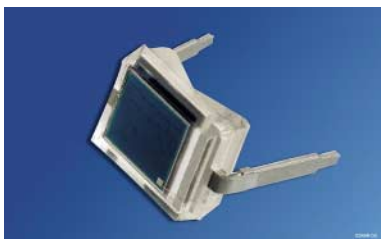
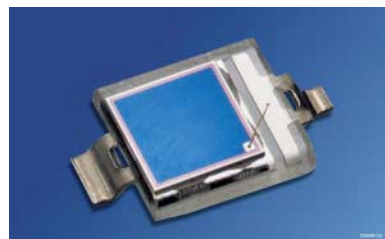


Silizium-PIN-Fotodiode mit erhöhter Blauempfindlichkeit; in SMT Silicon PIN Photodiode with Enhanced Blue Sensitivity; in SMT Lead (Pb) Free Product - RoHS Compliant

BPW 34 B BPW 34 BS



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	Q65110A3126
BPW 34 BS	Q65110A2625

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	$\lambda_{S\text{ max}}$	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	7.45	mm ²
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$	2.73×2.73	mm × mm
Halbwinkel Half angle	φ	± 60	Grad deg.
Dunkelstrom, $V_R = 10\text{ V}$ Dark current	I_R	2 (≤ 30)	nA
Spektrale Fotoempfindlichkeit, $\lambda = 400\text{ nm}$ Spectral sensitivity	S_λ	0.2	A/W
Quantenausbeute, $\lambda = 400\text{ nm}$ Quantum yield	η	0.62	<u>Electrons</u> Photon
Leerlaufspannung, $E_v = 1000\text{ lx}$ Open-circuit voltage	V_O	390	mV

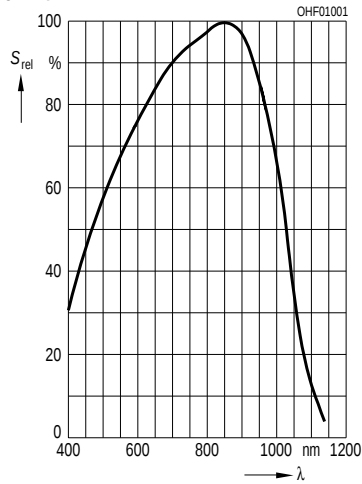
Kennwerte ($T_A = 25\text{ °C}$, Normlicht A, $T = 2856\text{ K}$)

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

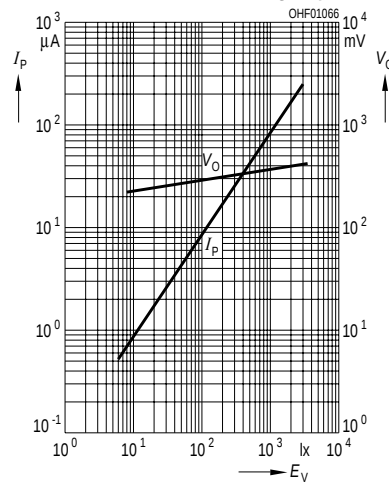
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kurzschlussstrom Short-circuit current $E_e = 0.5\text{ mW/cm}^2$, $\lambda = 400\text{ nm}$	I_{SC}	7.4 (≥ 5.4)	μA
Anstiegs- und Abfallzeit des Fotostroms Rise and fall time of the photocurrent $R_L = 50\text{ }\Omega$; $V_R = 5\text{ V}$; $\lambda = 850\text{ nm}$; $I_p = 800\text{ }\mu\text{A}$	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	1.3×10^{-13}	$\frac{\text{W}}{\sqrt{\text{Hz}}}$
Nachweisgrenze, $V_R = 10\text{ V}$, $\lambda = 400\text{ nm}$ Detection limit	D^*	2.1×10^{12}	$\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$

Relative Spectral Sensitivity

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

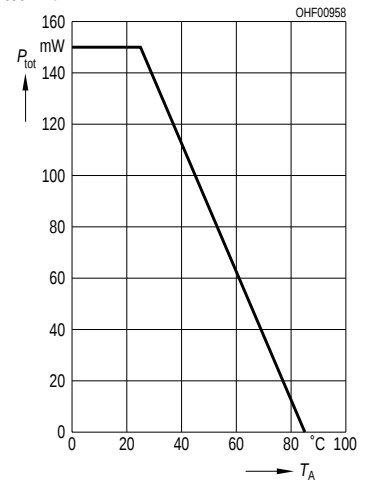


Photocurrent $I_P = f(E_V)$, $V_R = 5 \text{ V}$ Open-Circuit Voltage $V_O = f(E_V)$



