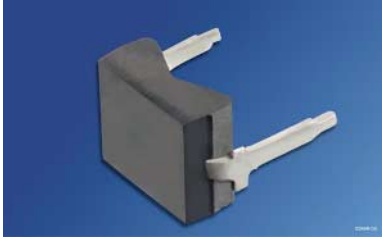
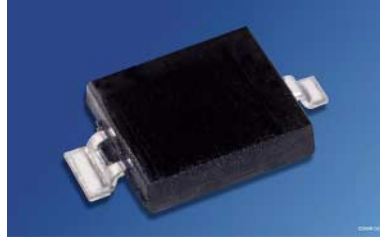


Si-PIN-Fotodiode mit Tageslichtsperrfilter; in SMT und als Reverse Gullwing Silicon PIN Photodiode with Daylight Filter; in SMT and as Reverse Gullwing

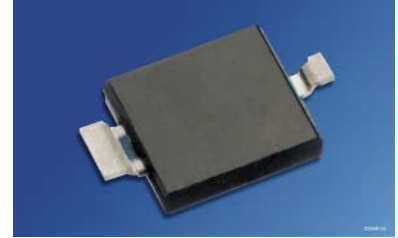
BPW 34 F, BPW 34 FS, BPW 34 FS (E9087)



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 ($T_A = 25 \text{ °C}$, $\lambda = 950 \text{ nm}$)
Charact¹eristics

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

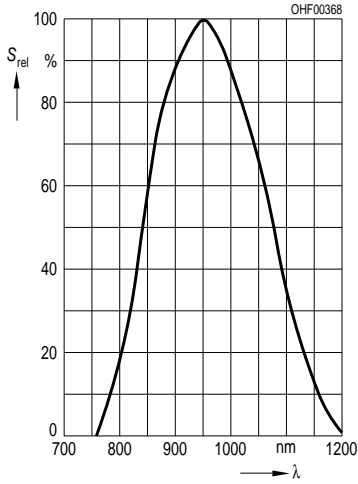
Characteristics (cont'd)

| 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 $R_L = 50\ \Omega$; $V_R = 5\text{ V}$; $\lambda = 850\text{ nm}$; $I_p = 800\ \mu\text{A}$ | 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} | $\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$ |

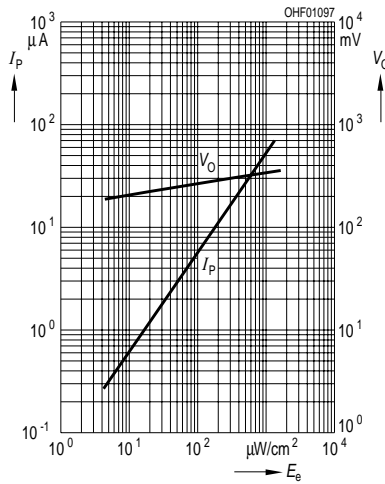
1)

