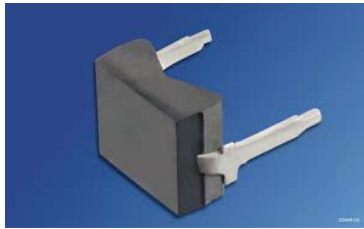
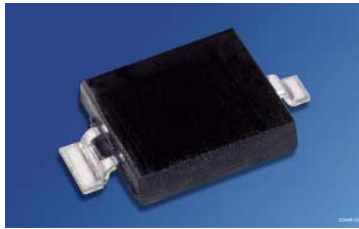


Si-PIN-Fotodiode mit Tageslichtsperrfilter; in SMT und als Reverse Gullwing
Silicon PIN Photodiode with Daylight Filter; in SMT and as Reverse Gullwing
Lead (Pb) Free Product - RoHS Compliant

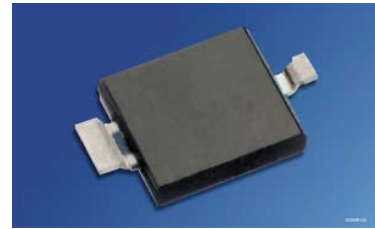
BPW 34 F, BPW 34 FS, BPW 34 FSR



BPW 34 F



BPW 34 FS



BPW 34 FSR

Wesentliche Merkmale

- Speziell geeignet für den Wellenlängenbereich von 780 nm bis 1100 nm
- Kurze Schaltzeit (typ. 20 ns)
- DIL-Plastikbauform mit hoher Packungsdichte
- BPW 34 FS / FSR: geeignet für Reflow Löten

Anwendungen

- Automotomobil (z.B. Regensensor, Headset)
- IR-Fernsteuerung von Fernseh- und Rundfunkgeräten, Videorecordern, Gerätefernsteuerung
- Lichtschranken

Features

- Especially suitable for the wavelength range of 780 nm to 1100 nm
- Short switching time (typ. 20 ns)
- DIL plastic package with high packing density
- BPW 34 FS / FSR: suitable for reflow soldering

Applications

- Automotive (eg rain sensor, headset)
- IR-remote control of hi-fi and TV sets, video tape recorders, remote controls of various equipment
- Photointerrupters

Typ Type	Bestellnummer Ordering Code	Fotostrom, $E_e=1 \text{ mW/cm}^2$, $V_R = 5 \text{ V}$, $\lambda = 950 \text{ nm}$ Photocurrent $I_p (\mu\text{A})$
BPW 34 F	Q62702P0929	50 (≥ 40)
BPW 34 FS	Q65110A2700	50 (≥ 40)
BPW 34 FSR	Q65110A2740	50 (≥ 40)

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
Sperrspannung Reverse voltage	V_R $V_R (t < 2 \text{ min})$	16 32	V V
Verlustleistung, $T_A = 25 \text{ °C}$ Total power dissipation	P_{tot}	150	mW

Kennwerte ($T_A = 25 \text{ °C}$, $\lambda = 950 \text{ nm}$)
Characteristics

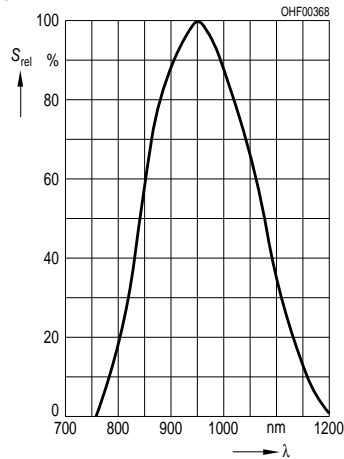
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Fotostrom Photocurrent $V_R = 5 \text{ V}$, $E_e = 1 \text{ mW/cm}^2$	I_p	50 (≥ 40)	μA
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S \text{ max}}$	950	nm
Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von S_{max} Spectral range of sensitivity $S = 10\%$ of S_{max}	λ	780 ... 1100	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	7.00	mm^2
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$	2.65×2.65	$\text{mm} \times \text{mm}$
Halbwinkel Half angle	φ	± 60	Grad deg.
Dunkelstrom, $V_R = 10 \text{ V}$ Dark current	I_R	2 (≤ 30)	nA
Spektrale Fotoempfindlichkeit Spectral sensitivity	S_λ	0.59	A/W
Quantenausbeute Quantum yield	η	0.77	<u>Electrons</u> Photon
Leerlaufspannung, $E_e = 0.5 \text{ mW/cm}^2$ Open-circuit voltage	V_O	330 (≥ 275)	mV

Kennwerte ($T_A = 25\text{ °C}$, $\lambda = 950\text{ nm}$)
Characteristics (cont'd)

