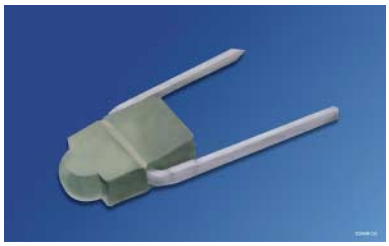
Mini-NPN-Silizium-Fototransistor
Mini-Silicon NPN Phototransistor
Lead (Pb) Free Product - RoHS Compliant

SFH 305



Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 460 nm bis 1060 nm
- Hohe Linearität
- Mini-Bauform
- Gruppiert 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 mW/cm^2, λ = 950 nm, V_{CE} = 5 V **Photocurrent** I_{PCE} (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, $\tau < 10$ µs Collector surge current	I_{CS}	200	mA
Verlustleistung, $T_A = 25$ °C Power dissipation	P_{tot}	70	mW
Wärmewiderstand Thermal resistance	R_{thJA}	950	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	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 V, f = 1 MHz, E = 0	C_{CE}	7.5	pF
Dunkelstrom Dark current V_{CE} = 20 V, E = 0	I_{CEO}	1 (≤50)	nA

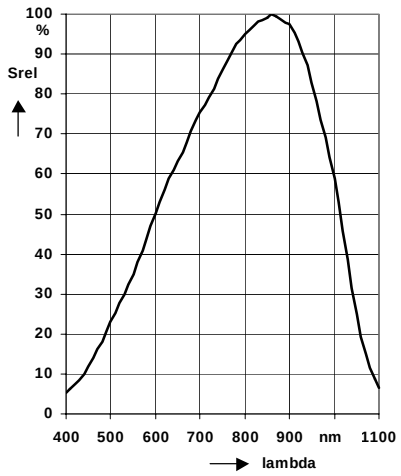
Die Fototransistoren werden nach ihrer Fotoempfindlichkeit gruppiert und mit arabischen Ziffern gekennzeichnet.
The phototransistors are grouped according to their spectral sensitivity and distinguished by arabian figures.

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**			**Einheit** **Unit**
		-2	**-3**	**-4**	
Fotostrom Photocurrent E_e= 0.5 mW/cm^2, λ = 950 nm^2, V_{CE} = 5 V E_v = 1000 lx, Normlicht/standard light A, V_{CE} = 5 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 mA, V_{CC} = 5 V, R_L = 1 kΩ	t_r, t_f	5.5	6	8	µs
Kollektor-Emitter-Sättigungsspannung Collector-emitter saturation voltage $I_C = I_{PCEmin}$[1)] × 0.3, E_e = 0.5 mW/cm^2	V_{CEsat}	150	150	150	mV

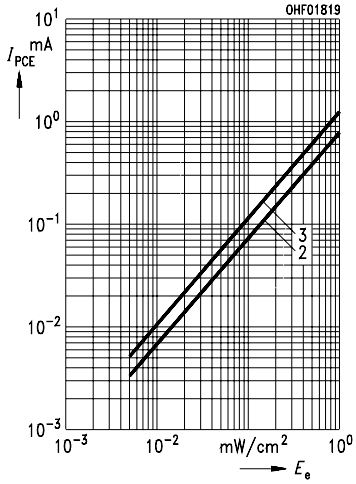
1) I_{PCEmin} ist der minimale Fotostrom der jeweiligen Gruppe.

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

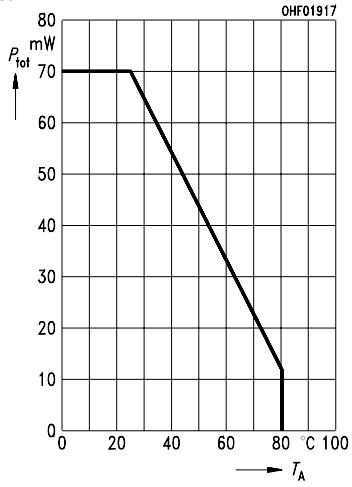
Relative Spectral Sensitivity
$S_{rel} = f(\lambda)$