Relative Spectral Sensitivity

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

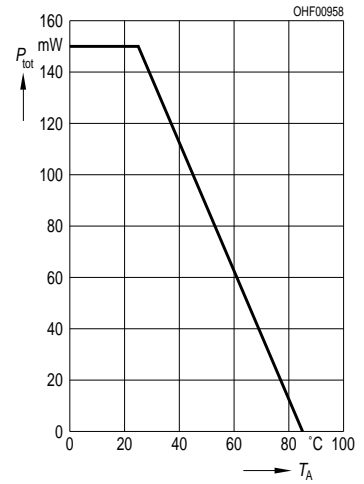


**Photocurrent $I_P = f(E_e)$, $V_R = 5\text{ V}$
Open-Circuit Voltage $V_O = f(E_e)$**



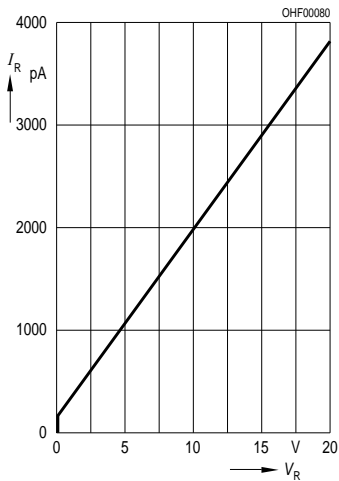
Total Power Dissipation

$P_{tot} = f(T_A)$



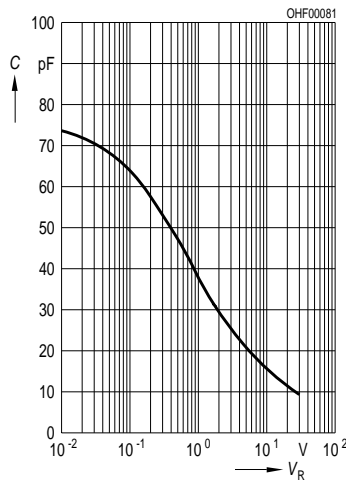
Dark Current

