

Si-PIN-Fotodiode mit Tageslichtsperrfilter; in SMT und als Reverse Gullwing Silicon PIN Photodiode with Daylight Filter; in SMT and as Reverse Gullwing

BPW 34 F, BPW 34 FS, BPW 34 FS (E9087)



BPW 34 F



BPW 34 FS



BPW 34 FS (E9087)

Wesentliche Merkmale

- Speziell geeignet für Anwendungen bei 950 nm
- Kurze Schaltzeit (typ. 20 ns)
- DIL-Plastikbauform mit hoher Packungsdichte
- BPW 34 FS/(E9087); geeignet für Vapor-Phase Löten und IR-Reflow Löten

Anwendungen

- IR-Fernsteuerung von Fernseh- und Rundfunkgeräten, Videorecordern, Gerätefernsteuerungen
- Lichtschranken für Gleich- und Wechsellichtbetrieb

Features

- Especially suitable for applications of 950 nm
- Short switching time (typ. 20 ns)
- DIL plastic package with high packing density
- BPW 34 FS/(E9087); suitable for vapor-phase and IR-reflow soldering

Applications

- IR remote control of hi-fi and TV sets, video tape recorders, remote controls of various equipment
- Photointerrupters

2001-06-01

Typ Type	Bestellnummer Ordering Code
BPW 34 F	Q62702-P929
BPW 34 FS	Q62702-P1604
BPW 34 FS (E9087)	Q62702-P1826

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

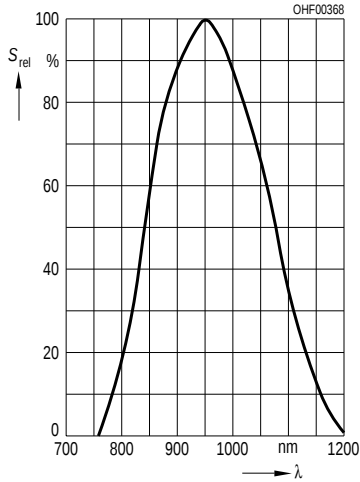
Kennwerte ($T_A = 25\text{ °C}$, $\lambda = 950\text{ nm}$)

Characteristics (cont'd)

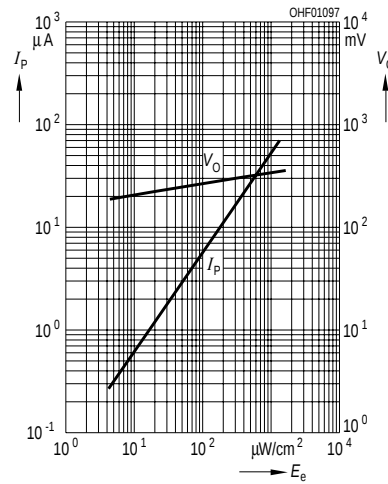
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kurzschlußstrom, $E_e = 0.5\text{ mW/cm}^2$ Short-circuit current	I_{SC}	25	μA
Anstiegs- und Abfallzeit des Fotostromes Rise and fall time of the photocurrent $R_L = 50\text{ }\Omega$; $V_R = 5\text{ V}$; $\lambda = 850\text{ nm}$; $I_p = 800\text{ }\mu\text{A}$	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}	$\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$

1)

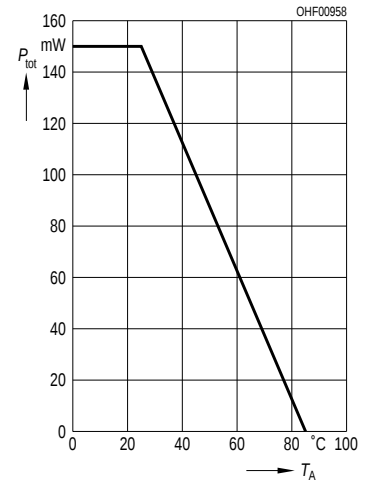
Relative Spectral Sensitivity
 $S_{rel} = f(\lambda)$



