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

SFH 313
SFH 313 FA

SFH 313

SFH 313 FA

Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 460 nm bis 1080 nm (SFH 313) und bei 880 nm (SFH 313 FA)
- Hohe Linearität
- 5 mm-Plastikbauform

Features

- Especially suitable for applications from 460 nm to 1080 nm (SFH 313) and of 880 nm (SFH 313 FA)
- High linearity
- 5 mm plastic package

Anwendungen

- Computer-Blitzlichtgeräte
- Lichtschranken für Gleich- und Wechsellichtbetrieb
- Industrieelektronik
- „Messen/Steuern/Regeln“

Applications

- Computer-controlled flashes
- Photointerrupters
- Industrial electronics
- For control and drive circuits

Typ Type	Bestellnummer Ordering Code
SFH 313	Q62702P1667
SFH 313-2/3	Q62702P3598
SFH 313 FA	Q62702P1674
SFH 313 FA-2/3	Q62702P3597
SFH 313 FA-3/4	Q62702P5196

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}	70	V
Kollektorstrom Collector current	I_C	50	mA
Kollektorspitzenstrom, $\tau < 10$ µs Collector surge current	I_{CS}	100	mA
Emitter-Kollektorspannung Emitter-collector voltage	V_{EC}	7	V
Verlustleistung, T_A = 25 °C Total power dissipation	P_{tot}	200	mW
Wärmewiderstand Thermal resistance	R_{thJA}	375	K/W

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

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**		**Einheit** **Unit**
		SFH 313	**SFH 313 FA**	
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\ max}$	850	870	nm
Spektraler Bereich der Fotoempfindlichkeit S = 10% von S_{max} Spectral range of sensitivity S = 10% of S_{max}	λ	460 … 1080	740 … 1080	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	0.55	0.55	mm^2
Abmessungen der Chipfläche Dimensions of chip area	$L \times B$ $L \times W$	1 × 1	1 × 1	mm × mm
Halbwinkel Half angle	φ	± 10	± 10	Grad deg.
Kapazität, V_{CE} = 5 V, f = 1 MHz, E = 0 Capacitance	C_{CE}	10	10	pF
Dunkelstrom Dark current V_{CE} = 20 V, E = 0	I_{CEO}	3 (≤ 200)	3 (≤ 200)	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.

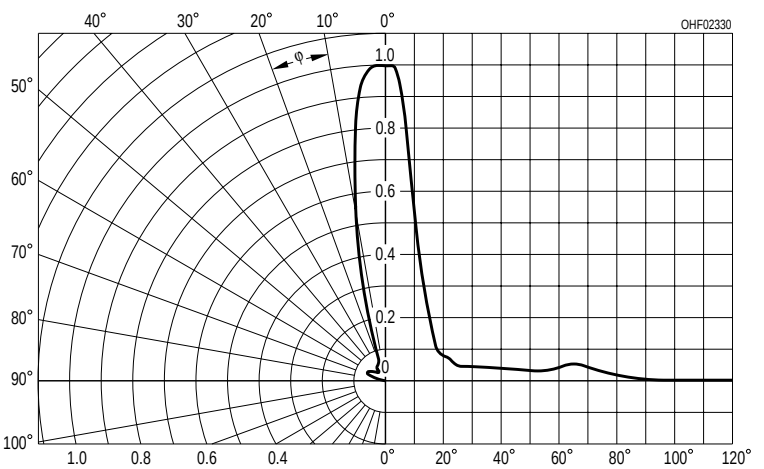
Bezeichnung Parameter	Symbol Symbol	Wert Value				Einheit Unit
		-1	-2	-3	-4	
Fotostrom, $\lambda = 950$ nm Photocurrent E_e = 0.5 mW/cm^2, V_{CE} = 5 V	I_{PCE}	2.5 … 5	4 … 8	6.3 … 12.5	≥ 10	mA
Anstiegszeit/Abfallzeit Rise and fall time I_C = 1 mA, V_{CC} = 5 V, R_L = 1 kΩ	t_r, t_f	8	10	12	14	µs
Kollektor-Emitter-Sättigungsspannung Collector-emitter saturation voltage $I_C = I_{PCEmin}$ [1] × 0.3, E_e = 0.5 mW/cm^2	V_{CEsat}	150	150	150	150	mV

