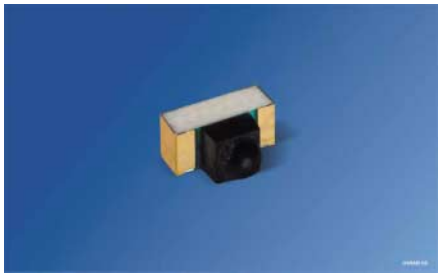
Phototransistor
Phototransistor
Lead (Pb) Free Product - RoHS Compliant

SFH 3015 FA



SFH 3015 FA

Vorläufige Daten / Preliminary Data

Wesentliche Merkmale

- Enger Empfangswinkel (±13°)
- Sidelooker mit geringer Bauhöhe (1,6 mm)
- Emitter im gleichen Gehäuse verfügbar: SFH 4015 und SFH 4045

Features

- Narrow angle (±13°)
- Low profile sidelooker (1,6 mm)
- Emitter in same package available: SFH 4015 and SFH 4045

Anwendungen

- Lichtschranken, Lichtvorhänge
- Sensorik
- Näherungssensor
- berührungsempfindliche Bildschirme

Applications

- Interrupters, Lightcurtains
- Sensors
- Proximity sensor
- Touchscreen

Typ **Type**	**Bestellnummer** **Ordering Code**	**Fotostrom** , E_e=0.1 mW/cm^2,λ=950 nm V_{CE} = 5 V **Photocurrent** Ipce (µA)
SFH 3015 FA	Q65110A9730	100...800

Grenzwerte
Maximum Ratings

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebstemperatur Operating temperature range	T_{op}	– 25 … + 85	°C
Lagertemperatur Storage temperature range	T_{stg}	– 40 … + 85	°C
Kollektor-Emitterspannung Collector-emitter voltage	V_{CE} V_{CE} (t < 2 min)	15 30	V
Kollektorstrom Collector current	I_C	15	mA
Kollektorspitzenstrom, $\tau < 10$ µs Collector surge current	I_{CS}	75	mA
Emitter-Kollektorspannung Emitter-collector voltage	V_{EC}	7	V

Kennwerte (T_A = 25 °C)
Characteristics

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\ max}$	870	nm
Spektraler Bereich der Fotoempfindlichkeit Spectral range of sensitivity, S = 10% of S_{max}	λ	770 … 1090	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	0.04	mm^2
Abmessungen des Chips Dimensions of chip	$L \times B$ $L \times W$	0.35 × 0.35	mm × mm
Halbwinkel Half angle	φ	± 13	Grad deg.
Kapazität, V_{CE} = 5 V, f = 1 MHz, E = 0 Capacitance	C_{CE}	1.3	pF
Dunkelstrom, V_{CE} = 10 V, E = 0 Dark current	I_{CEO}	2 (≤ 50)	nA
Anstiegszeit/Abfallzeit, λ = 950 nm, I_C = 1mA, V_{CC} = 5 V, R_L = 1 kΩ Rise and fall time	t_r, t_f	7	µs