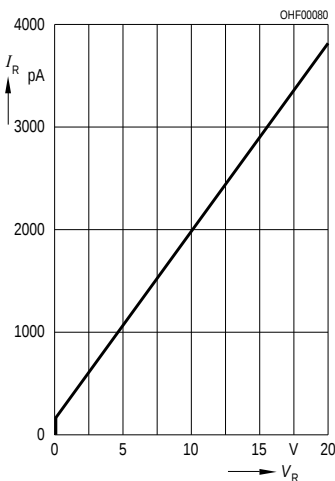
Photocurrent $I_P = f(E_e)$, $V_R = 5 \text{ V}$
Open-Circuit Voltage $V_O = f(E_e)$



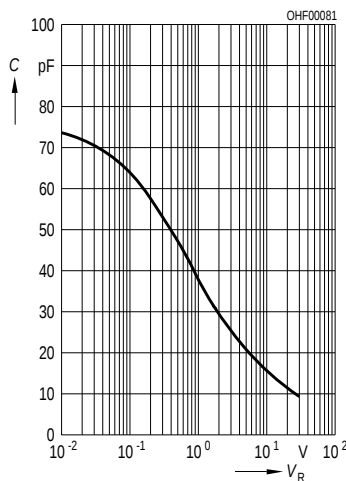
Total Power Dissipation
 $P_{tot} = f(T_A)$



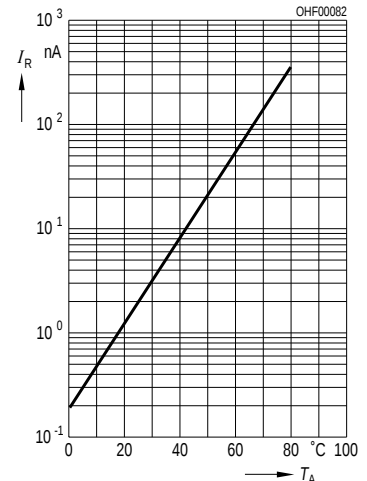
Dark Current
 $I_R = f(V_R), E = 0$



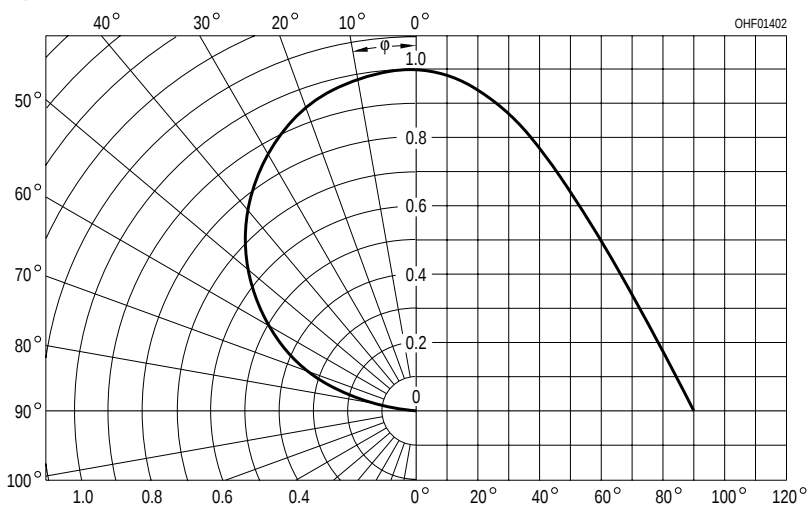
Capacitance
 $C = f(V_R), f = 1 \text{ MHz}, E = 0$



