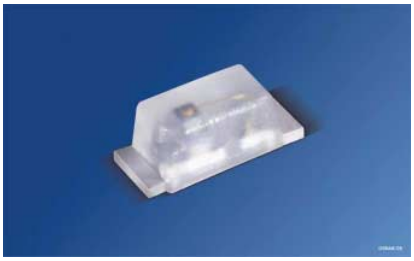
NPN-Silizium-Fototransistor
Silicon NPN Phototransistor
Lead (Pb) Free Product - RoHS Compliant

SFH 3010



Nicht für Neuentwicklungen im Automobilbereich /
not for new designs in automotive applications

Vorläufige Daten / Preliminary Data

Wesentliche Merkmale

- Sehr kleines SMT-Gehäuse:
  (LxBxH) 1,7 mm x 0,8 mm x 0,65 mm
- Speziell geeignet für Anwendungen im Bereich von 420 nm bis 1100 nm
- großer Empfangswinkel ± 80°
- Gegurtet lieferbar

Features

- Very small SMT package:
  (LxWxH) 1.7 mm x 0.8 mm x 0.65 mm
- Especially suitable for applications from 420 nm to 1100 nm
- large viewing angle ± 80°
- Available on tape and reel

Anwendungen

- Miniaturlichtschranken
- Sensorik (z.B. Handy)
- „Messen/Steuern/Regeln“

Applications

- Miniature photointerrupters
- Sensor technology (eg mobile phone)
- For control and drive circuits

Typ **Type**	**Bestellnummer** **Ordering Code**	**Fotostrom** , (E_e=0,5mW/cm^2, λ=950nm V_{CE} = 5 V) **Photocurrent** Ipce (µA)
SFH 3010	Q65110A6458	> 25.0

Opto Semiconductors OSRAM

Grenzwerte
Maximum Ratings

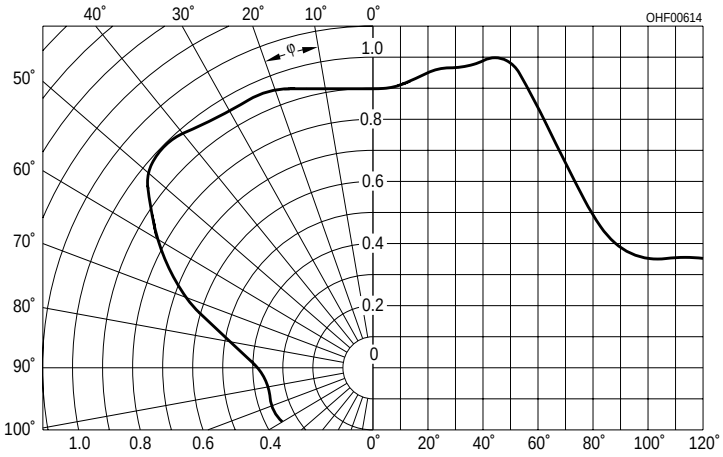
Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Betriebs- und Lagertemperatur Operating and storage temperature range	T_{op}; T_{stg}	– 40 … + 100	°C
Kollektor-Emitterspannung Collector-emitter voltage	V_{CE} V_{CE} (t < 2 min)	15 30	V
Kollektorstrom Collector 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
Verlustleistung, T_A = 25 °C Total power dissipation	P_{tot}	130	mW
Wärmewiderstand Sperrschicht - Umgebung bei Montage auf FR4 Platine, Padgröße je 5 mm² Thermal resistance junction - ambient mounted on PC-board (FR4), padsize 5 mm² each	R_{thJA}	450	K/W
Wärmewiderstand Sperrschicht - Lötstelle bei Montage auf Metall-Block Thermal resistance junction - soldering point, mounted on metal block	R_{thJS}	250	K/W

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

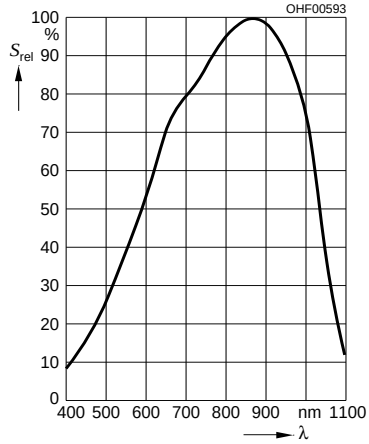
Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\ max}$	860	nm
Spektraler Bereich der Fotoempfindlichkeit S = 10% von S_{max} Spectral range of sensitivity S = 10% of S_{max}	λ	420 … 1100	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	0.04	mm^2
Abmessungen der Chipfläche Dimensions of chip area	$L \times B$ $L \times W$	0.35 × 0.35	mm × mm
Halbwinkel Half angle	φ	± 80	Grad deg.
Kapazität Capacitance V_{CE} = 5 V, f = 1 MHz, E = 0	C_{CE}	1.3	pF
Dunkelstrom Dark current V_{CE} = 20 V, E = 0	I_{CEO}	2 (≤ 50)	nA
Fotostrom Photocurrent E_e = 0.5 mW/cm², V_{CE} = 5 V	I_{PCE}	>25.0	µA
Anstiegszeit/Abfallzeit Rise and fall time I_C = 1 mA, V_{CC} = 5 V, R_L = 1 kΩ	t_r, t_f	7	µs
Kollektrr-Emitter-Sättigungsspannung Collector-emitter saturation voltage I_C = 10µA E_e = 0.5 mW/cm², λ = 950 nm	V_{CEsat}	140	mV

