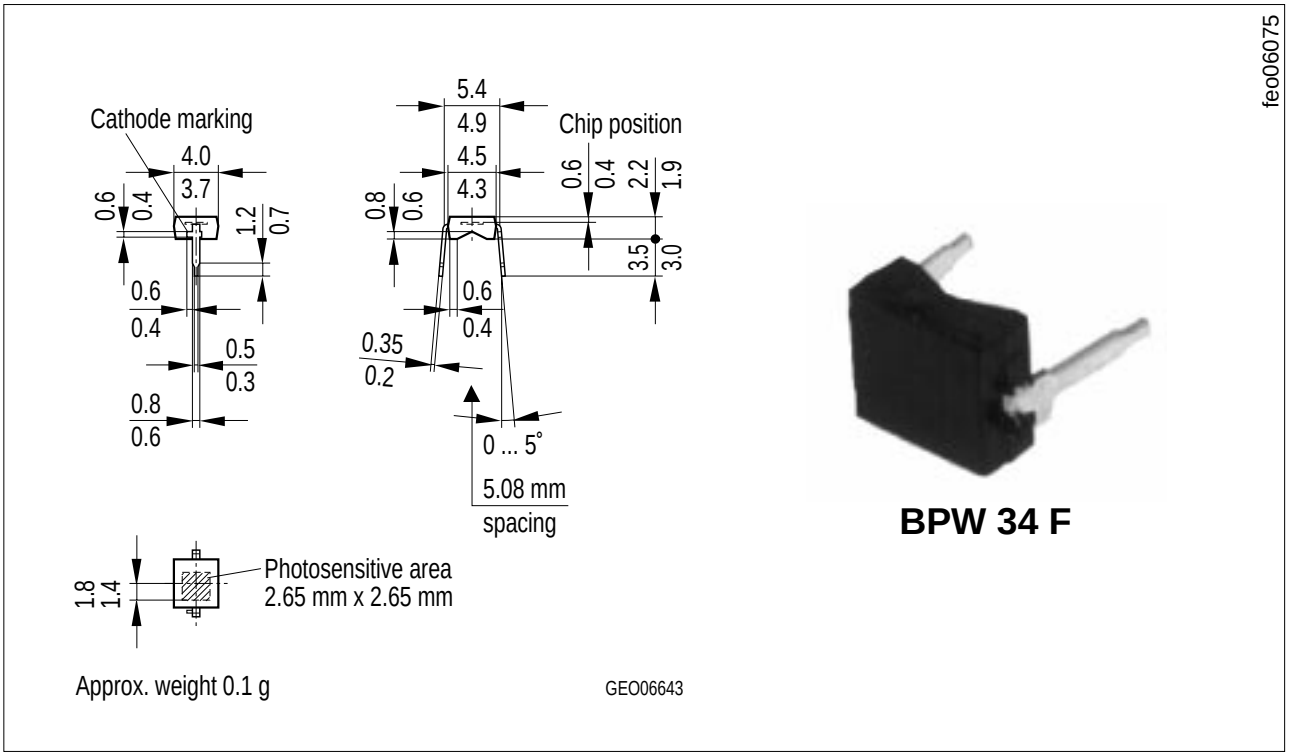
SIEMENS

# Silizium-PIN-Fotodiode mit Tageslichtsperrfilter — BPW 34 F
# NEU: in SMT und als Reverse Gullwing — BPW 34 FS
# Silicon PIN Photodiode with Daylight Filter — BPW 34 FS (E9087)
# NEW: in SMT and as Reverse Gullwing




Maße in mm, wenn nicht anders angegeben/Dimensions in mm, unless otherwise specified.