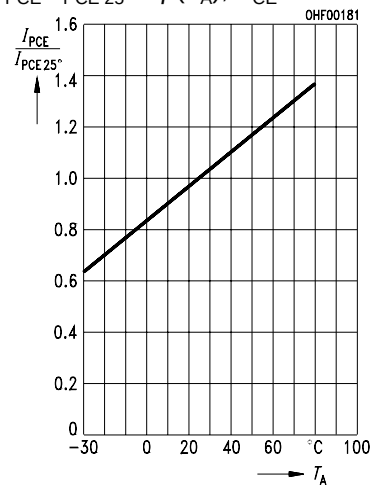
Photocurrent
$I_{PCE} = f(E_e)$, V_{CE} = 5 V



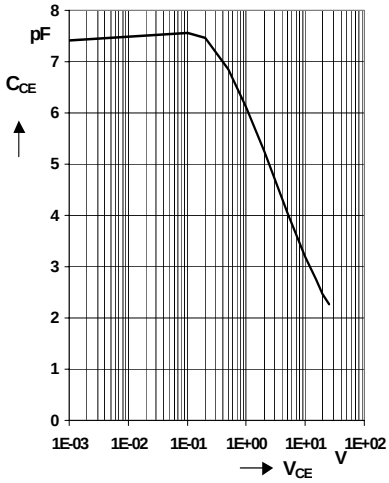
Total Power Dissipation
$P_{tot} = f(T_A)$



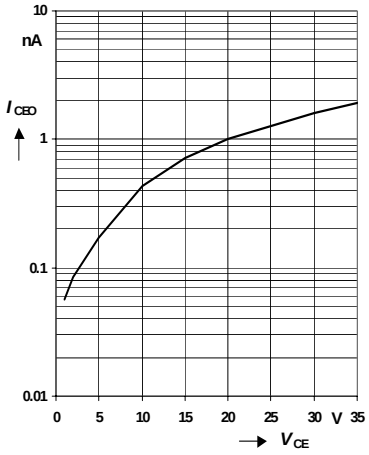
Photocurrent
$I_{PCE} / I_{PCE\ 25°} = f(T_A)$, V_{CE} = 5 V



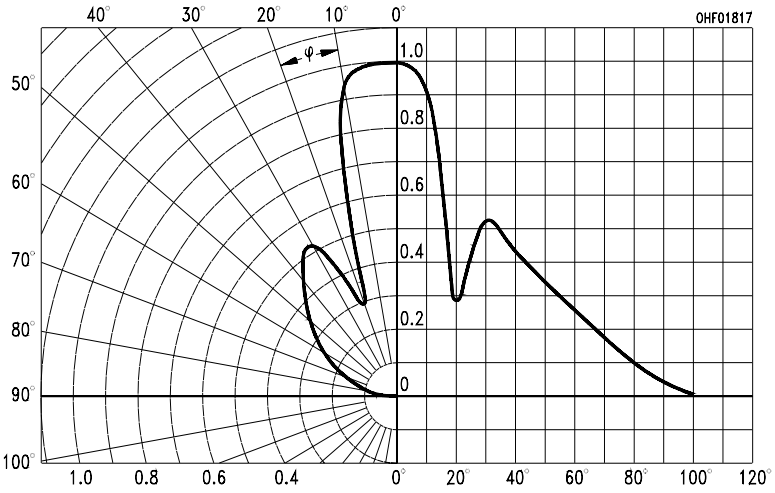
Collector-Emitter Capacitance
$C_{CE} = f(V_{CE})$, f = 1 MHz, E = 0



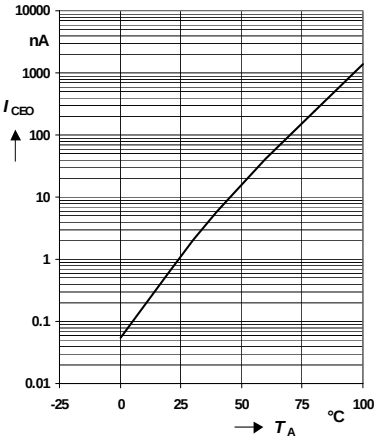
Dark Current
$I_{CEO} = f(T_A)$, V_{CE} = 25 V, E = 0



