

NPN-Silizium-Fototransistor

Silicon NPN Phototransistor

查询"SFH 3010"供应商

SFH 3010



Wesentliche Merkmale

- Sehr kleines SMT-Gehäuse (SCD 80): (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 $\pm 80^\circ$
- geeignet für IR-Reflow-Löten (JEDEC level 4)
- Nur gegurtet lieferbar

Anwendungen

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

Features

- Very small SMT package (SCD 80): (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 $\pm 80^\circ$
- suitable for IR reflow soldering (JEDEC level 4)
- Available only on tape and reel

Applications

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

| Typ Type | Bestellnummer Ordering Code |
|-------------|--------------------------------|
| SFH 3010 | Q62702-P5555 |

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} $V_{CE} (t < 2 \text{ min})$ | 15 30 | V |
| Kollektorstrom Collector current | I_C | 15 | mA |
| Kollektorspitzenstrom, $\tau < 10 \mu\text{s}$ Collector surge current | I_{CS} | 75 | mA |
| Emitter-Kollektorspannung Emitter-collector voltage | V_{EC} | 7 | V |
| Verlustleistung, $T_A = 25 \text{ °C}$ Total power dissipation | P_{tot} | 130 | mW |
| Wärmewiderstand Sperrschicht - Umgebung bei Montage auf FR4 Platine, Padgröße je 16 mm^2 Thermal resistance junction - ambient mounted on PC-board (FR4), padsizes 16 mm^2 each | R_{thJA} | 585 | K/W |

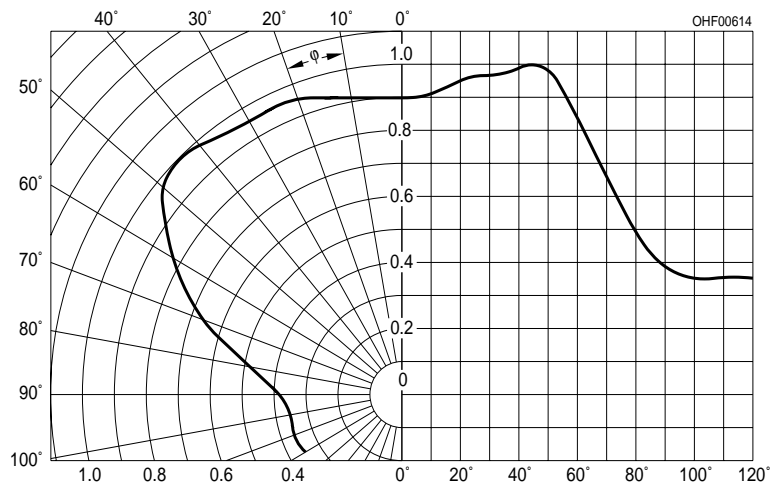
Kennwerte ($T_A = 25\text{ °C}$, $\lambda = 950\text{ nm}$)

Characteristics

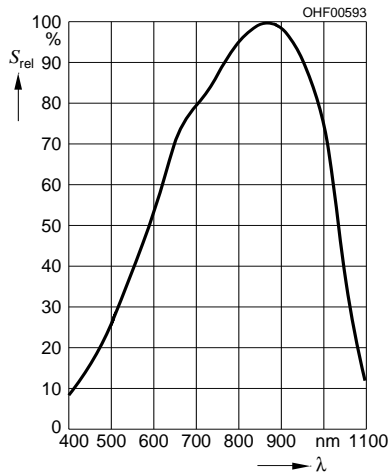
| Bezeichnung Parameter | Symbol Symbol | Wert Value | Einheit Unit |
|--|------------------------------|--------------------|-----------------|
| Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity | $\lambda_{S\text{ max}}$ | 860 | nm |
| Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von S_{max} Spectral range of sensitivity $S = 10\%$ of S_{max} | λ | 420 ... 1100 | nm |
| Bestrahlungsempfindliche Fläche Radiant sensitive area | A | 0.02 | mm ² |
| Abmessungen der Chipfläche Dimensions of chip area | $L \times B$ $L \times W$ | 0.38×0.38 | mm × mm |
| Halbwinkel Half angle | φ | ± 80 | Grad deg. |
| Kapazität Capacitance $V_{\text{CE}} = 5\text{ V}$, $f = 1\text{ MHz}$, $E = 0$ | C_{CE} | 1.3 | pF |
| Dunkelstrom Dark current $V_{\text{CE}} = 20\text{ V}$, $E = 0$ | I_{CEO} | 2 (≤ 50) | nA |
| Fotostrom Photocurrent $E_e = 0.5\text{ mW/cm}^2$, $V_{\text{CE}} = 5\text{ V}$ | I_{PCE} | >25 | 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 |
| Kollektrr-Emitter-Sättigungsspannung Collector-emitter saturation voltage $I_{\text{C}} = 10\mu\text{A}$ $E_e = 0.5\text{ mW/cm}^2$, $\lambda = 950\text{ nm}$ | V_{CEsat} | 140 | mV |