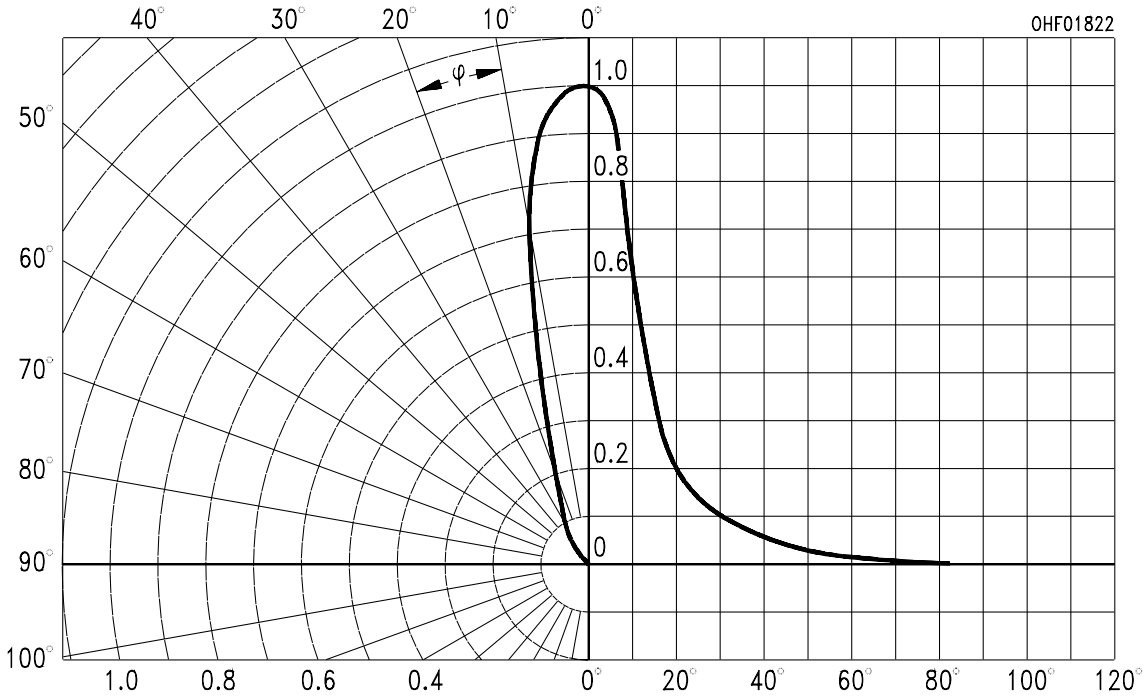
Die Fototransistoren werden nach ihrer Fotoempfindlichkeit gruppiert und mit arabischen Ziffern gekennzeichnet.
The phototransistors are grouped according to their spectral sensitivity and distinguished by arabian figures.

Bezeichnung Parameter	Symbol Symbol	Wert Value				Einheit Unit
		-1	-2	-3	-4	
Fotostrom, V_{CE} = 5 V, λ = 950 nm, E_e = 0.1 mW/cm² Photocurrent	I_{PCE}	100 … 200	160 … 320	250 … 500	400 … 800	µA
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	170	mV

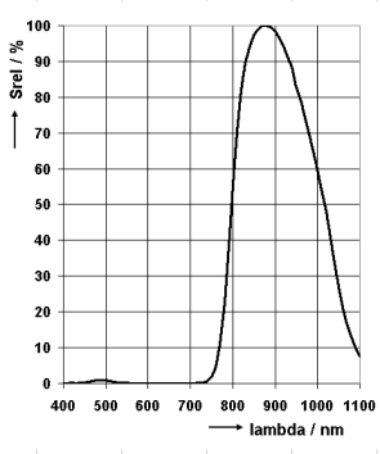
[1] I_{PCEmin} ist der minimale Fotostrom der jeweiligen Gruppe.

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

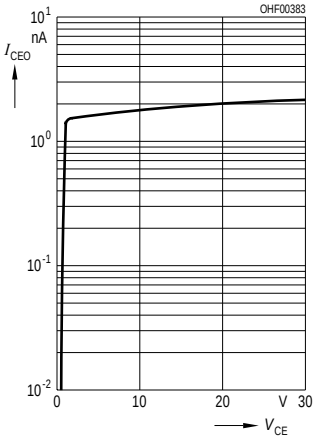
Directional Characteristics $S_{rel} = f(\varphi)$



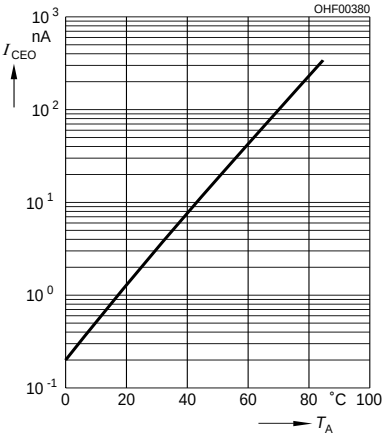
Rel. Spectral Sensitivity,
$S_{rel} = f(\lambda)$



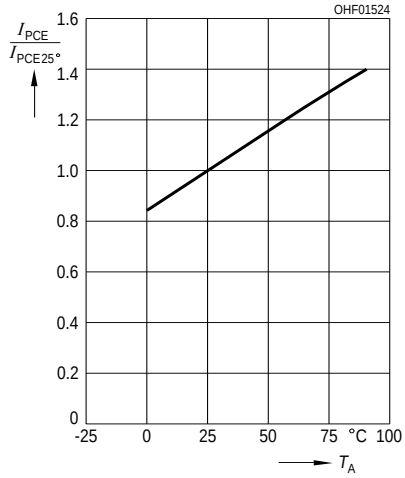
Dark Current
$I_{CEO} = f(V_{CE})$, $E = 0$