Directional Characteristics

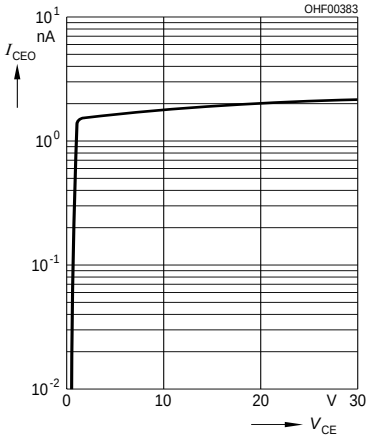
$S_{rel} = f(\varphi)$



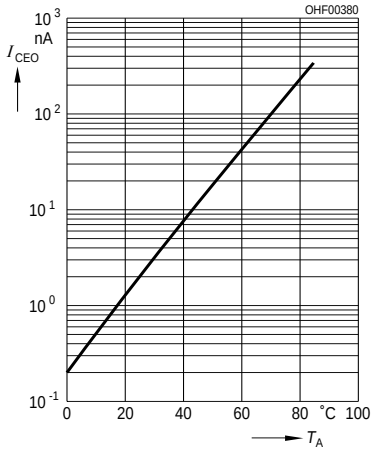
Rel. Spectral Sensitivity,
$S_{rel} = f(\lambda)$, axial direction



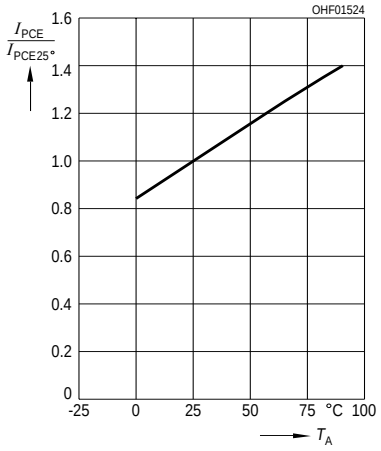
Dark Current
$I_{CEO} = f(V_{CE})$, $E = 0$



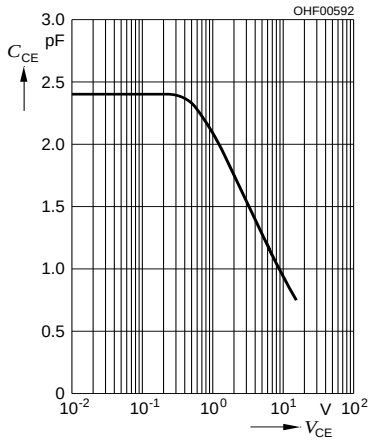
Dark Current
$I_{CEO} = f(T_A)$, V_{CE} = 20 V, $E = 0$



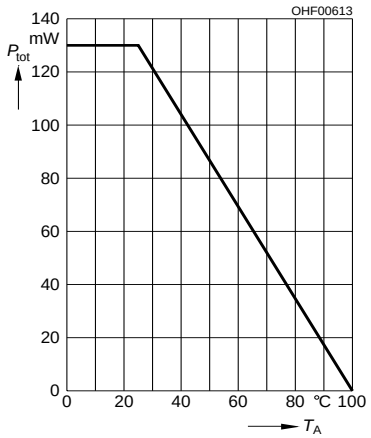
Photocurrent $I_{PCE} = f(T_A)$,
V_{CE} = 5 V, normalized to 25 °C



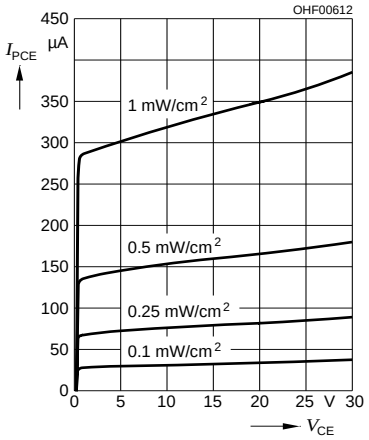
Collector-Emitter Capacitance
$C_{CE} = f(V_{CE})$, f = 1 MHz