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



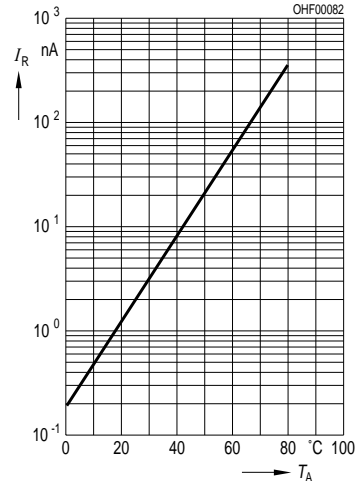
Capacitance

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



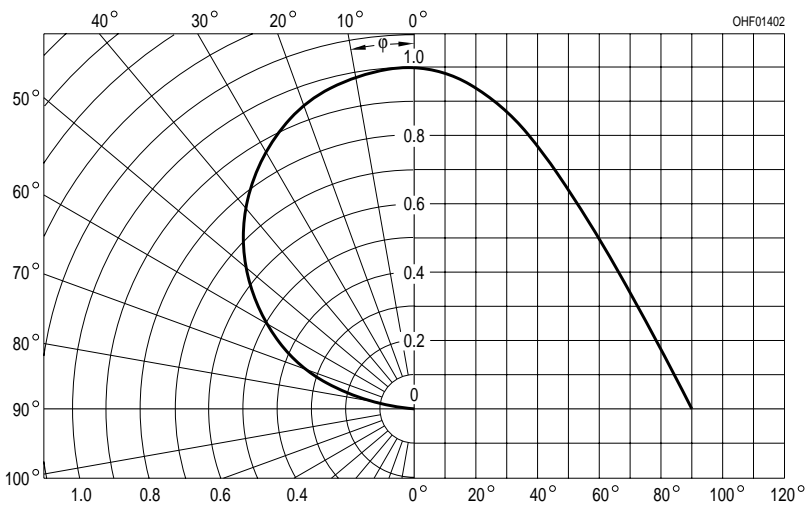
Dark Current

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

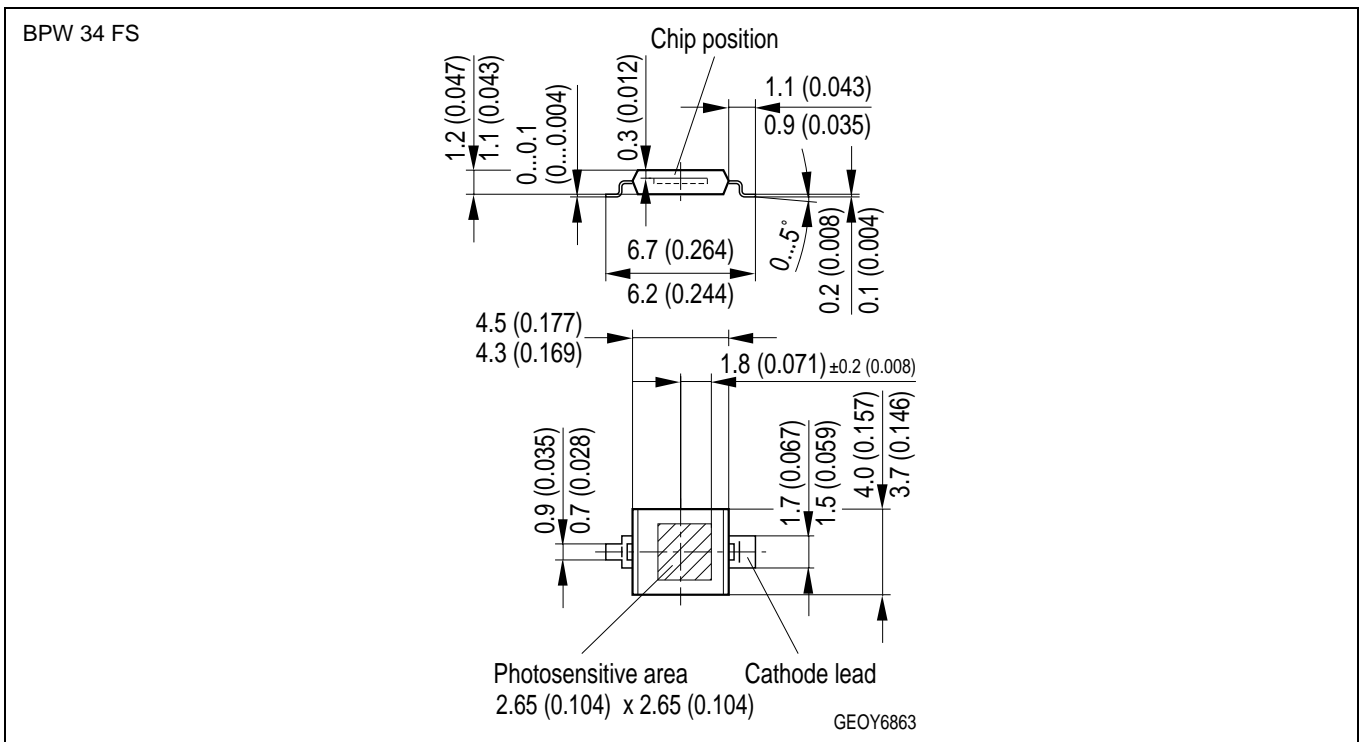
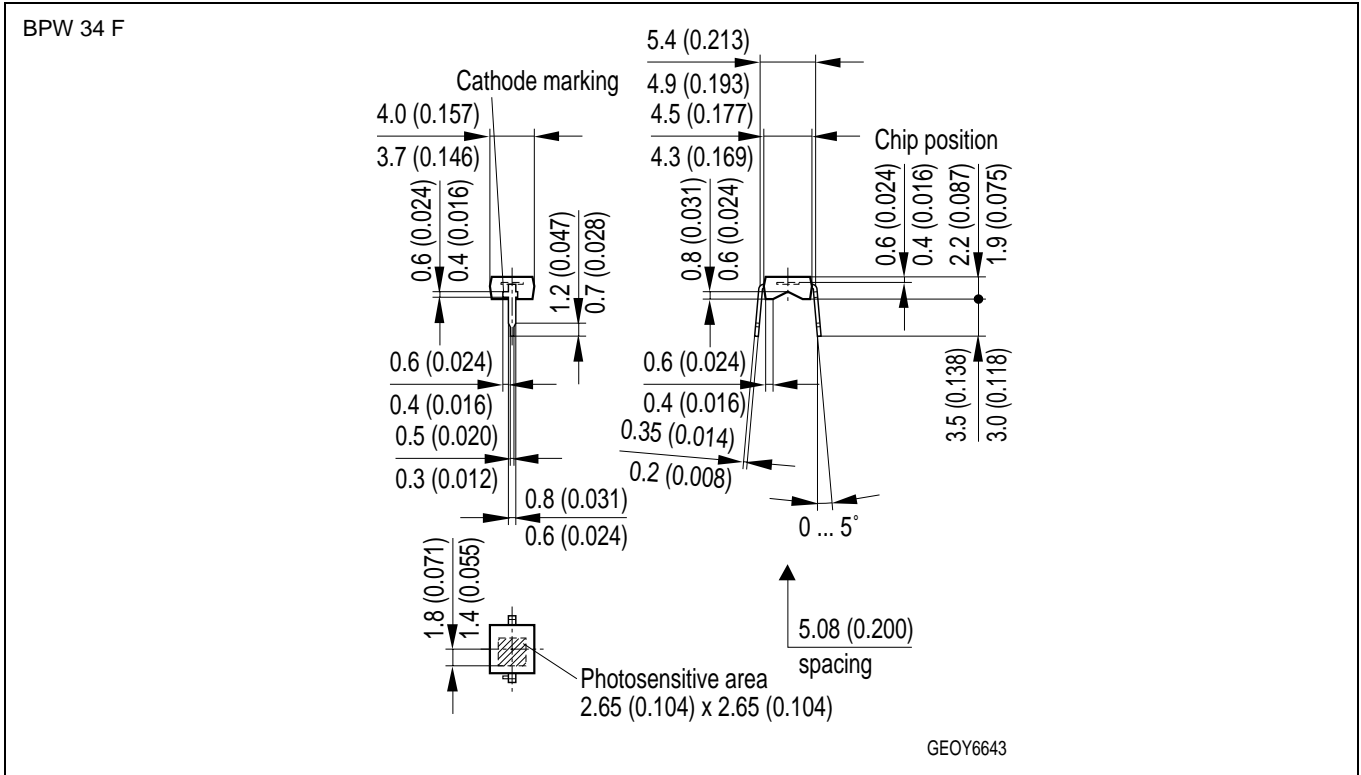