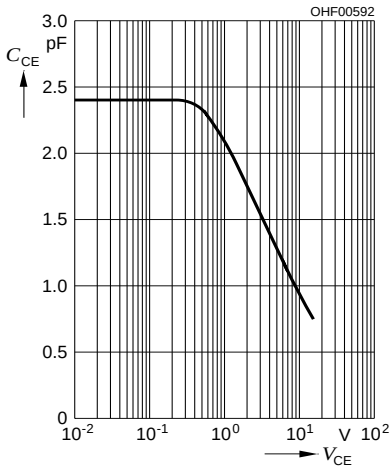
Dark Current
$I_{CEO} = f(T_A)$, V_{CE} = 10 V, $E = 0$



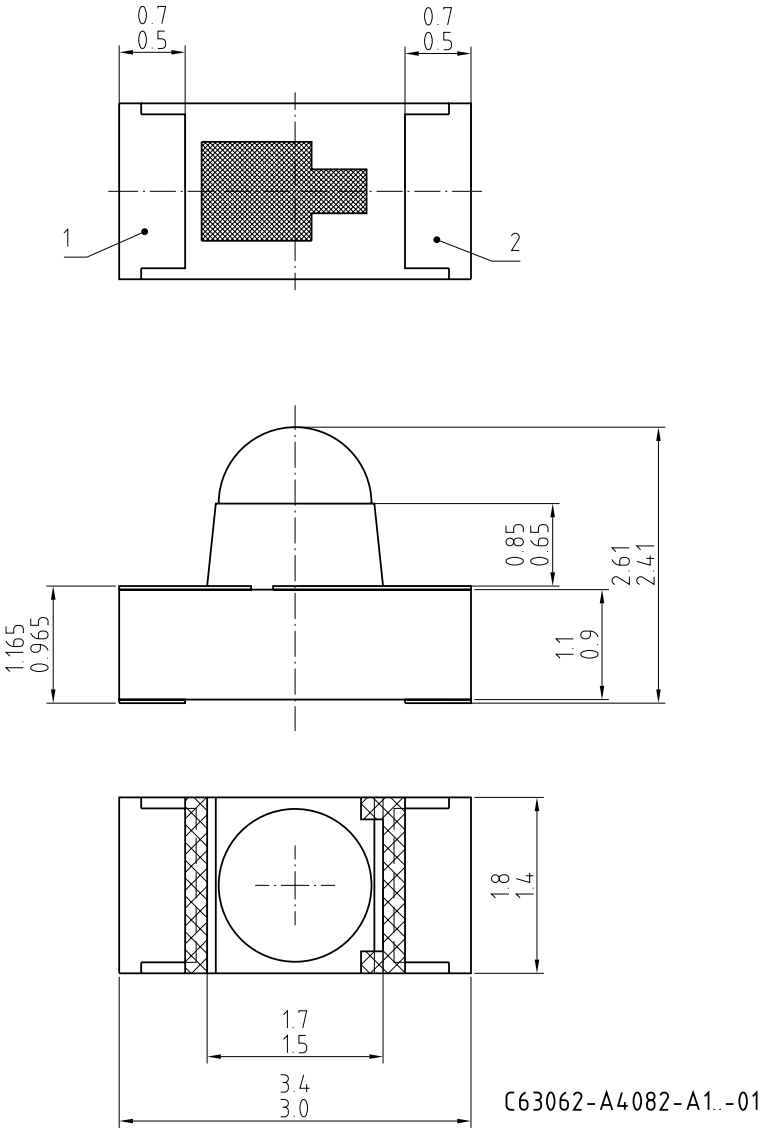
Photocurrent $I_{PCE} = f(T_A)$,
V_{CE} = 5 V, normalized to 25 °C



