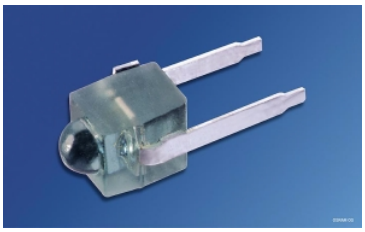
NPN-Silizium-Fototransistor
Silicon NPN Phototransistor

BPX 81



Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 440 nm bis 1070 nm
- Hohe Linearität
- Einstellige Zeilenbauform aus klarem Epoxy
- Gruppiert lieferbar

Features

- Especially suitable for applications from 440 nm to 1070 nm
- High linearity
- One-digit array package of transparent epoxy
- Available in groups

Anwendungen

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

Applications

- Computer-controlled flashes
- Miniature photointerrupters
- Industrial electronics
- For control and drive circuits

Typ Type	Bestellnummer Ordering Code
BPX 81	Q62702-P20
BPX 81-2/3	Q62702-P3583
BPX 81-3	Q62702-P43-S3
BPX 81-3/4	Q62702-P3584
BPX 81-4	Q62702-P43-S4

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
Löttemperatur bei Tauchlötung Lötstelle ≥ 2 mm vom Gehäuse, Lötzeit $t \leq 3$ s Dip soldering temperature ≥ 2 mm distance from case bottom, soldering time $t \leq 3$ s	T_S	230	°C
Löttemperatur bei Kolbenlötung Lötstelle ≥ 2 mm vom Gehäuse, Lötzeit $t \leq 5$ s Iron soldering temperature ≥ 2 mm distance from case bottom, soldering time $t \leq 5$ s	T_S	300	°C
Kollektor-Emitterspannung Collector-emitter voltage	V_{CE}	32	V
Kollektorstrom Collector current	I_C	50	mA
Kollektorspitzenstrom, $\tau < 10$ µs Collector surge current	I_{CS}	200	mA
Verlustleistung, $T_A = 25$ °C Total power dissipation	P_{tot}	90	mW
Wärmewiderstand Thermal resistance	R_{thJA}	750	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	440 … 1070	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	0.17	mm^2
Abmessung der Chipfläche Dimensions of chip area	$L \times B$ $L \times W$	0.6 × 0.6	mm × mm
Abstand Chipoberfläche zu Gehäuseoberfläche Distance chip front to case surface	H	1.3 … 1.9	mm
Halbwinkel Half angle	φ	± 18	Grad deg.
Kapazität Capacitance V_{CE} = 0 V, f = 1 MHz, E = 0	C_{CE}	6	pF
Dunkelstrom Dark current V_{CE} = 25 V, E = 0	I_{CEO}	25 (≤ 200)	nA

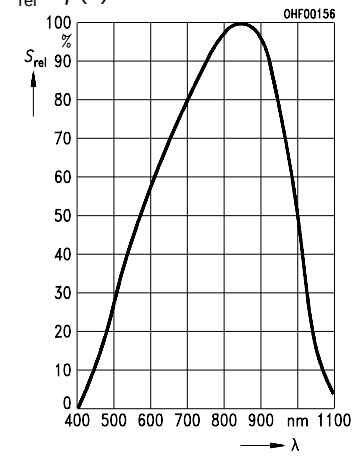
Die Fototransistoren werden nach ihrer Fotoempfindlichkeit gruppiert und mit arabischen Ziffern gekennzeichnet.
The phototransistors are grouped according to their spectral sensitivity and distinguished by arabian figures.

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**			**Einheit** **Unit**
		-2	**-3**	**-4**	
Fotostrom, $\lambda = 950$ nm Photocurrent E_e = 0.5 mW/cm^2, V_{CE} = 5 V E_v = 1000 lx, Normlicht/standard light A, V_{CE} = 5 V	 I_{PCE} I_{PCE}	 0.25 … 0.50 1.4	 0.40 … 0.80 2.2	 ≥ 0.63 3.4	 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

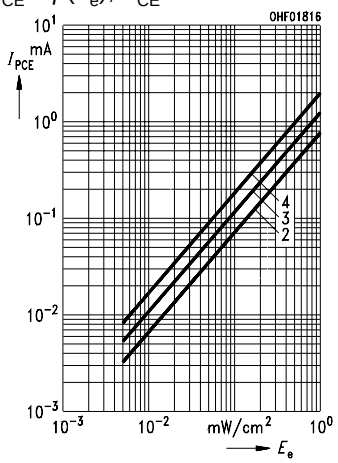
1) I_{PCEmin} ist der minimale Fotostrom der jeweiligen Gruppe.