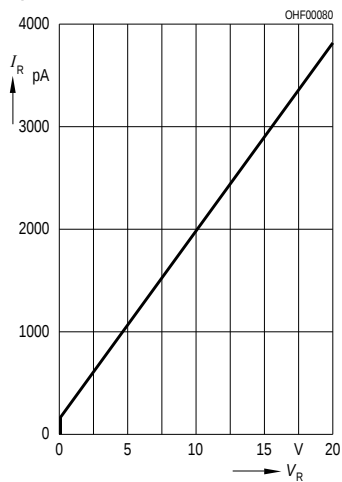
Total Power Dissipation

$$P_{\text{tot}} = f(T_A)$$



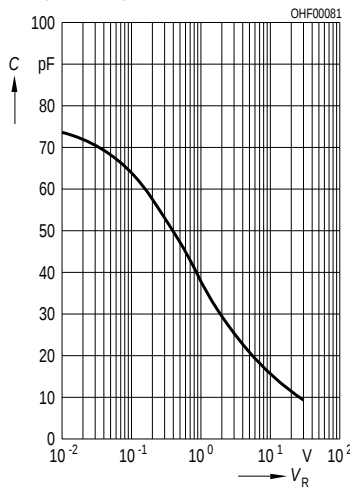
Dark Current

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



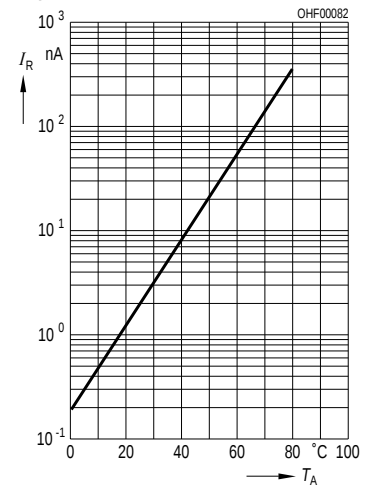
Capacitance