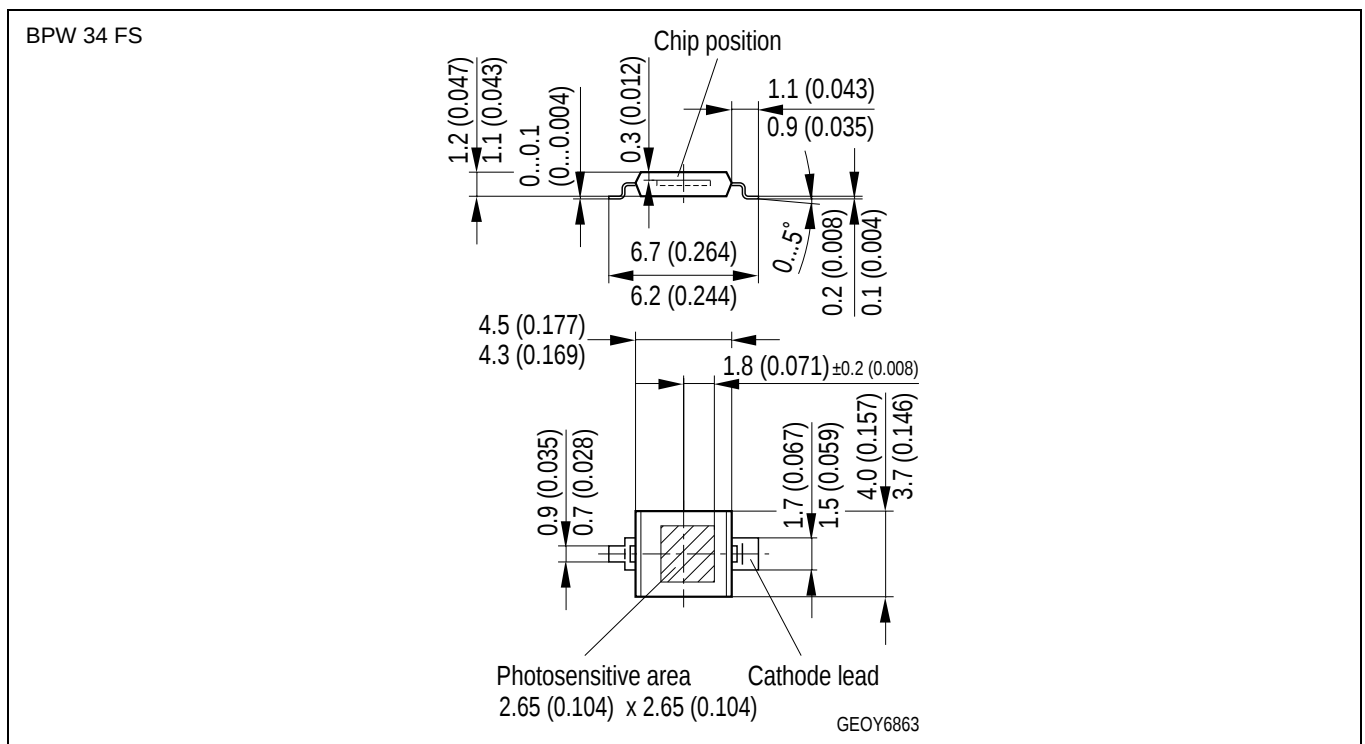
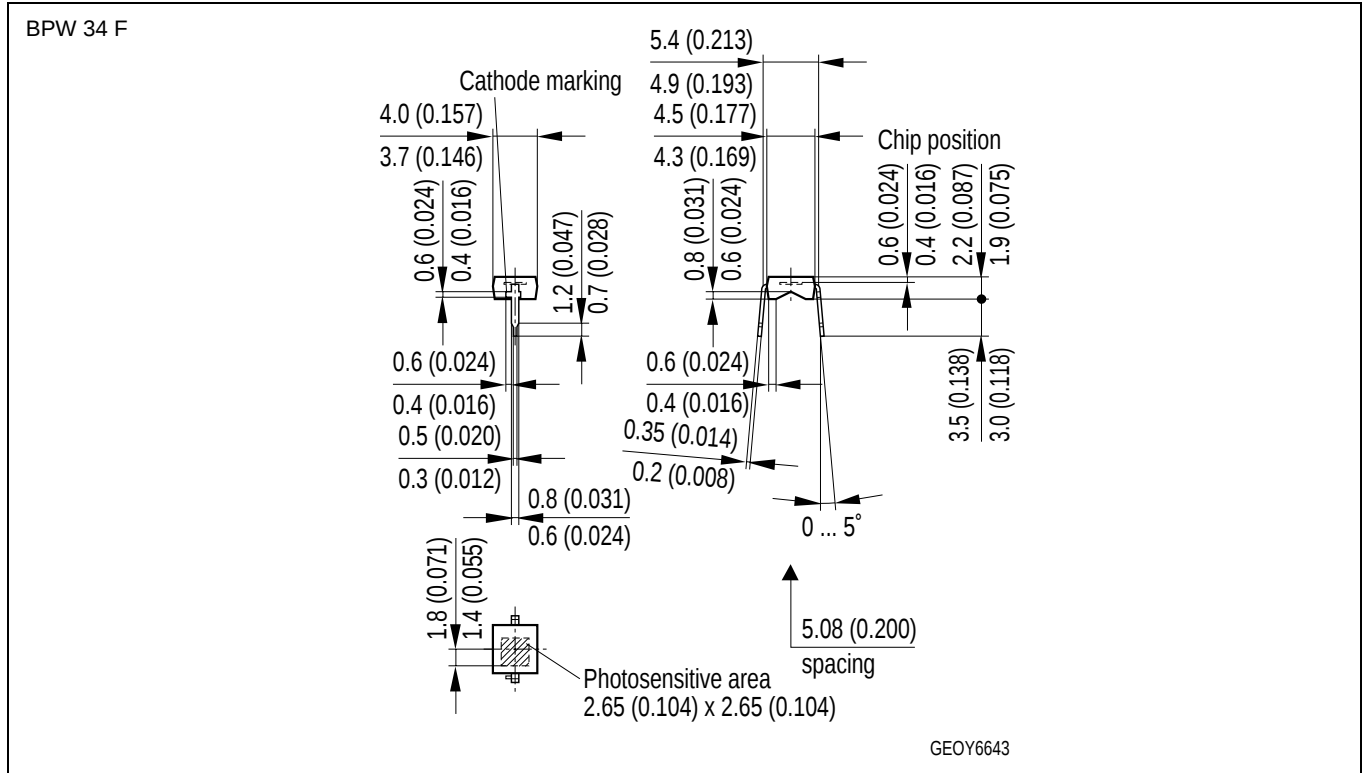
Dark Current
 $I_R = f(T_A), V_R = 10 \text{ V}, E = 0$