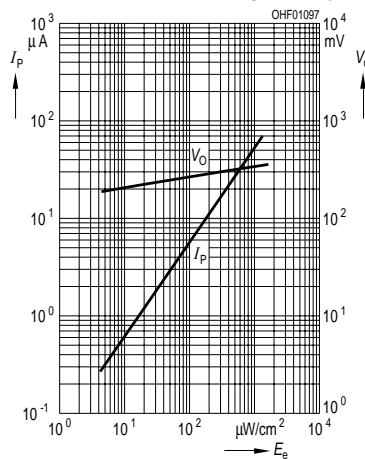
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kurzschlussstrom, $E_e = 0.5\text{ mW/cm}^2$ Short-circuit current	I_{SC}	25	μA
Anstiegs- und Abfallzeit des Fotostromes Rise and fall time of the photocurrent $R_L = 50\text{ }\Omega$; $V_R = 5\text{ V}$; $\lambda = 850\text{ nm}$; $I_p = 800\text{ }\mu\text{A}$	t_r, t_f	20	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 $V_R = 10\text{ V}$	NEP	4.3×10^{-14}	$\frac{\text{W}}{\sqrt{\text{Hz}}}$
Nachweisgrenze, $V_R = 10\text{ V}$ Detection limit	D^*	6.2×10^{12}	$\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$