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



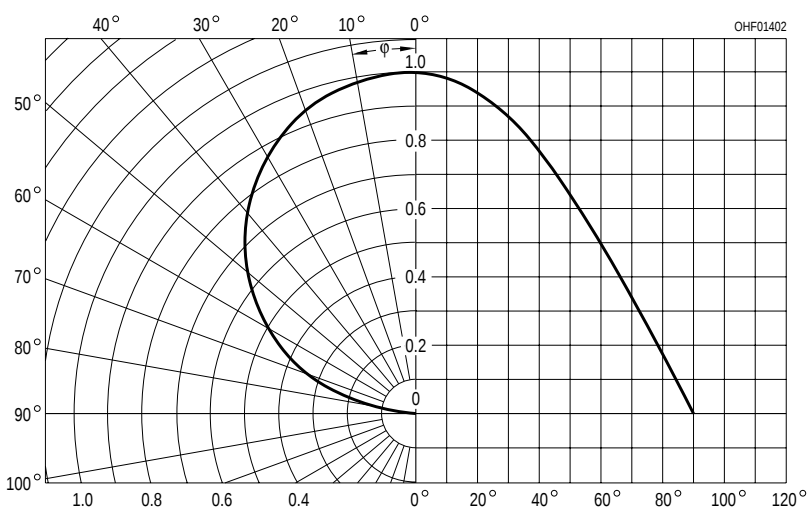
Dark Current

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

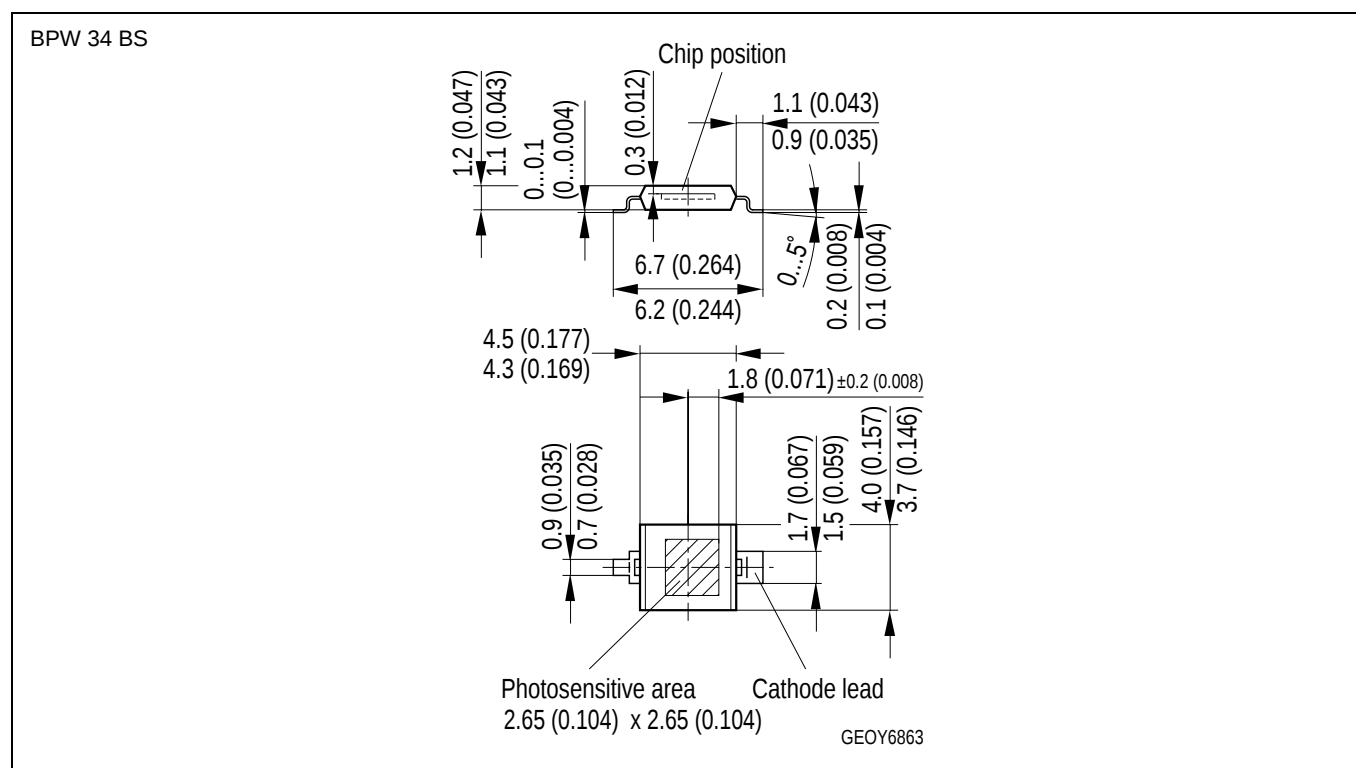
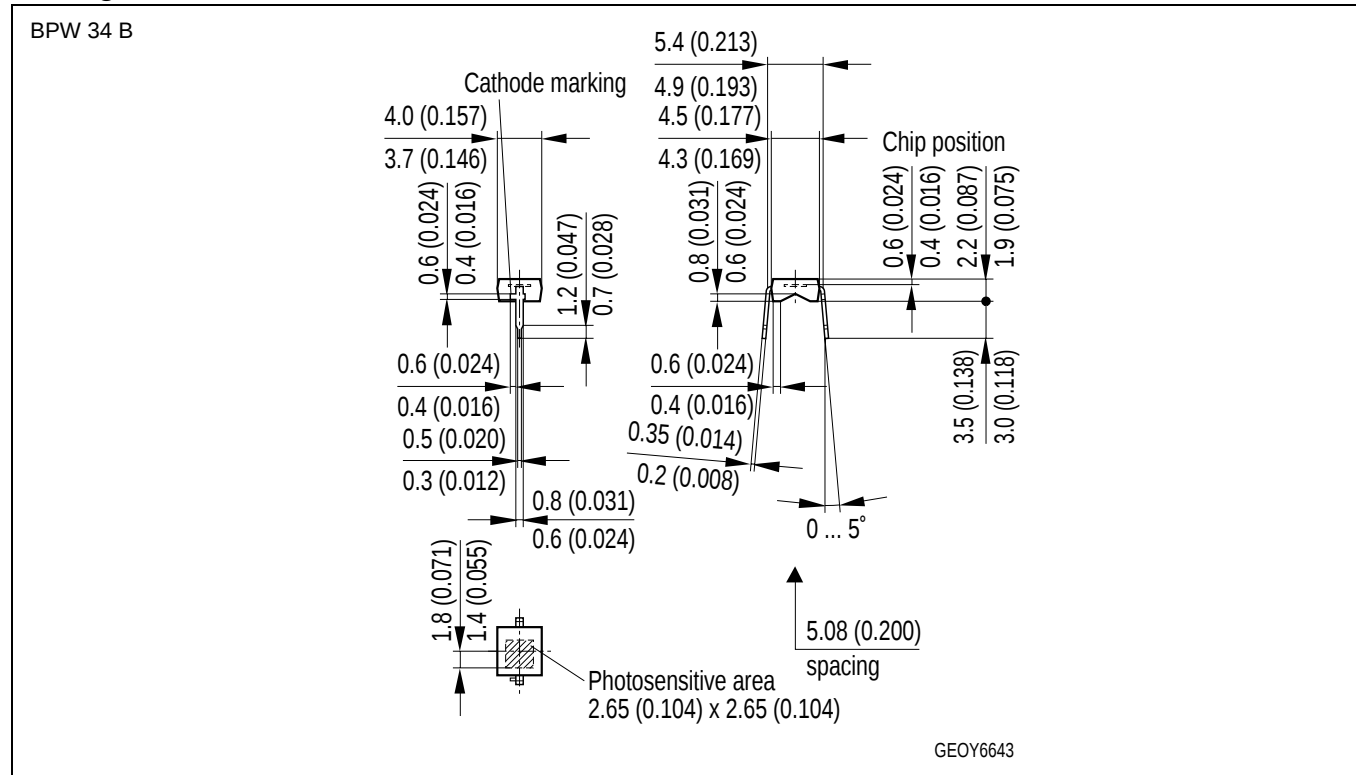


