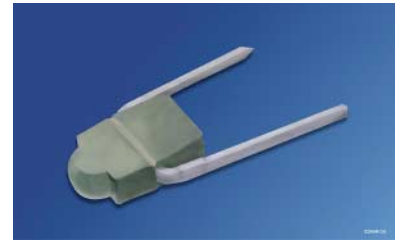


Mini-NPN-Silizium-Fototransistor
Mini-Silicon NPN Phototransistor
Lead (Pb) Free Product - RoHS Compliant

SFH 305



Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 460 nm bis 1060 nm
- Hohe Linearität
- Mini-Bauform
- Gruppierbar lieferbar

Features

- Especially suitable for applications from 460 nm to 1060 nm
- High linearity
- Mini-package
- Available in groups

Anwendungen

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

Applications

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

Typ Type	Bestellnummer Ordering Code	Fotostrom , $E_e = 0.5 \text{ mW/cm}^2$, $\lambda = 950 \text{ nm}$, $V_{CE} = 5 \text{ V}$ Photocurrent $I_{PCE} \text{ (mA)}$
SFH 305	Q62702P0836	0.25...1.25
SFH 305-2/3	Q62702P3589	0.25...0.8

Grenzwerte
Maximum Ratings

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebs- und Lagertemperatur Operating and storage temperature range	$T_{op}; T_{stg}$	- 40 ...+ 80	°C
Kollektor-Emitterspannung Collector-emitter voltage	V_{CE}	35	V
Kollektorstrom Collector current	I_C	50	mA
Kollektorspitzenstrom, $\tau < 10 \mu s$ Collector surge current	I_{CS}	200	mA
Verlustleistung, $T_A = 25 \text{ }^\circ\text{C}$ Power dissipation	P_{tot}	70	mW
Wärmewiderstand Thermal resistance	R_{thJA}	950	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	$\lambda_{S_{\max}}$	850	nm
Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von S_{\max} Spectral range of sensitivity $S = 10\%$ of S_{\max}	λ	450 ...1100	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	0.11	mm ²
Abmessungen der Chipfläche Dimensions of chip area	$L \times B$ $L \times W$	0.5×0.5	mm × mm
Halbwinkel Half angle	φ	± 16	Grad deg.
Kapazität Capacitance $V_{CE} = 0\text{ V}$, $f = 1\text{ MHz}$, $E = 0$	C_{CE}	7.5	pF
Dunkelstrom Dark current $V_{CE} = 20\text{ V}$, $E = 0$	I_{CEO}	1 (≤ 50)	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.

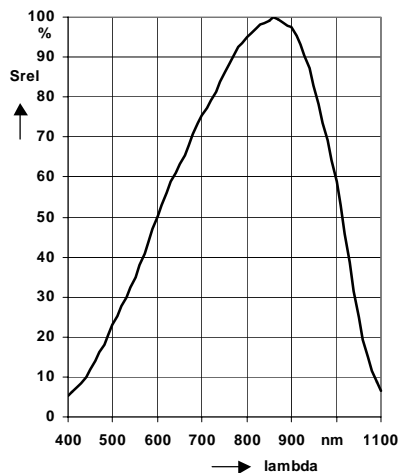
Bezeichnung Parameter	Symbol Symbol	Wert Value			Einheit Unit
		-2	-3	-4	
Fotostrom Photocurrent $E_e = 0.5 \text{ mW/cm}^2$, $\lambda = 950 \text{ nm}^2$, $V_{CE} = 5 \text{ V}$ $E_v = 1000 \text{ lx}$, Normlicht/standard light A, $V_{CE} = 5 \text{ V}$	I_{PCE} I_{PCE}	0.25..0.5 1.2	0.4..0.8 1.9	0.63..1.25 3.0	mA mA
Anstiegszeit/Abfallzeit Rise and fall time $I_C = 1 \text{ mA}$, $V_{CC} = 5 \text{ V}$, $R_L = 1 \text{ k}\Omega$	t_r , t_f	5.5	6	8	μs
Kollektor-Emitter-Sättigungsspannung Collector-emitter saturation voltage $I_C = I_{PCEmin}^{1)} \times 0.3$, $E_e = 0.5 \text{ mW/cm}^2$	V_{CEsat}	150	150	150	mV

