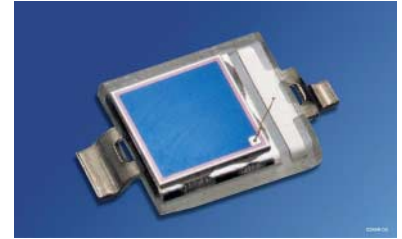
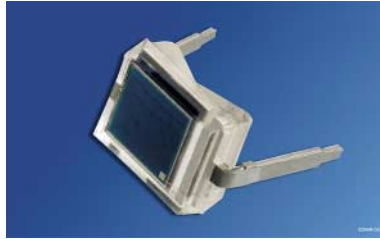


# Silizium-PIN-Fotodiode mit erhöhter Blauempfindlichkeit; in SMT Silicon PIN Photodiode with Enhanced Blue Sensitivity; in SMT

**BPW 34 B**  
**BPW 34 BS**



## Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 350 nm bis 1100 nm
- Kurze Schaltzeit (typ. 25 ns)
- DIL-Plastikbauform mit hoher Packungsdichte

## Anwendungen

- Lichtschranken für Gleich- und Wechsellichtbetrieb im sichtbaren Lichtbereich
- Industrieelektronik
- „Messen/Steuern/Regeln“

## Features

- Especially suitable for applications from 350 nm to 1100 nm
- Short switching time (typ. 25 ns)
- DIL plastic package with high packing density

## Applications

- Photointerrupters
- Industrial electronics
- For control and drive circuits

Typ Type	Bestellnummer Ordering Code
BPW 34 B	Q62702-P945
BPW 34 BS	Q62702-P1601

**Grenzwerte**  
**Maximum Ratings**

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebs- und Lagertemperatur Operating and storage temperature range	$T_{op}; T_{stg}$	- 40 ... + 85	°C
Sperrspannung Reverse voltage	$V_R$	32	V
Verlustleistung, $T_A = 25\text{ °C}$ Total power dissipation	$P_{tot}$	150	mW

**Kennwerte** ( $T_A = 25\text{ °C}$ , Normlicht A,  $T = 2856\text{ K}$ )  
**Characteristics** ( $T_A = 25\text{ °C}$ , standard light A,  $T = 2856\text{ K}$ )

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Fotoempfindlichkeit, $V_R = 5\text{ V}$ Spectral sensitivity	$S$	75	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 $S_{max}$	$\lambda$	350 ... 1100	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	$A$	7.45	mm <sup>2</sup>
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$	$2.73 \times 2.73$	mm × mm
Halbwinkel Half angle	$\varphi$	± 60	Grad deg.
Dunkelstrom, $V_R = 10\text{ V}$ Dark current	$I_R$	2 ( $\leq 30$ )	nA
Spektrale Fotoempfindlichkeit, $\lambda = 400\text{ nm}$ Spectral sensitivity	$S_\lambda$	0.2	A/W
Quantenausbeute, $\lambda = 400\text{ nm}$ Quantum yield	$\eta$	0.62	<u>Electrons</u> <u>Photon</u>
Leerlaufspannung, $E_v = 1000\text{ lx}$ Open-circuit voltage	$V_O$	390	mV

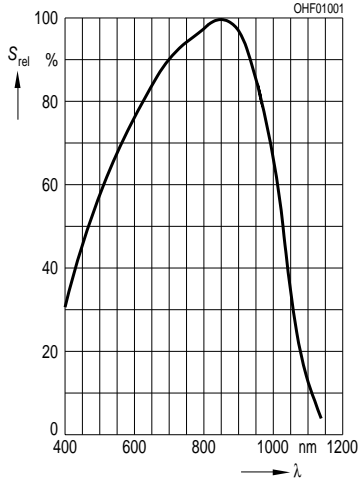
**Kennwerte** ( $T_A = 25\text{ °C}$ , Normlicht A,  $T = 2856\text{ K}$ )