Directional Characteristics

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



Maßzeichnung
Package Outlines

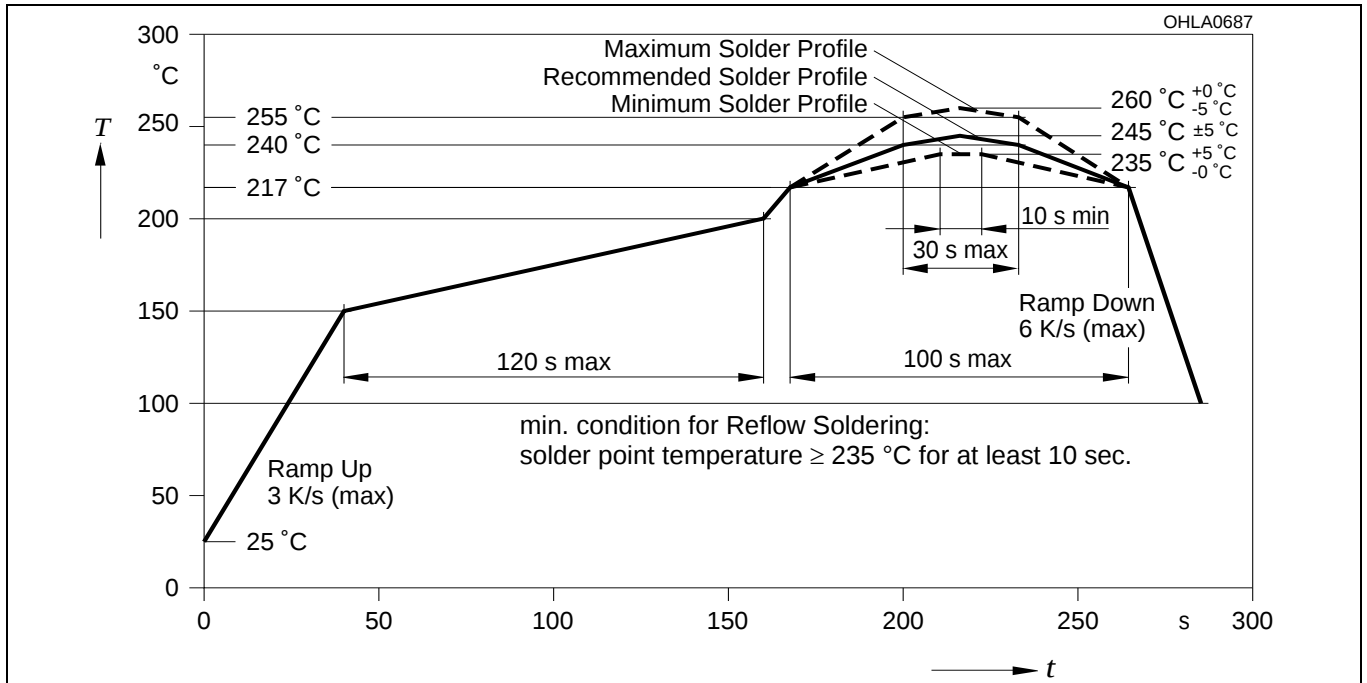


Maße in mm (inch) / Dimensions in mm (inch).