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

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

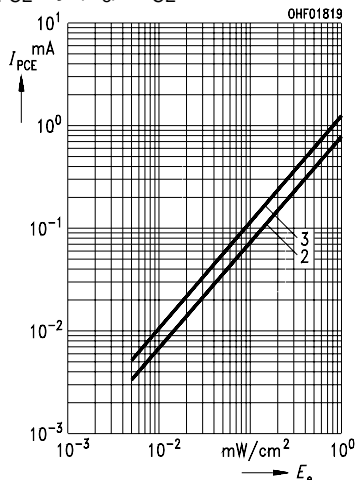
Relative Spectral Sensitivity

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



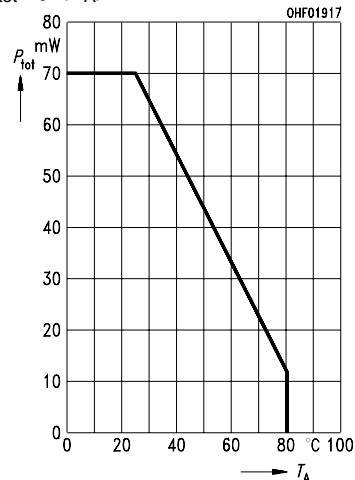
Photocurrent

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



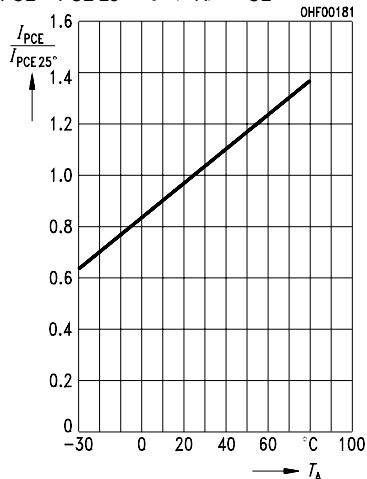
Total Power Dissipation

$P_{tot} = f(T_A)$