**Characteristics** ( $T_A = 25\text{ °C}$ , standard light A,  $T = 2856\text{ K}$ ) (cont'd)

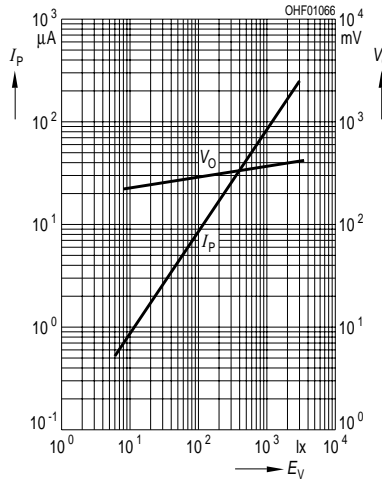
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kurzschlußstrom Short-circuit current $E_e = 0.5\text{ mW/cm}^2$ , $\lambda = 400\text{ nm}$	$I_{SC}$	7.4 ( $\geq 5.4$ )	$\mu\text{A}$
Anstiegs- und Abfallzeit des Fotostromes Rise and fall time of the photocurrent $R_L = 50\ \Omega$ ; $V_R = 5\text{ V}$ ; $\lambda = 850\text{ nm}$ ; $I_p = 800\ \mu\text{A}$	$t_r, t_f$	25	ns
Durchlaßspannung, $I_F = 100\text{ mA}$ , $E = 0$ Forward voltage	$V_F$	1.3	V
Kapazität, $V_R = 0\text{ V}$ , $f = 1\text{ MHz}$ , $E = 0$ Capacitance	$C_0$	72	pF
Temperaturkoeffizient von $V_O$ Temperature coefficient of $V_O$	$TC_V$	- 2.6	mV/K
Temperaturkoeffizient von $I_{SC}$ Temperature coefficient of $I_{SC}$	$TC_I$	0.18	%/K
Rauschäquivalente Strahlungsleistung Noise equivalent power $V_R = 10\text{ V}$ , $\lambda = 400\text{ nm}$	$NEP$	$1.3 \times 10^{-13}$	$\frac{\text{W}}{\sqrt{\text{Hz}}}$
Nachweisgrenze, $V_R = 10\text{ V}$ , $\lambda = 400\text{ nm}$ Detection limit	$D^*$	$2.1 \times 10^{12}$	$\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$