Directional Characteristics

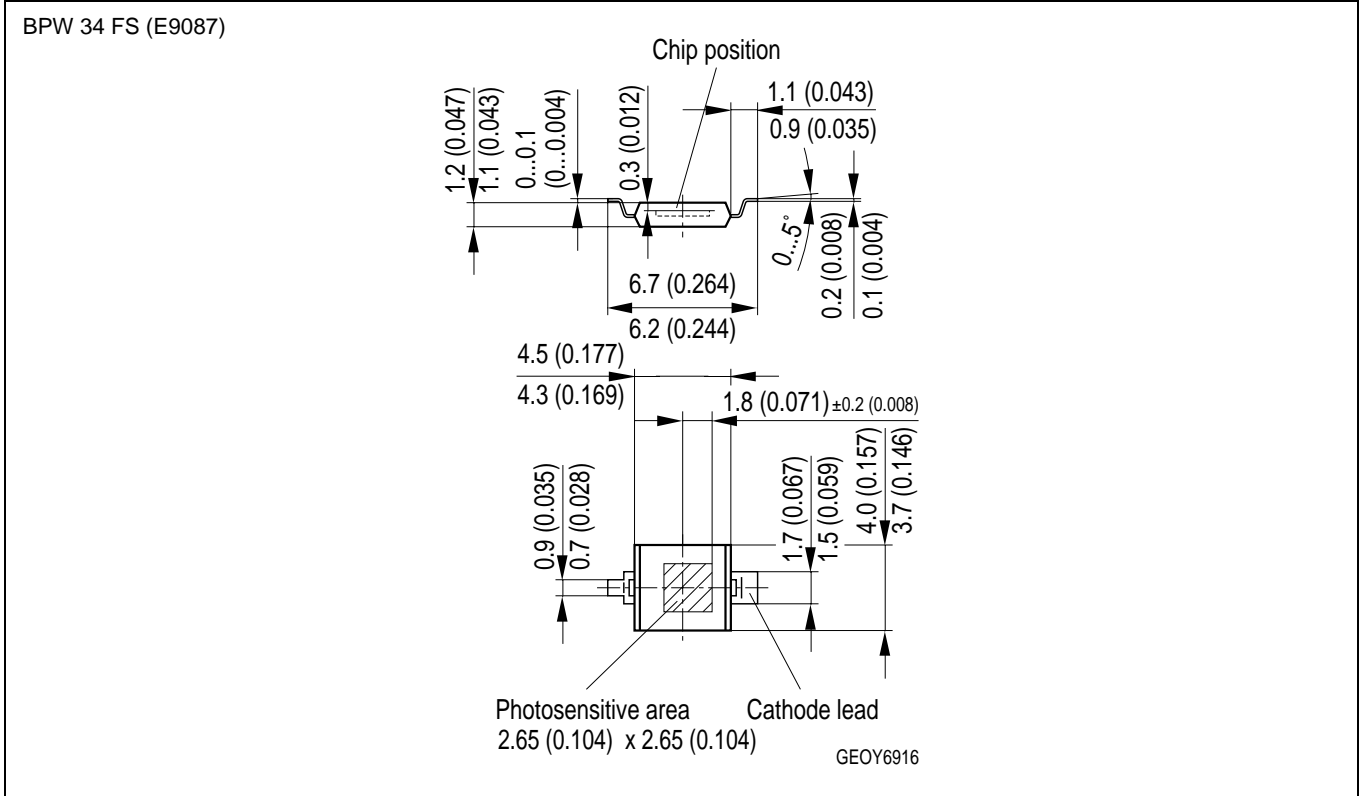
$S_{rel} = f(\phi)$



Maßzeichnung
Package Outlines



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



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

Published by OSRAM Opto Semiconductors GmbH & Co. OHG

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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.