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

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

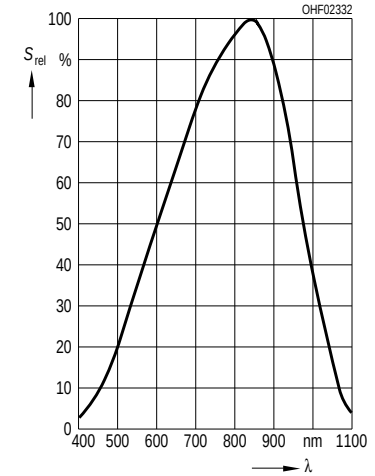
Directional Characteristics

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

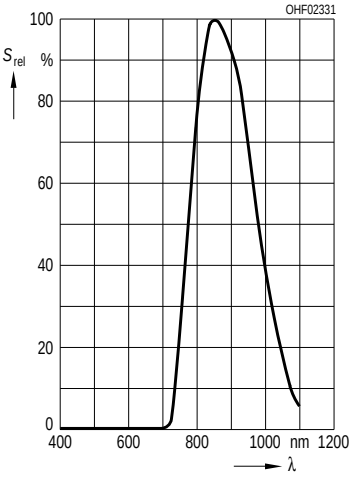


T_A = 25 °C, λ = 950 nm

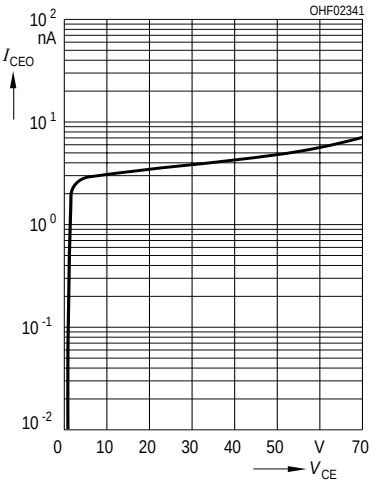
Relative Spectral Sensitivity, SFH 313 $S_{rel} = f(\lambda)$



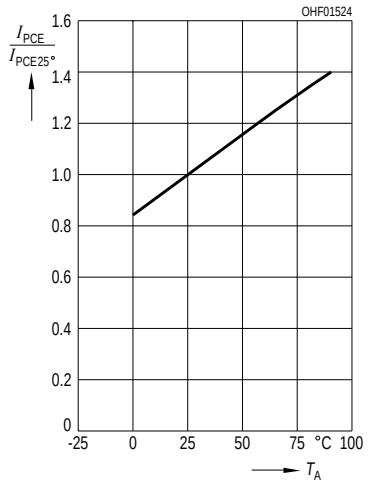
Relative Spectral Sensitivity, SFH 313 FA $S_{rel} = f(\lambda)$



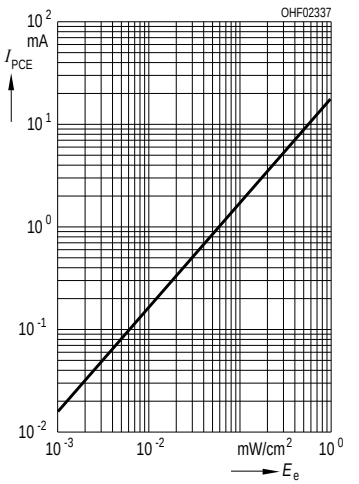
Dark Current
$I_{CEO} = f(V_{CE})$, E = 0