**Relative Spectral Sensitivity**

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

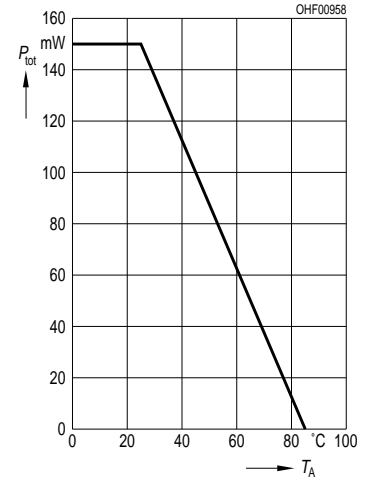


**Photocurrent  $I_P = f(E_V)$ ,  $V_R = 5\text{ V}$   
Open-Circuit Voltage  $V_O = f(E_V)$**



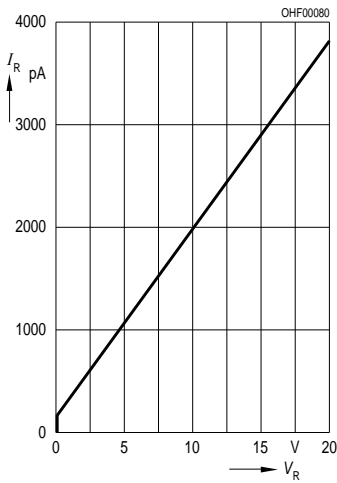
**Total Power Dissipation**

$P_{tot} = f(T_A)$



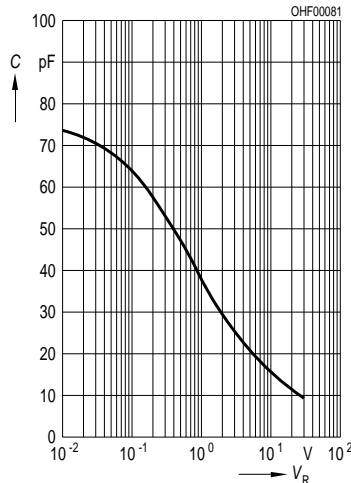
**Dark Current**

$I_R = f(V_R), E = 0$



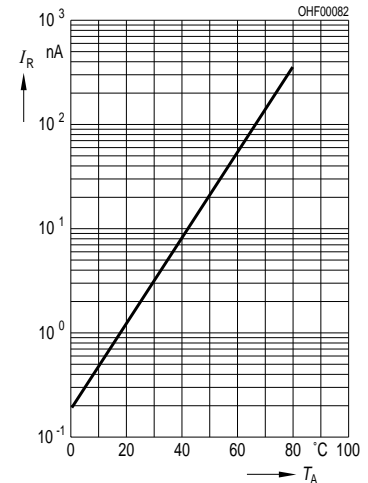
**Capacitance**

$C = f(V_R), f = 1\text{ MHz}, E = 0$



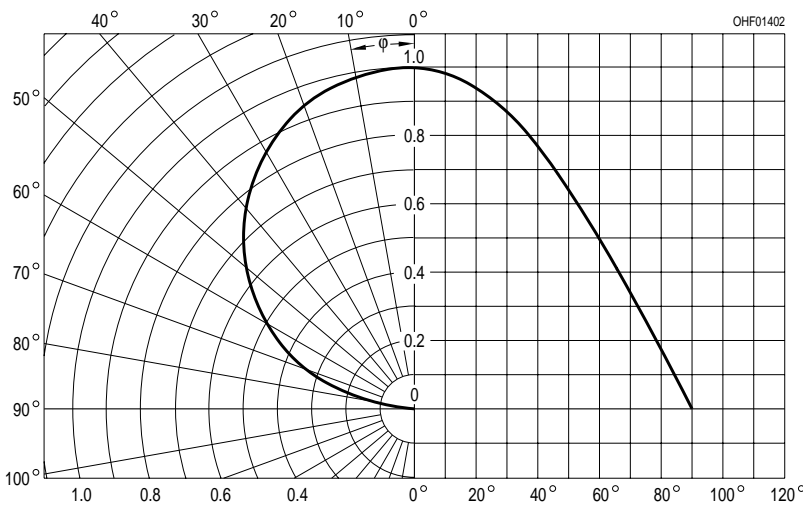
**Dark Current**

$I_R = f(T_A), V_R = 5\text{ V}, E = 0$