Lötbedingungen
Soldering Conditions
Reflow Lötprofil für bleifreies Löten
Reflow Soldering Profile for lead free soldering

BPW 34 BS

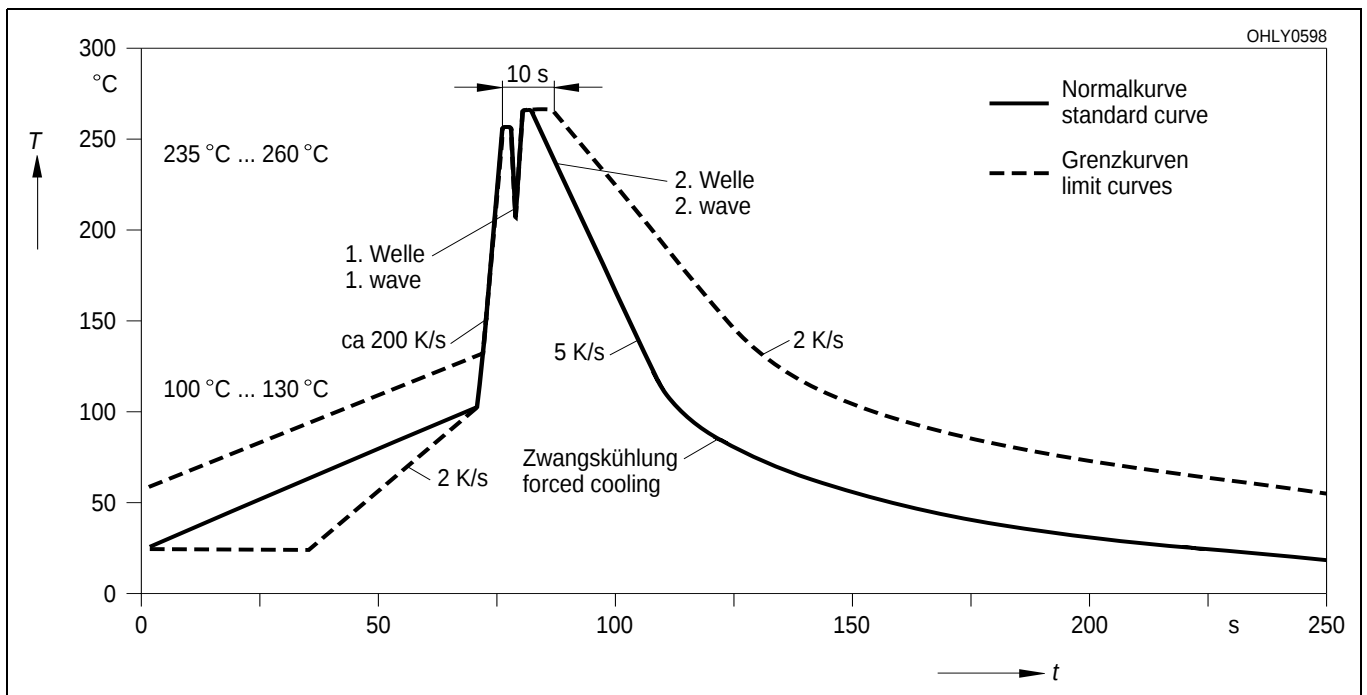
Vorbehandlung nach JEDEC Level 4
 Preconditioning acc. to JEDEC Level 4
 (nach J-STD-020C)
 (acc. to J-STD-020C)



Wellenlöten (TTW)
TTW Soldering

BPW 34 B

(nach CECC 00802)
 (acc. to CECC 00802)



Published by
OSRAM Opto Semiconductors GmbH
Wernerwerkstrasse 2, D-93049 Regensburg
www.osram-os.com

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¹ 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.

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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