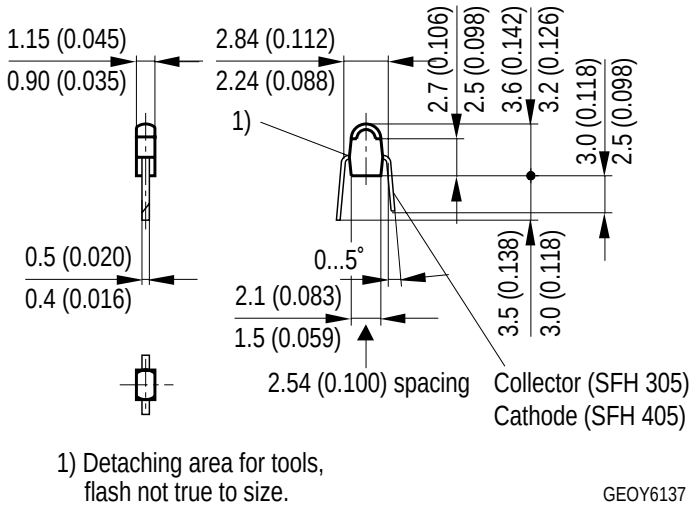
Directional Characteristics
$S_{rel} = f(\varphi)$



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

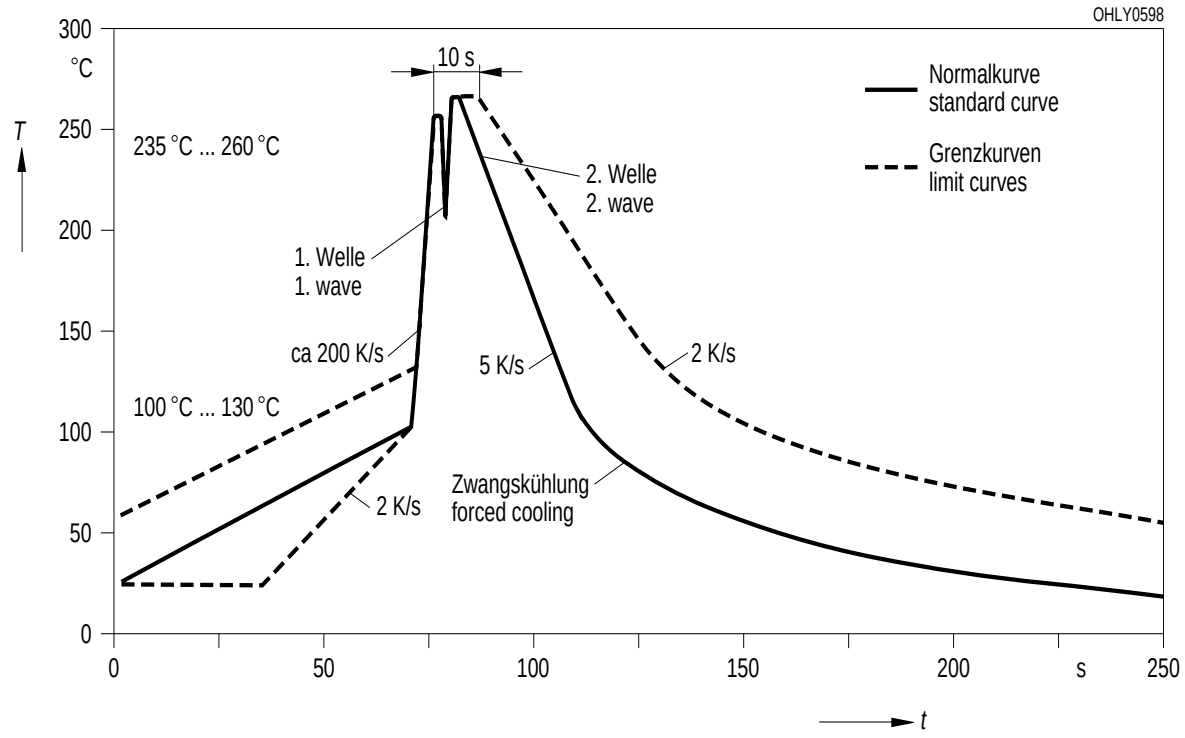


Maßzeichnung
Package Outlines



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

Lötbedingungen
Soldering Conditions
Wellenlöten (TTW) (nach CECC 00802)
TTW Soldering (acc. to CECC 00802)



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