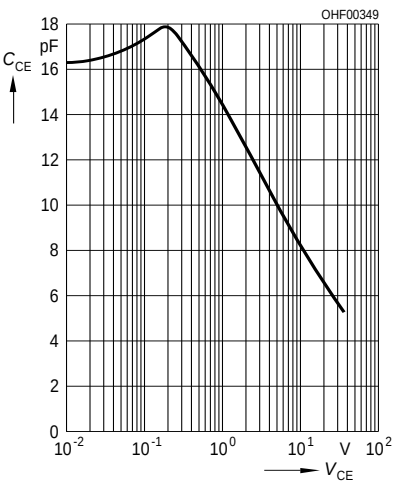
Photocurrent $I_{PCE} = f(T_A)$, V_{CE} = 5 V, normalized to 25 °C



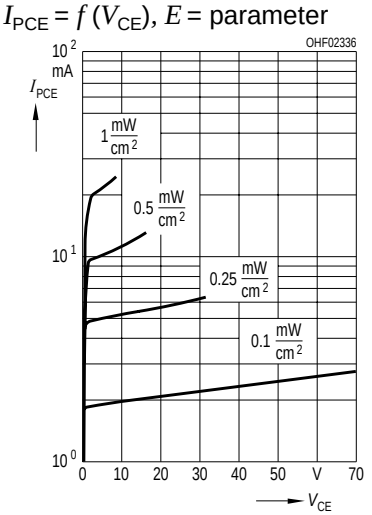
Photocurrent
$I_{PCE} = f(E_e)$, V_{CE} = 5 V



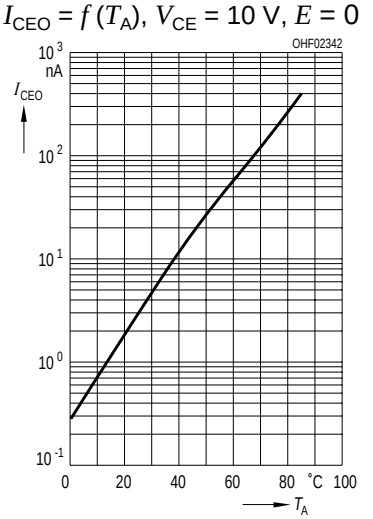
Collector-Emitter Capacitance
$C_{CE} = f(V_{CE})$, f = 1 MHz



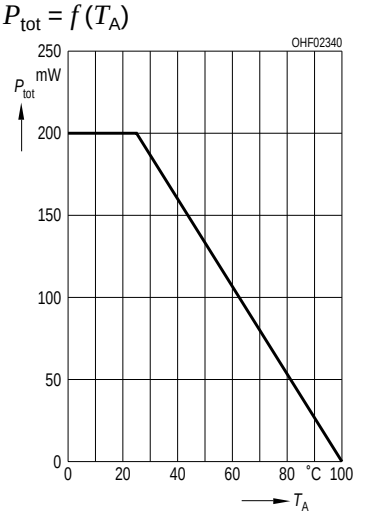
Photocurrent
$I_{PCE} = f(V_{CE})$, E = parameter



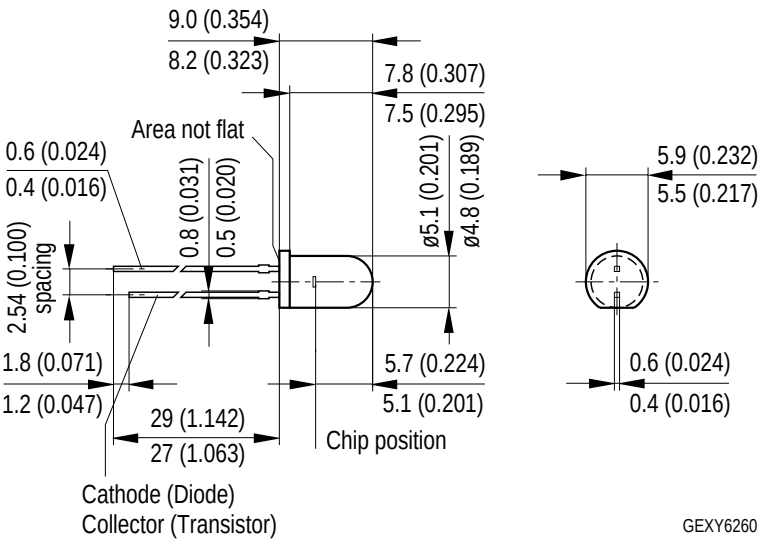
Dark Current
$I_{CEO} = f(T_A)$, V_{CE} = 10 V, E = 0