Directional Characteristics

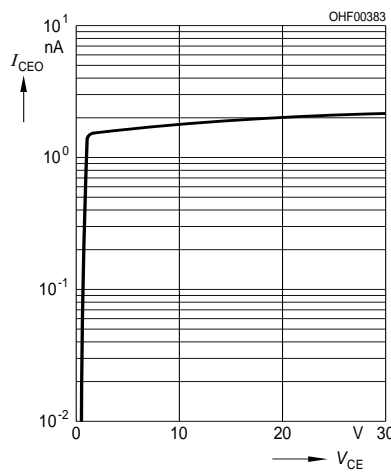
$$S_{\text{rel}} = f(\varphi)$$



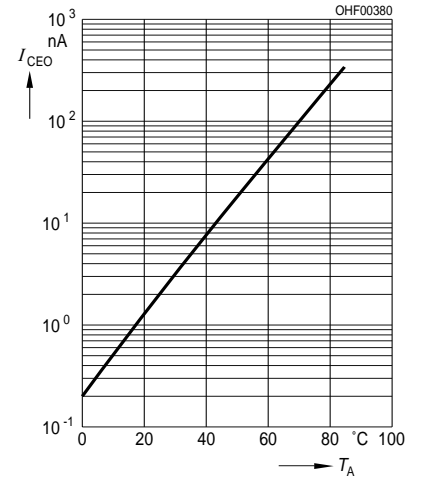
Rel. Spectral Sensitivity,
 $S_{rel} = f(\lambda)$, axial direction



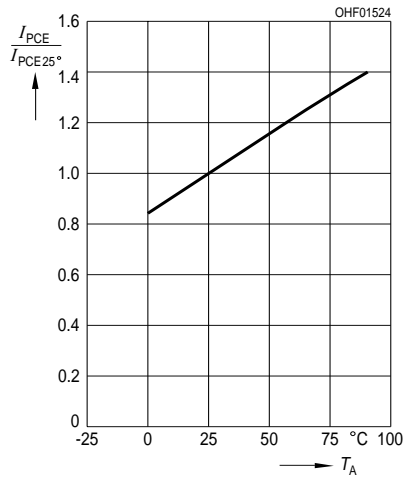
Dark Current
 $I_{CEO} = f(V_{CE}), E = (0)$



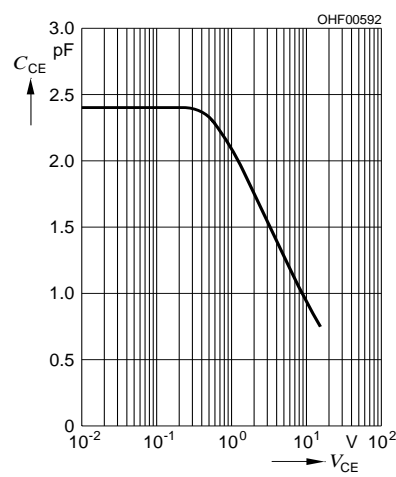
$I_{CEO} = f(T_A), V_{CE} = 20 V, E = (0)$



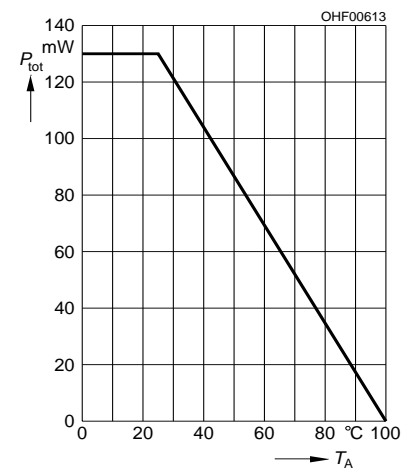
Photocurrent $I_{PCE} = f(T_A)$,
 $V_{CE} = 5 V$, normalized to 25 °C