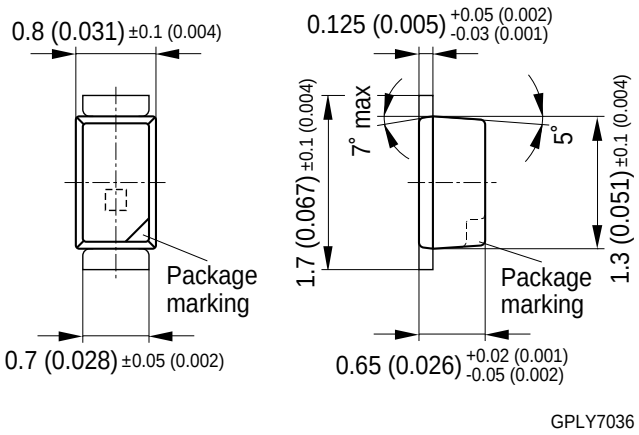
Total Power Dissipation
$P_{tot} = f(T_A)$



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



Maßzeichnung
Package Outlines



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

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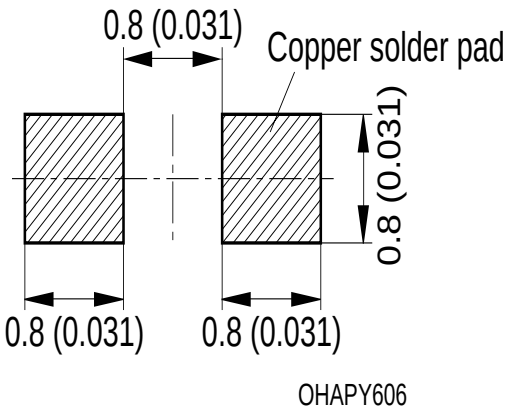
Gehäuse / Package	Epoxydharz, diffus / Epoxy, diffuse
Farbe / Colour	Farblos / colourless
Gehäusemarkierung/ Package marking	Kathode / Cathode

Empfohlenes Lötpaddesign
Recommended Solder Pad

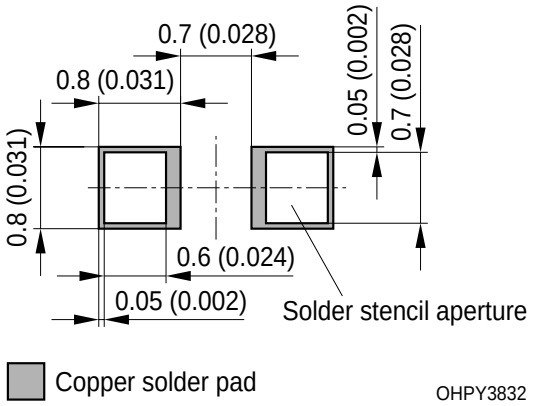
Reflow Löten
Reflow Soldering



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

Alternatives Lötpaddesign
Alternative Solder Pad

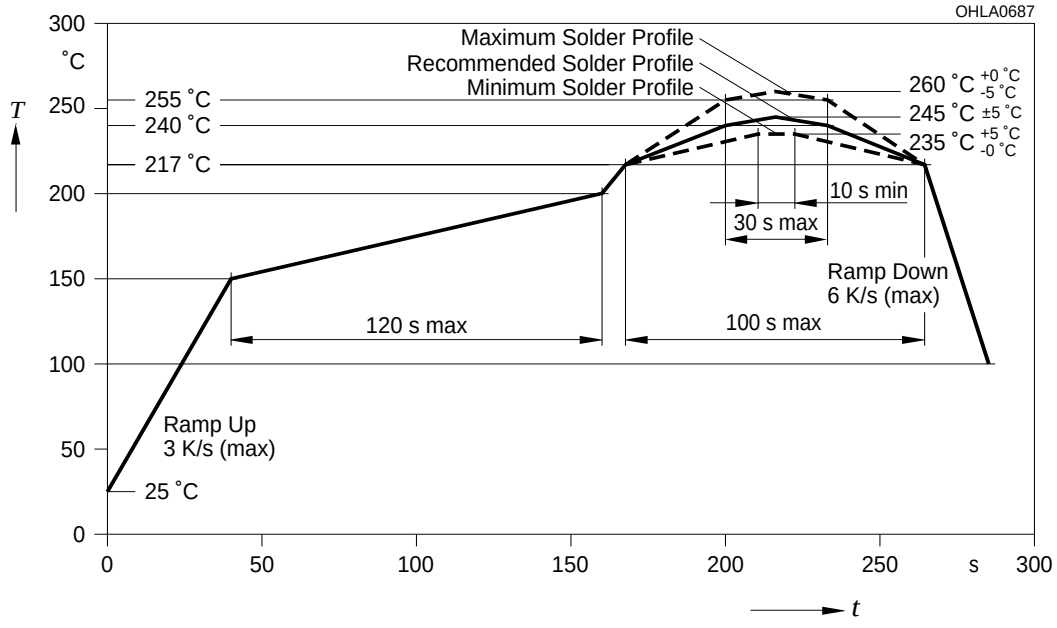
Reflow Löten
Reflow Soldering



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 2
Preconditioning acc. to JEDEC Level 2
(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。

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