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



Maßzeichnung
Package Outlines

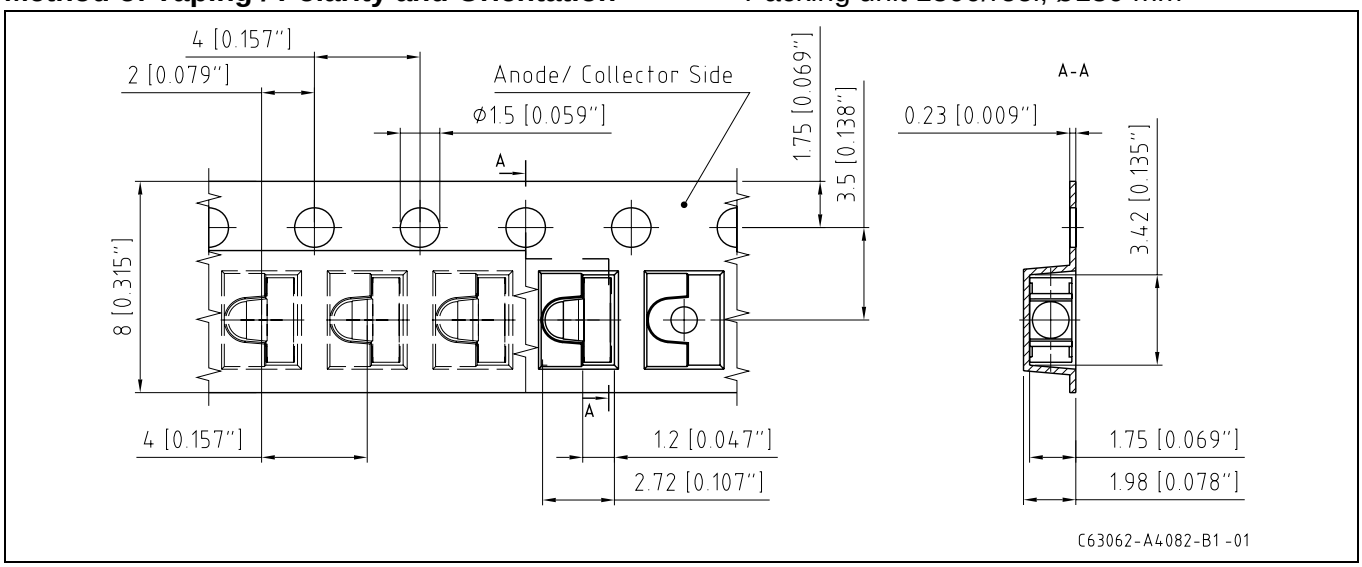


Maße in mm / Dimensions in mm.

Gehäuse / Package	Sidelooker mit Linse / Sidelooker with lens
Anschlussbelegung pin configuration	1 = Emitter / emitter 2 = Kollektor / collector
Farbe Color	schwarz black

Gurtung / Polarität und Lage Verpackungseinheit 1500/Rolle, ø180 mm

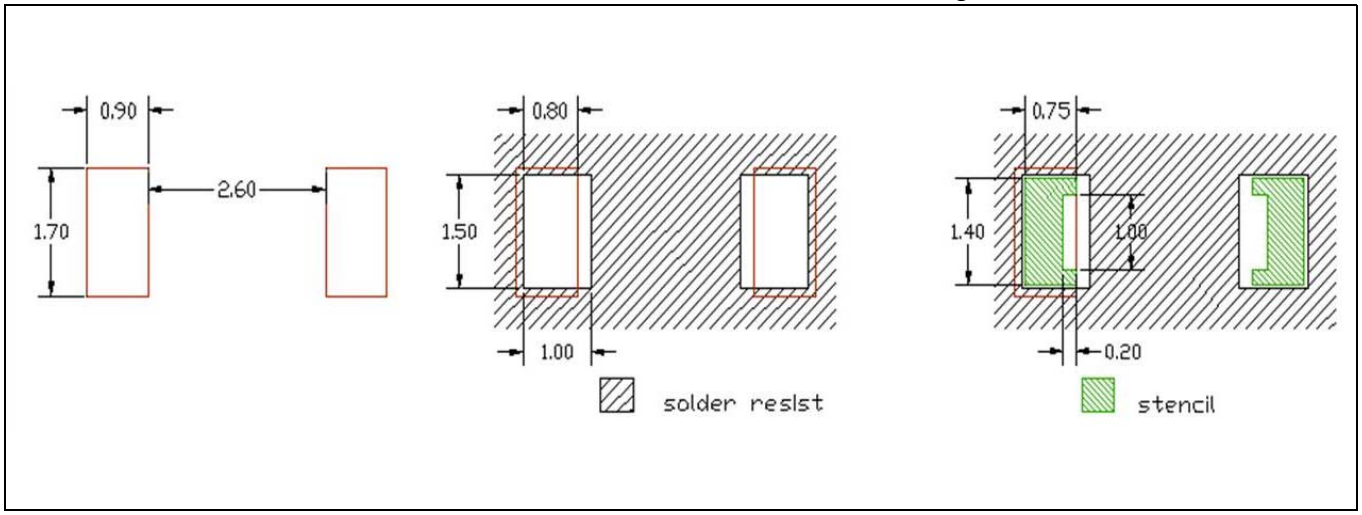
Method of Taping / Polarity and Orientation Packing unit 1500/reel, ø180 mm