Relative Spectral Sensitivity

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

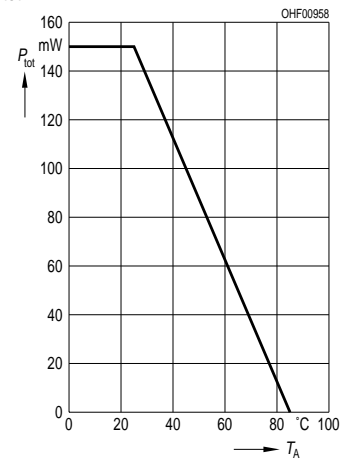


**Photocurrent $I_P = f(E_e)$, $V_R = 5 \text{ V}$
Open-Circuit Voltage $V_O = f(E_e)$**



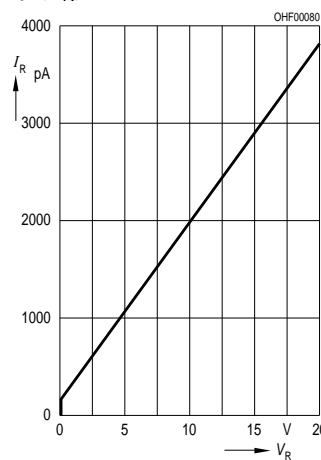
Total Power Dissipation

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



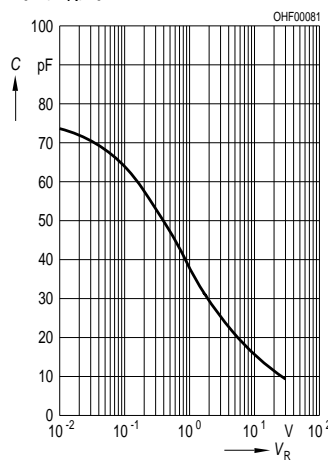
Dark Current

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



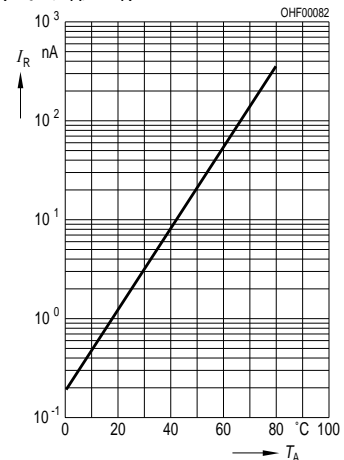
Capacitance

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



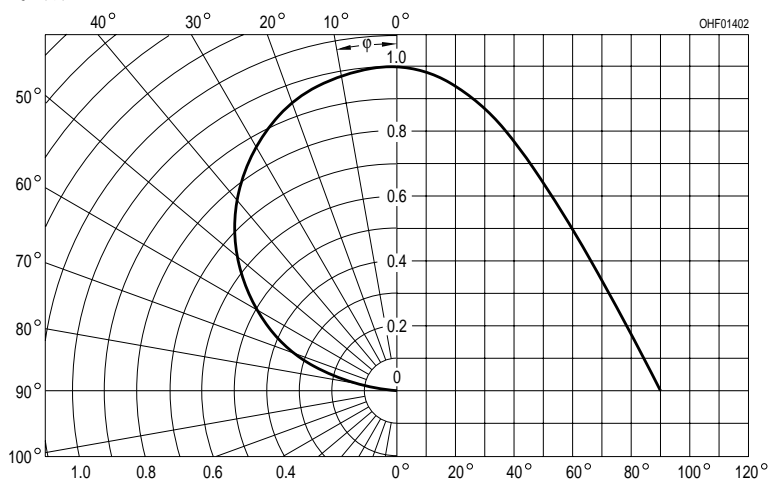
Dark Current

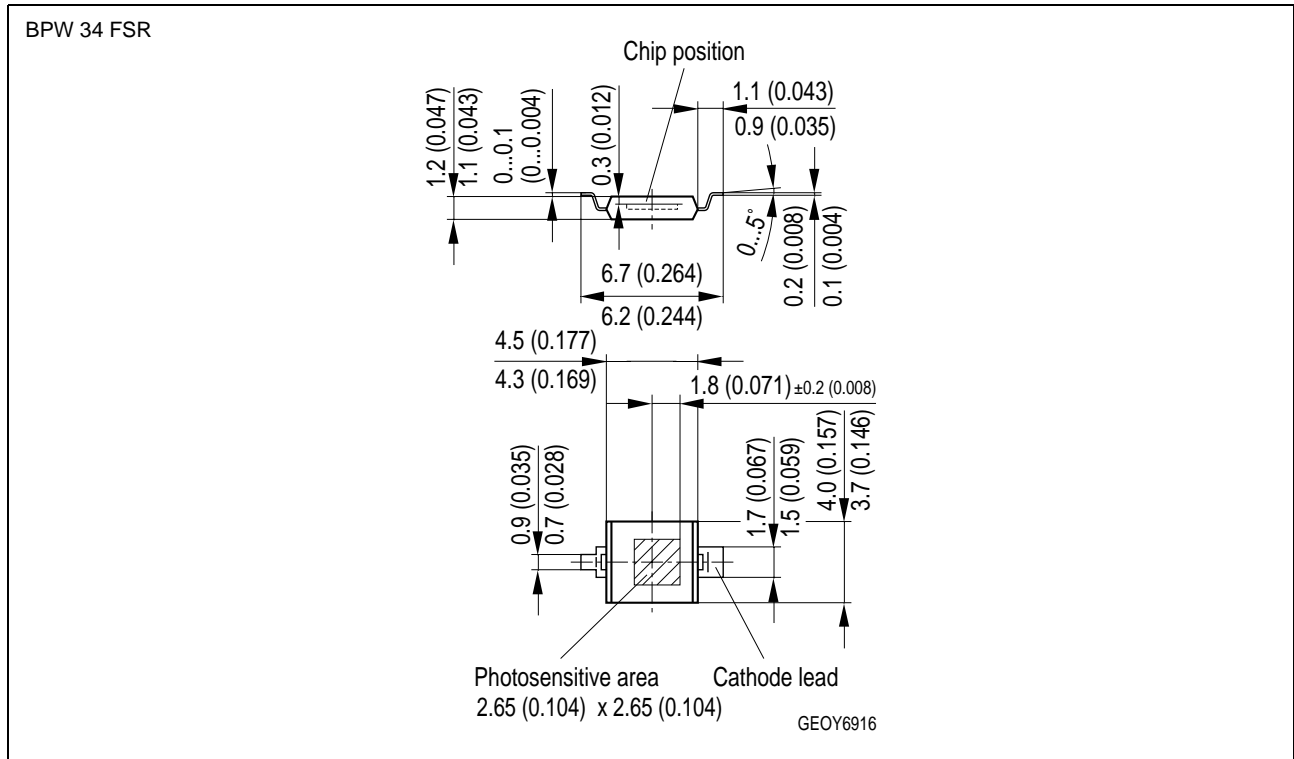
$$I_R = f(T_A), V_R = 10 \text{ V}, E = 0$$