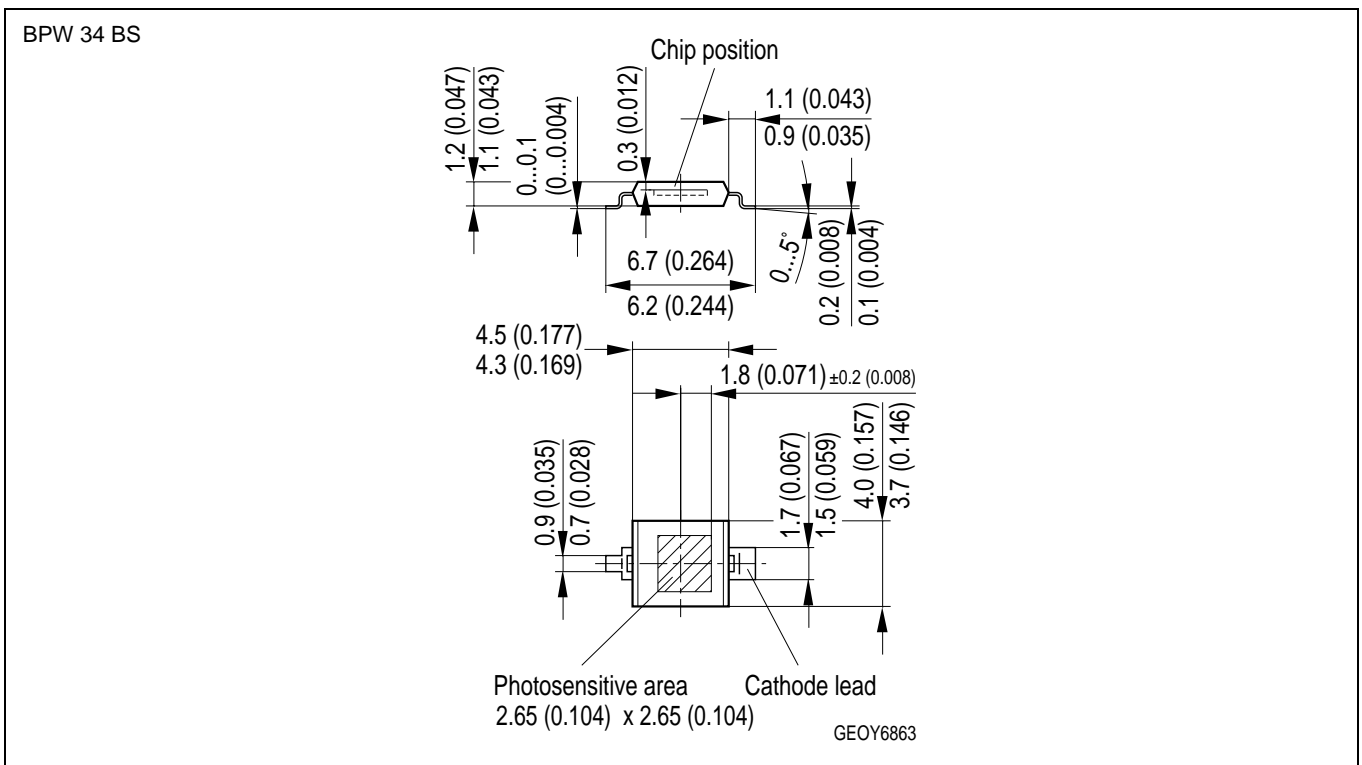
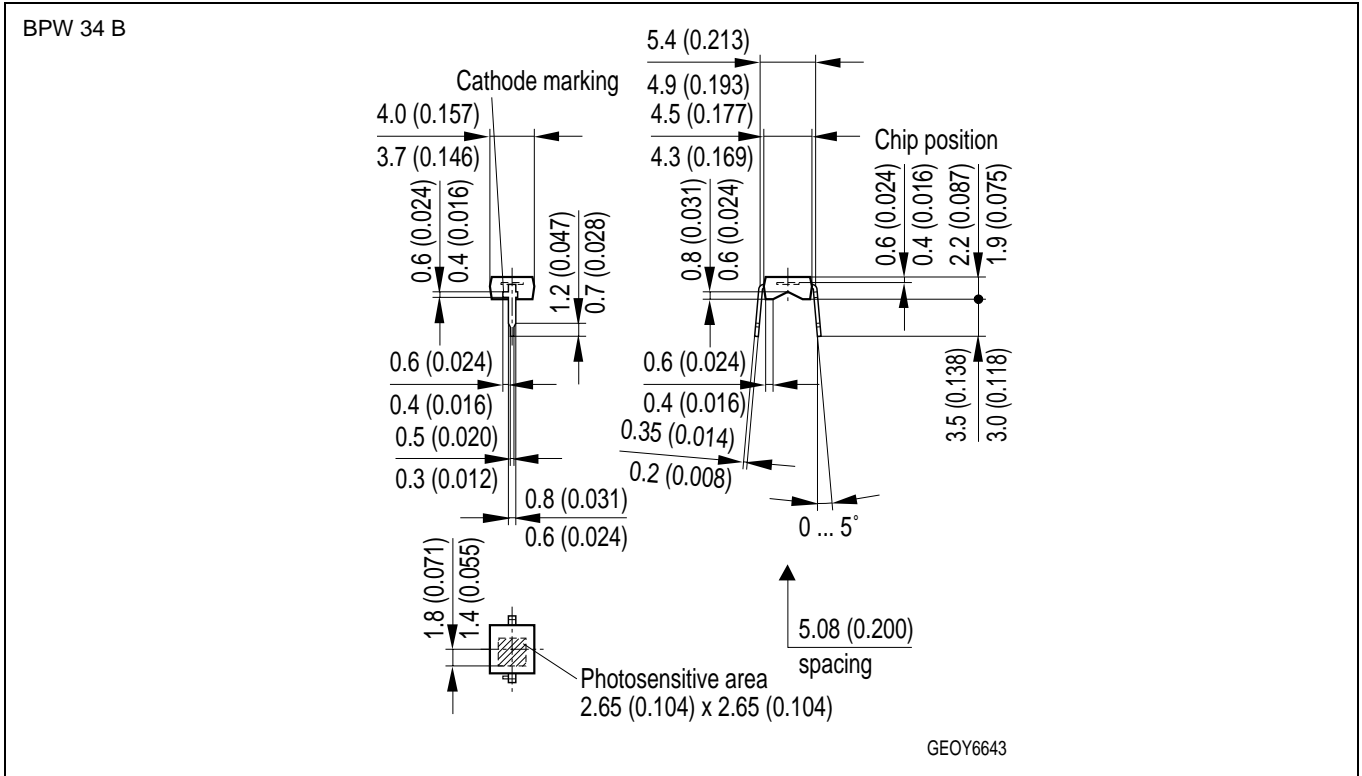


**Directional Characteristics**

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



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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**Attention please!**

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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.

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<sup>1</sup> A critical component is a component used in 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.

<sup>2</sup> 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.