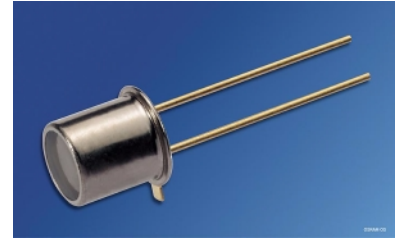**Silizium-PIN-Fotodiode**
Silicon PIN Photodiode

BPX 65

Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 350 nm bis 1100 nm
- BPX 65: Hohe Fotoempfindlichkeit
- Hermetisch dichte Metallbauform (TO-18), geeignet bis 125 °C

Anwendungen

- Schneller optischer Empfänger mit großer Modulationsbandbreite

Features

- Especially suitable for applications from 350 nm to 1100 nm
- BPX 65: high photosensitivity
- Hermetically sealed metal package (TO-18), suitable up to 125 °C

Applications

- Fast optical sensor of high modulation bandwidth

Typ Type	Bestellnummer Ordering Code	Gehäuse Package
BPX 65	Q62702-P27	18 A3 DIN 41870, planes Glasfenster, hermetisch dichtes Gehäuse, Lötspieße im 2.54-mm-Raster (^{2}/10"), Anodenkennzeichnung: Nase am Gehäuseboden 18 A3 DIN 41870, flat glass lens, hermetically sealed package, solder tabs 2.54 mm (^{2}/10") lead spacing, anode marking: projection at package bottom

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Grenzwerte
Maximum Ratings

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebs- und Lagertemperatur Operating and storage temperature range	T_{op}; T_{stg}	– 40 ... + 125	°C
Löttemperatur (Lötstelle 2 mm vom Gehäuse entfernt bei Lötzeit $t \leq 3$ s) Soldering temperature in 2 mm distance from case bottom ($t \leq 3$ s)	T_S	230	°C
Sperrspannung Reverse voltage	V_R	50	V
Verlustleistung, T_A = 25 °C Total power dissipation	P_{tot}	250	mW

Kennwerte (T_A = 25 °C, Normlicht A, T = 2856 K)
Characteristics (T_A = 25 °C, standard light A, T = 2856 K)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Fotoempfindlichkeit, V_R = 5 V Spectral sensitivity	S	10 ($\geq$ 5.5)	nA/lx
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	350 … 1100	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	1.00	mm^2
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$	1×1	mm
Abstand Chipoberfläche zu Gehäuseoberfläche Distance chip front to case surface	H	2.25 … 2.55	mm
Halbwinkel Half angle	φ	$\pm$ 40	Grad deg.
Dunkelstrom Dark current BPX 65: V_R = 20 V	I_R	1 ($\leq$ 5)	nA

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Kennwerte (T_A = 25 °C, Normlicht A, T = 2856 K)
Characteristics (T_A = 25 °C, standard light A, T = 2856 K) (cont'd)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Spektrale Fotoempfindlichkeit, λ = 850 nm Spectral sensitivity	S_λ	0.55	A/W
Quantenausbeute, λ = 850 nm Quantum yield	η	0.80	$\dfrac{\text{Electrons}}{\text{Photon}}$
Leerlaufspannung, E_v = 1000 lx Open-circuit voltage	V_L	320 ($\geq$ 270)	mV
Kurzschluβstrom, E_v = 1000 lx Short-circuit current	I_K	10	µA
Anstiegs und Abfallzeit des Fotostromes Rise and fall time of the photocurrent R_L = 50 Ω; V_R = 5 V; λ = 850 nm; I_p = 800 µA	t_r, t_f	12	ns
Durchlaβspannung, I_F = 100 mA, E = 0 Forward voltage	V_F	1.3	V
Kapazität, V_R = 0 V, f = 1 MHz, E = 0 Capacitance	C_0	11	pF
Temperaturkoeffizient von V_L Temperature coefficient of V_L	TC_V	– 2.6	mV/K
Temperaturkoeffizient von I_K Temperature coefficient of I_K	TC_I	0.2	%/K
Rauschäquivalente Strahlungsleistung Noise equivalent power V_R = 20 V, λ = 850 nm	NEP	3.3×10^{-14}	$\dfrac{\text{W}}{\sqrt{\text{Hz}}}$
Nachweisgrenze, V_R = 20 V, λ = 850 nm Detection limit	D*	3.1×10^{12}	$\dfrac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$