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

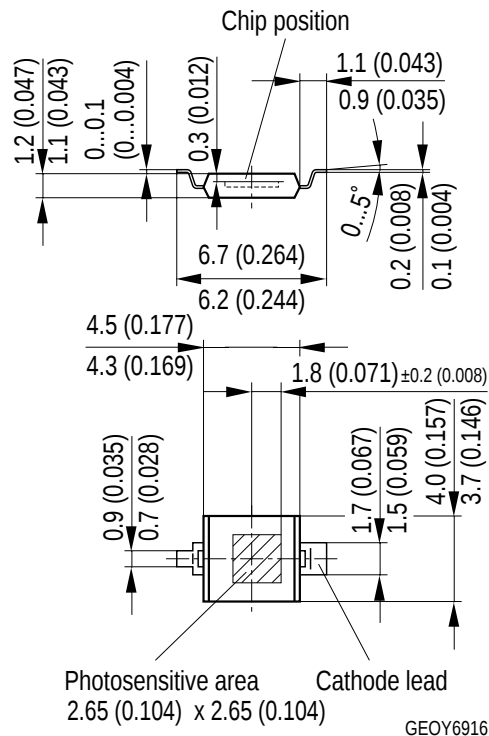


Maßzeichnung
Package Outlines



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

BPW 34 FS (E9087)



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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.

Packing

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 components¹, may only be used in life-support devices or systems² with the express written approval of OSRAM OS.

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.