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

Empfohlenes Lötpaddesign Reflow Löten

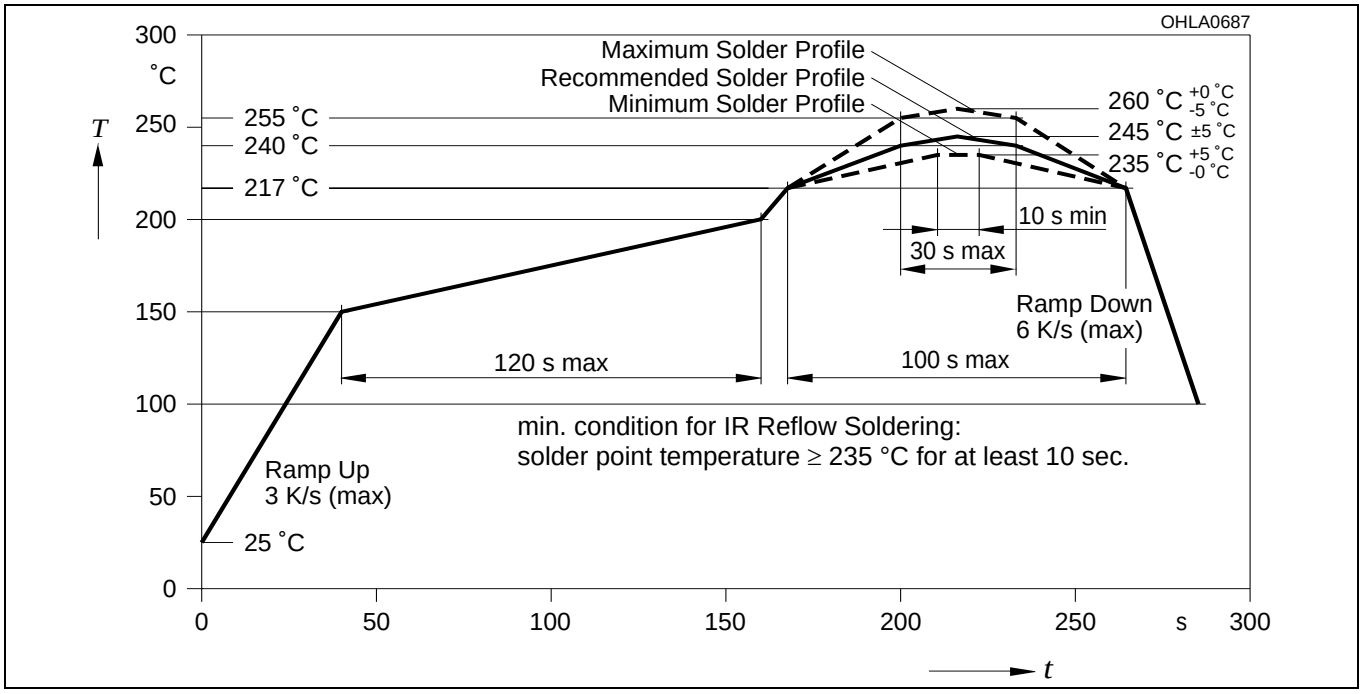
Recommended Solder Pad Reflow Soldering



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 3
Preconditioning acc. to JEDEC Level 3
(nach J-STD-020C)
(acc. to J-STD-020C)



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shall not be considered as assured characteristics.
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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.

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[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.