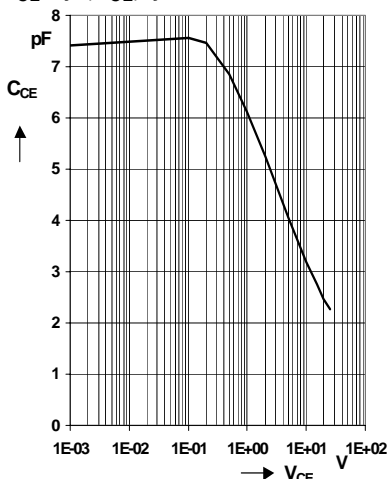
Photocurrent

$I_{PCE} / I_{PCE 25^\circ} = f(T_A), V_{CE} = 5 \text{ V}$



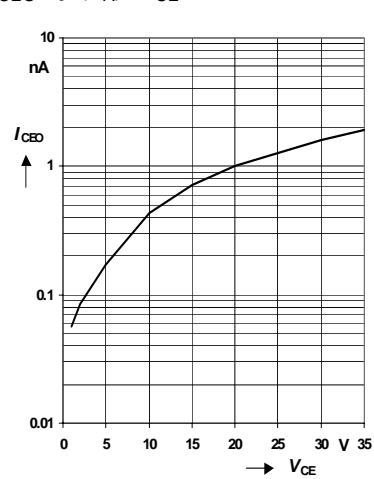
Collector-Emitter Capacitance

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



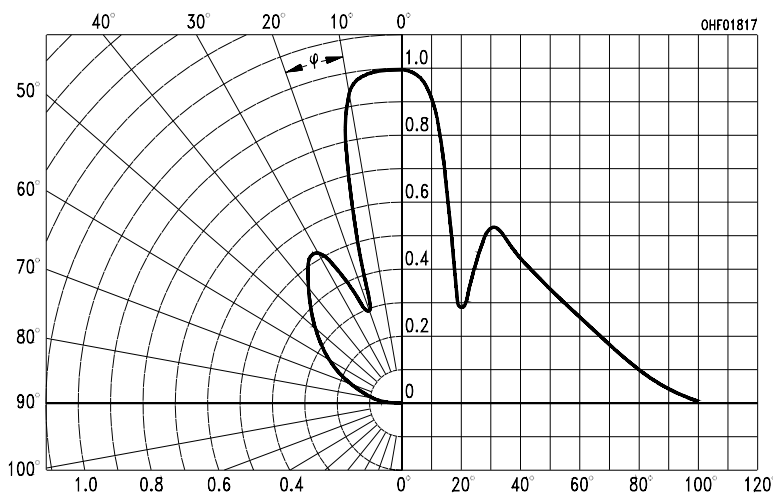
Dark Current

$I_{CEO} = f(T_A), V_{CE} = 25 \text{ V}, E = 0$



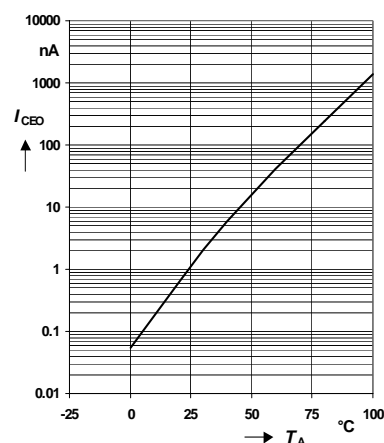
Directional Characteristics

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