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

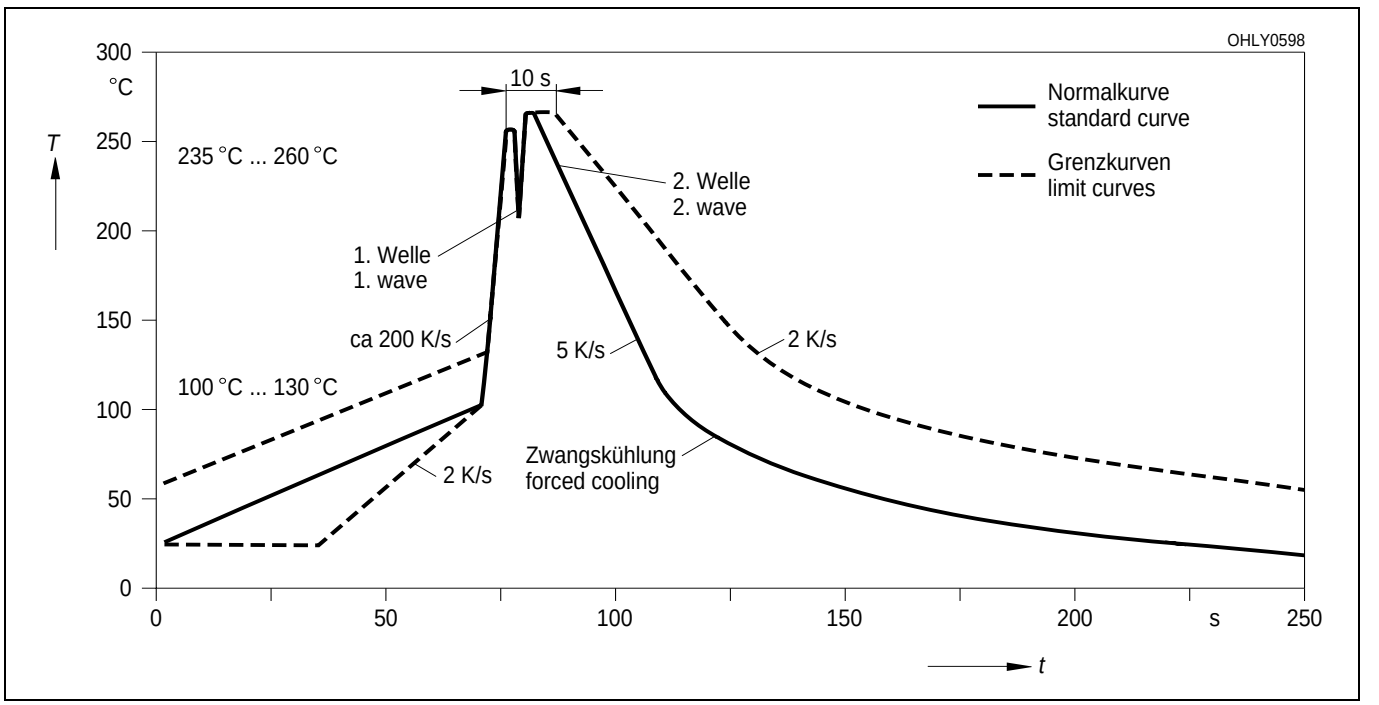


Maßzeichnung
Package Outlines



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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