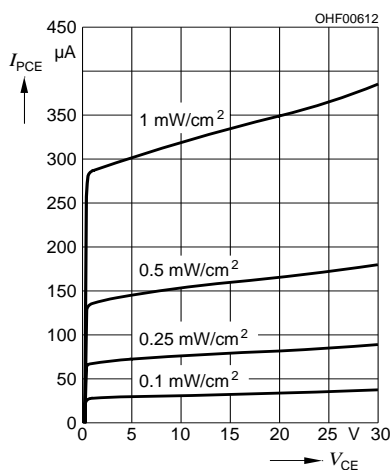
Collector-Emitter Capacitance
 $C_{CE} = f(V_{CE}), f = 1 MHz$



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

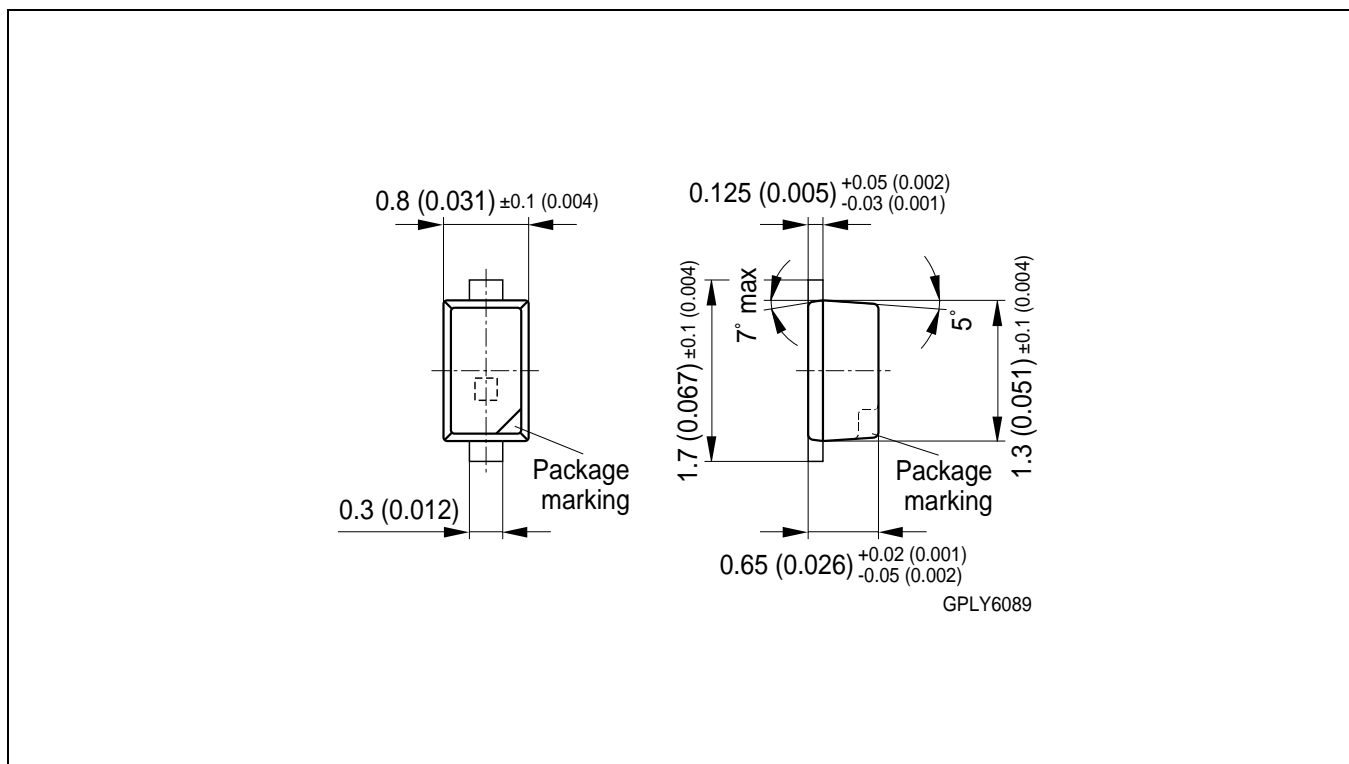


Photocurrent
 $I_{PCE} = f(V_{CE}), E_e = \text{Parameter}$



Dark Current

Maßzeichnung Package Outlines



Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

| | |
|------------------------|----------------------------|
| Package | Epoxy, SmartLED (SCD 80) |
| Colour | colourless, light diffused |
| Package marking | Collector |

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