Directional Characteristics

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





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

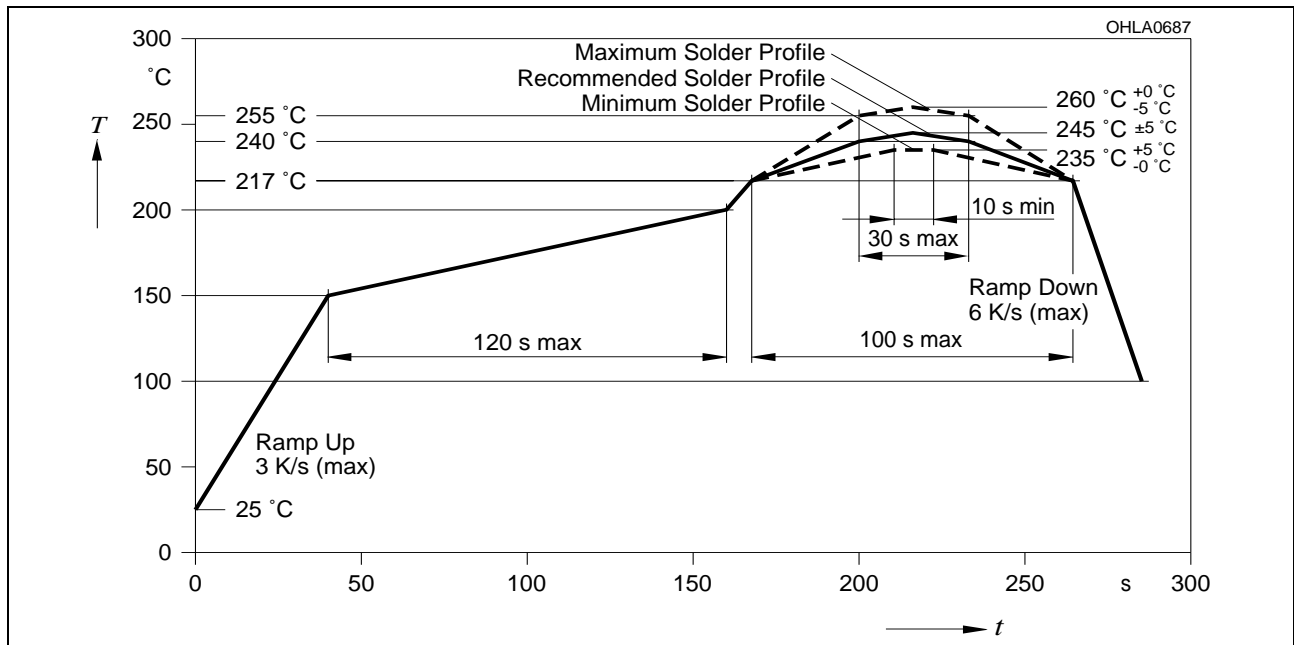
Lötbedingungen
Soldering Conditions

BPW 34 FS
BPW 34 FSR

Vorbehandlung nach JEDEC Level 4
Preconditioning acc. to JEDEC Level 4

Reflow Lötprofil für bleifreies Löt
Reflow Soldering Profile for lead free soldering

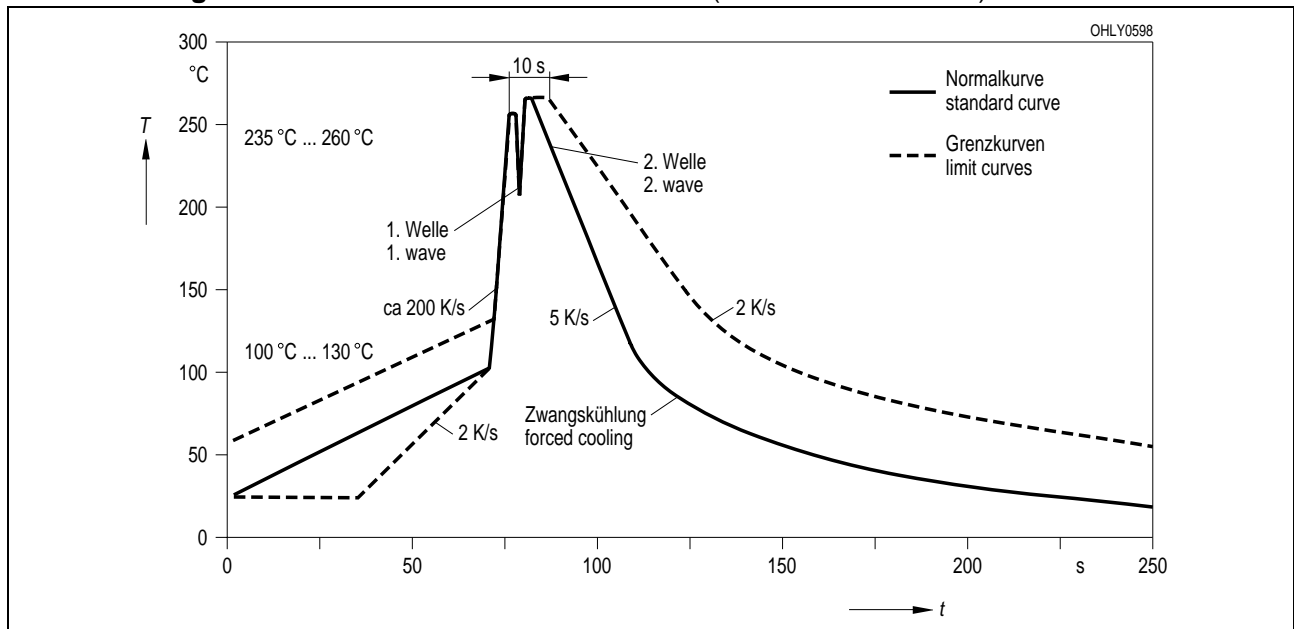
(nach J-STD-020C)
(acc. to J-STD-020C)



Wellenlöt (TTW)
TTW Soldering

BPW 34 F

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



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