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

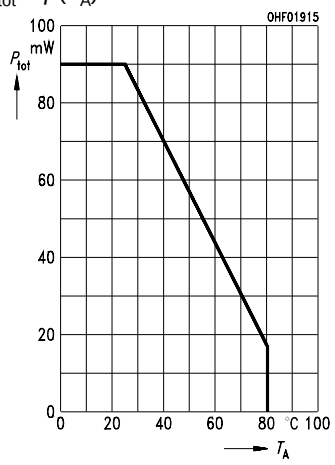
Relative Spectral Sensitivity
$S_{rel} = f(\lambda)$



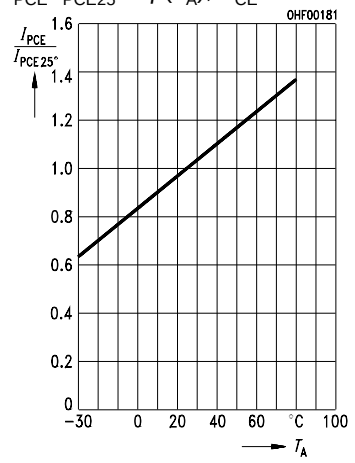
Photocurrent
$I_{PCE} = f(E_e)$, V_{CE} = 5 V



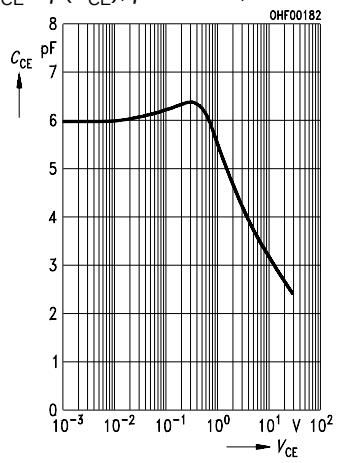
Total Power Dissipation
$P_{tot} = f(T_A)$



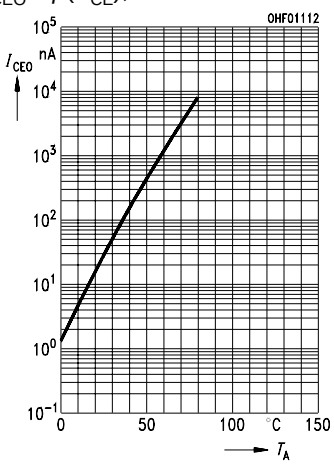
Photocurrent
$I_{PCE}/I_{PCE25°} = f(T_A)$, V_{CE} = 5 V



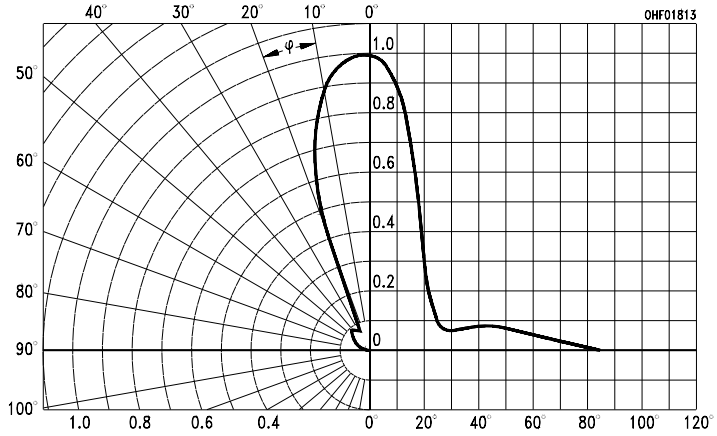
Collector-Emitter Capacitance
$C_{CE} = f(V_{CE})$, f = 1 MHz, E = 0



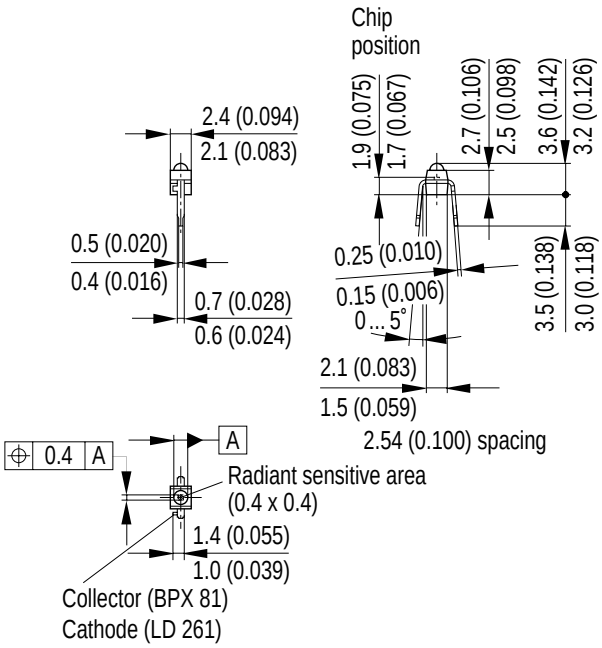
Dark Current
$I_{CEO} = f(V_{CE})$, E = 0



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



Maßzeichnung
Package Outlines



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

Published by OSRAM Opto Semiconductors GmbH & Co. OHG
Wernerwerkstrasse 2, D-93049 Regensburg

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