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

OHF01139
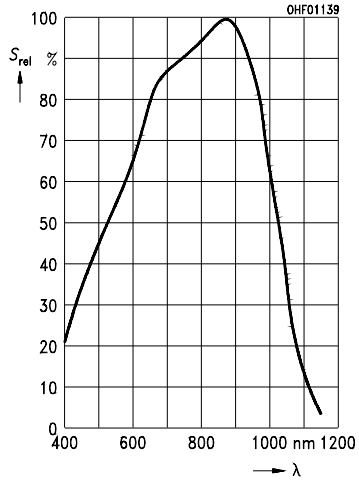
Photocurrent $I_P = f(E_v)$, $V_R = 5$ V
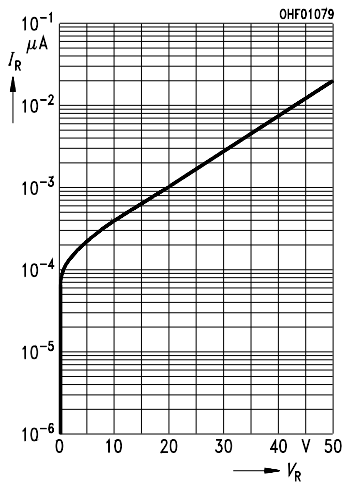**Open-Circuit-Voltage** $V_L = f(E_v)$

OHF01076
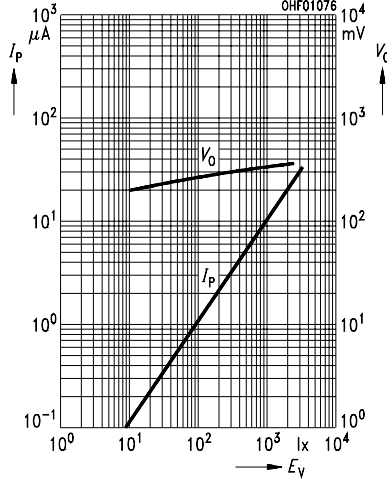
Total Power Dissipation
$P_{tot} = f(T_A)$

OHF00965
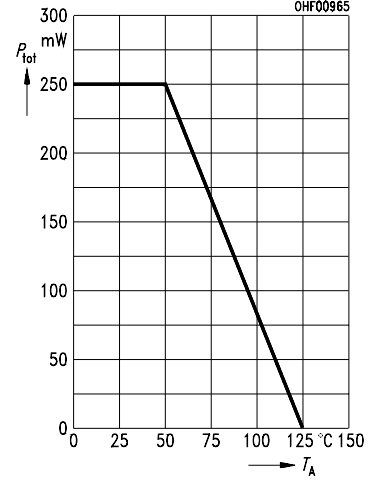
Dark Current
$I_R = f(V_R)$, $E = 0$

OHF01079

Capacitance
$C = f(V_R)$, $f = 1$ MHz, $E = 0$

OHF01077
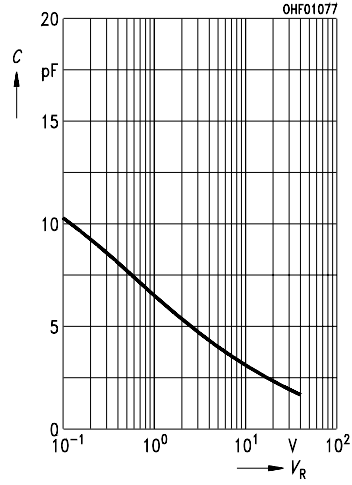
Dark Current
$I_R = f(T_A)$, $V_R = 20$ V, $E = 0$

OHF01140
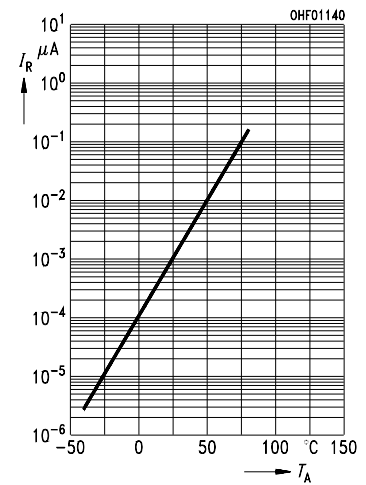
Directional Characteristics
$S_{rel} = f(\varphi)$

