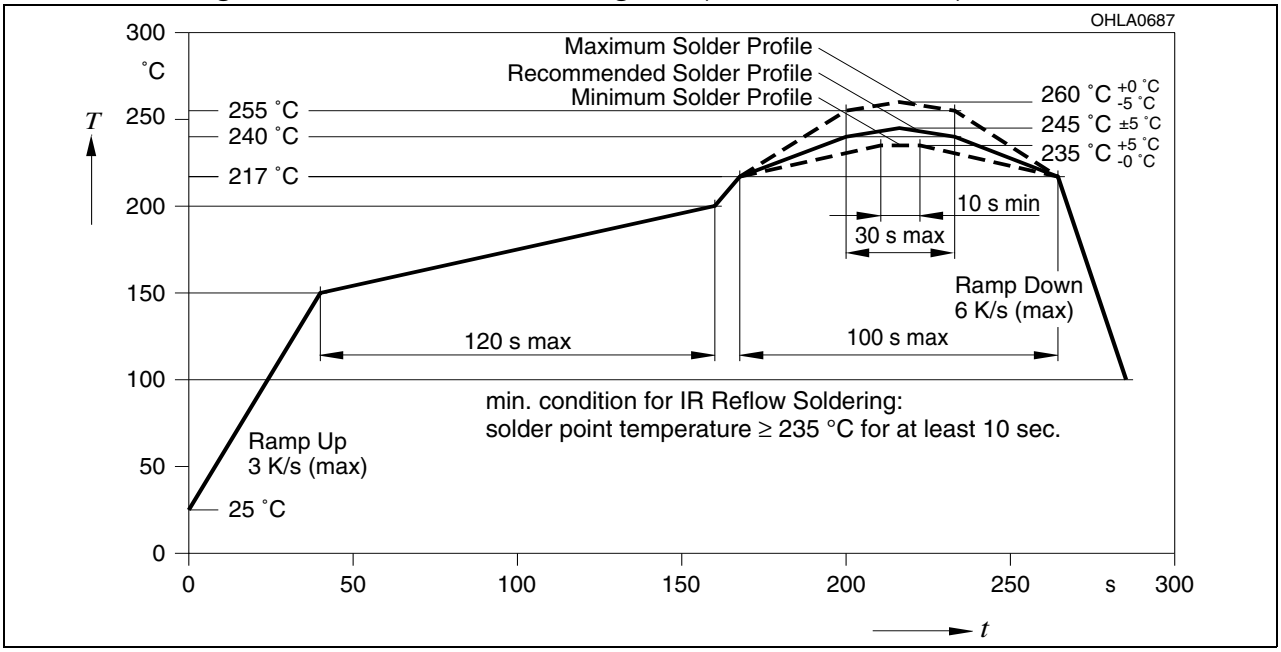
Empfohlenes Lötpaddesign
Recommended Solderpad Design



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

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)



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。

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

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 components [1] , may only be used in life-support devices or systems [2] with the express written approval of OSRAM OS.

[1] A critical component is a component usedin 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.