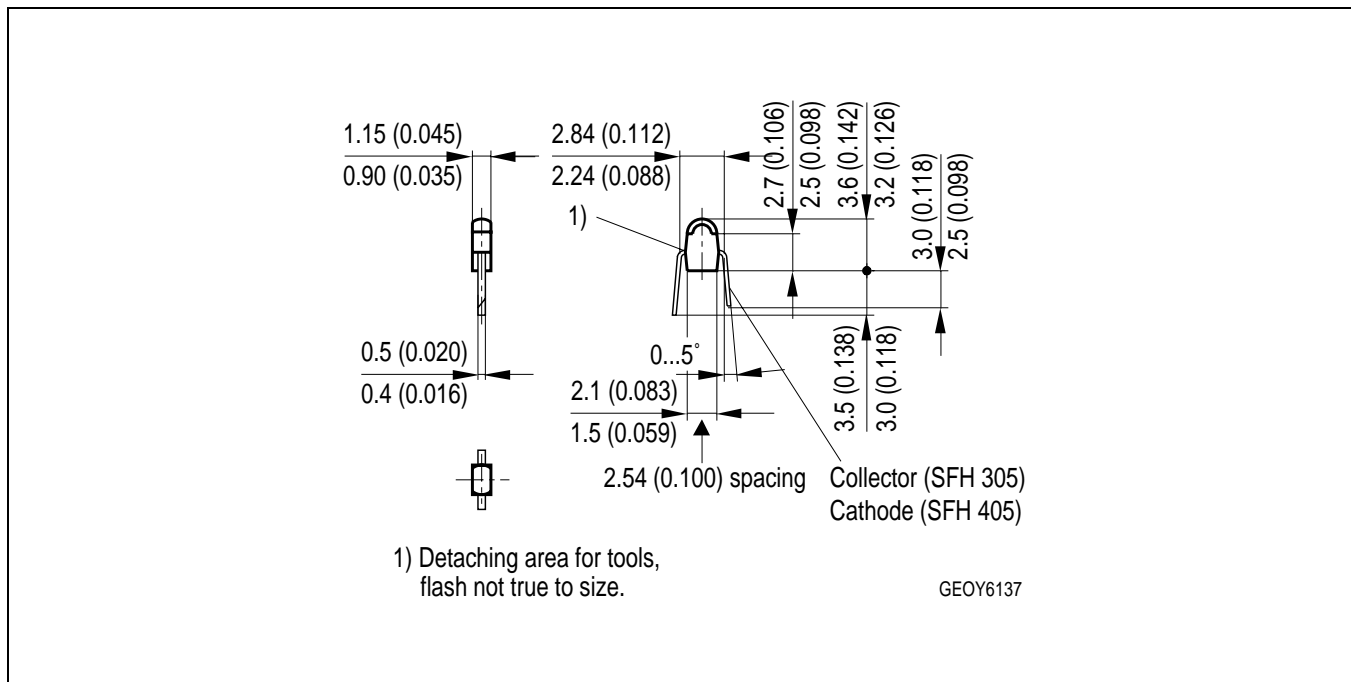


Dark Current

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



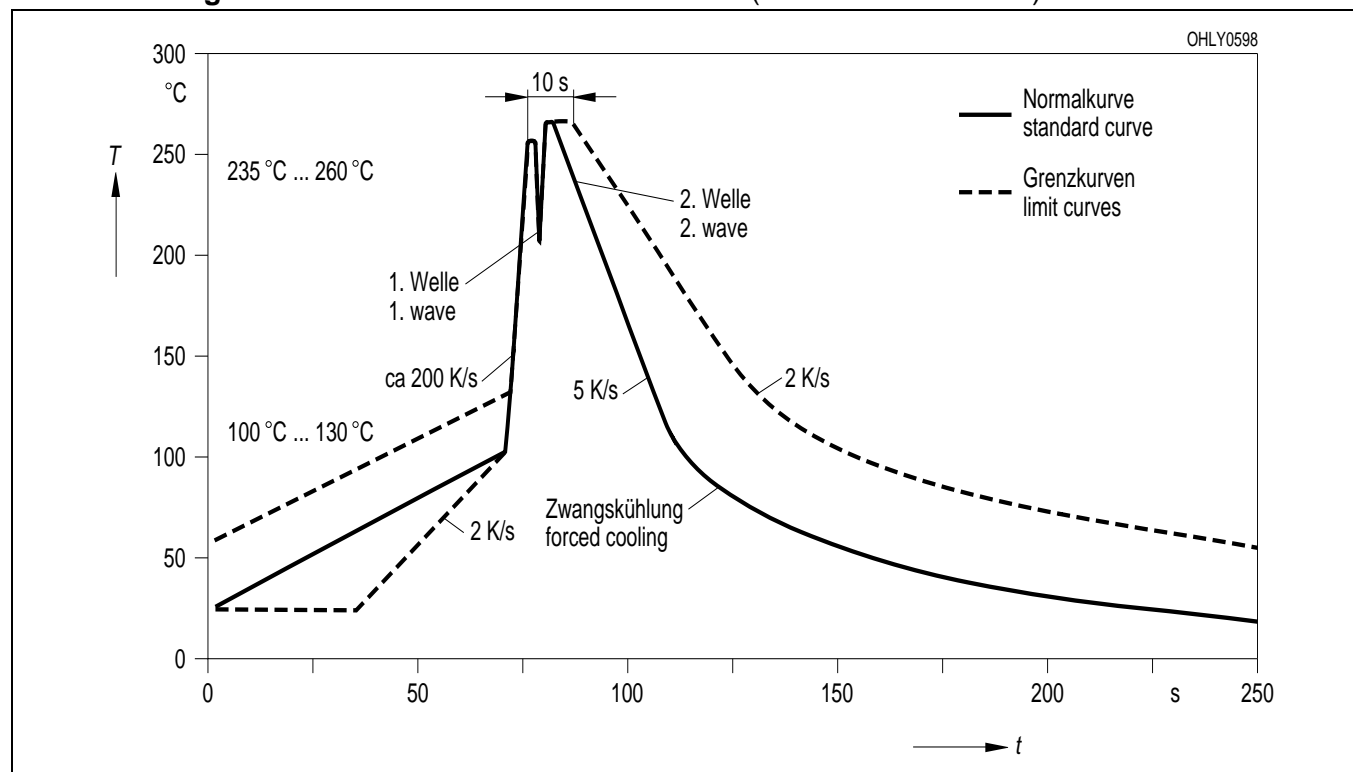
Maßzeichnung
Package Outlines



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

Lötbedingungen
Soldering Conditions
Wellenlöten (TTW)
TTW Soldering

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



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