OHF01768

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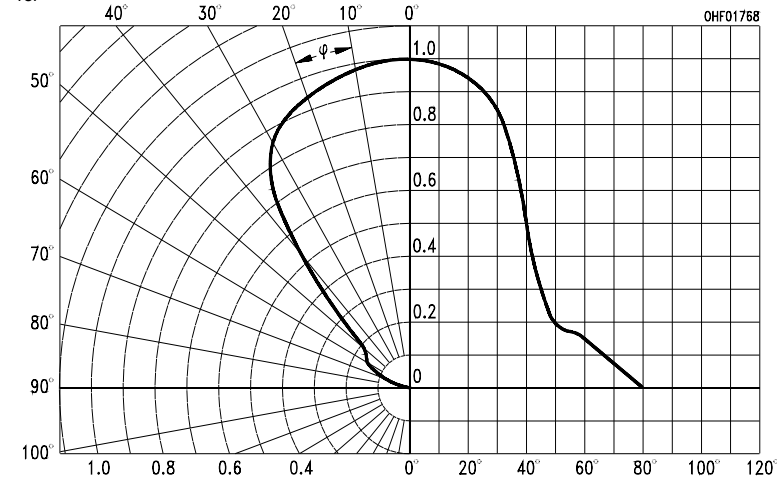
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Maßzeichnung
Package Outlines
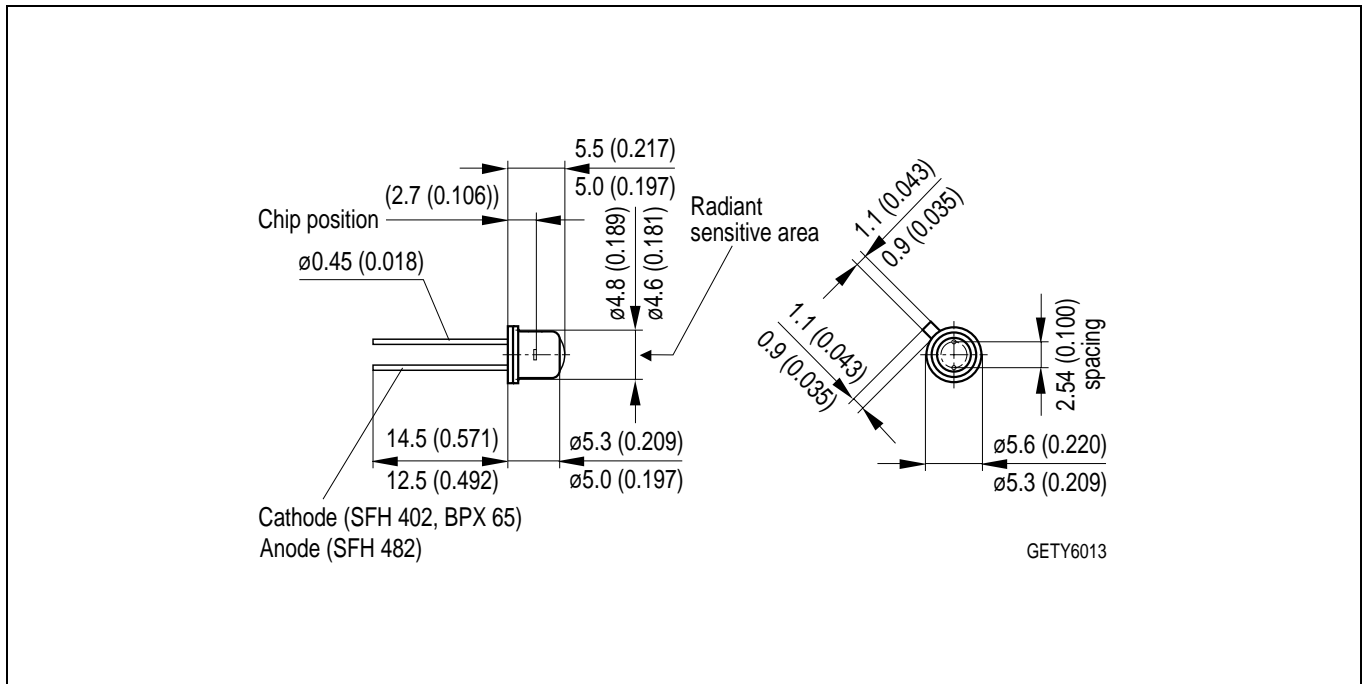
Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

Attention please!
The information describes the type of component and shall not be considered as assured characteristics.
Terms of delivery and rights to change design reserved. Due to technical requirements components may contain dangerous substances. For information on the types in question please contact our Sales Organization.
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Please use the recycling operators known to you. We can also help you – get in touch with your nearest sales office. By agreement we will take packing material back, if it is sorted. You must bear the costs of transport. For packing material that is returned to us unsorted or which we are not obliged to accept, we shall have to invoice you for any costs incurred.
Components used in life-support devices or systems must be expressly authorized for such purpose! Critical components [1] , may only be used in life-support devices or systems [2] with the express written approval of OSRAM OS.
[1] A critical component is a component usedin a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or effectiveness of that device or system.
[2] Life support devices or systems are intended (a) to be implanted in the human body, or (b) to support and/or maintain and sustain human life. If they fail, it is reasonable to assume that the health of the user may be endangered.

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