**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

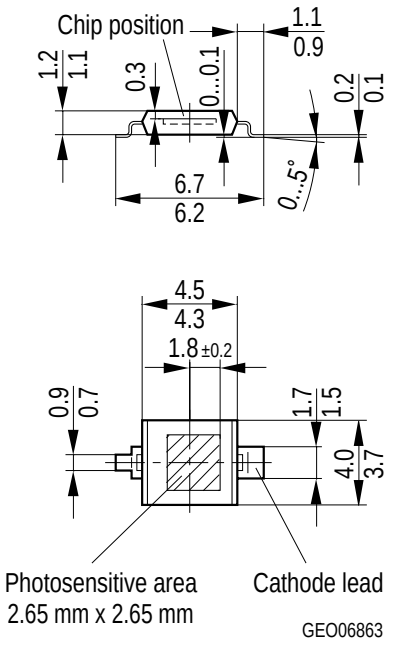
**Features**

- 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**

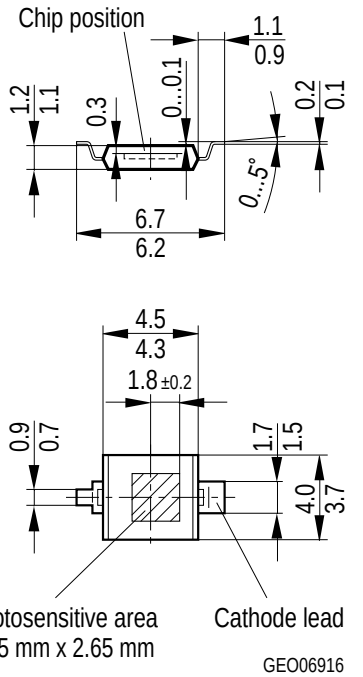
- IR remote control of hi-fi and TV sets, video tape recorders, remote controls of various equipment
- Photointerrupters

feo06861






**BPW 34 FS**






**BPW 34 FAS (E9087)**

feo06916

Maße in mm, wenn nicht anders angegeben/Dimensions in mm, unless otherwise specified.

| **Typ**<br>**Type** | **Bestellnummer**<br>**Ordering Code** |
|---|---|
| BPW 34 F | Q62702-P929 |
| BPW 34 FS | Q62702-P1604 |
| BPW 34 FS (E9087) | Q62702-P1826 |

**Grenzwerte**
**Maximum Ratings**

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

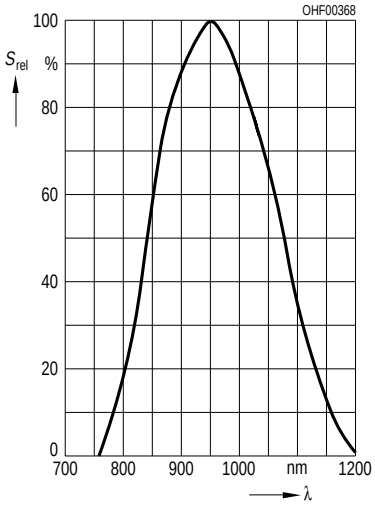
**Kennwerte** ($T_A$ = 25 °C, λ = 950 nm)
**Characteristics**

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

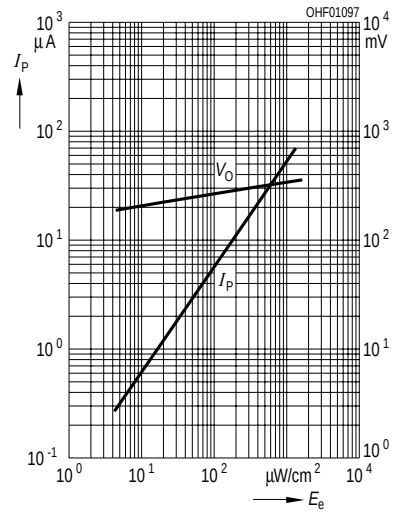
**Kennwerte** ($T_A$ = 25 °C, λ = 950 nm)
**Characteristics** (cont'd)

| **Bezeichnung**<br>**Description** | **Symbol**<br>**Symbol** | **Wert**<br>**Value** | **Einheit**<br>**Unit** |
|---|---|---|---|
| Kurzschlußstrom, $E_e$ = 0.5 mW/cm$^2$<br>Short-circuit current | $I_{SC}$ | 25 | µA |
| Anstiegs- und Abfallzeit des Fotostromes<br>Rise and fall time of the photocurrent<br>$R_L$ = 50 Ω; $V_R$ = 5 V; λ = 850 nm; $I_p$ = 800 µA | $t_r$, $t_f$ | 20 | ns |
| Durchlaßspannung, $I_F$ = 100 mA, $E$ = 0<br>Forward voltage | $V_F$ | 1.3 | V |
| Kapazität, $V_R$ = 0 V, $f$ = 1 MHz, $E$ = 0<br>Capacitance | $C_0$ | 72 | pF |
| Temperaturkoeffizient von $V_O$<br>Temperature coefficient of $V_O$ | $TC_V$ | – 2.6 | mV/K |
| Temperaturkoeffizient von $I_{SC}$<br>Temperature coefficient of $I_{SC}$ | $TC_I$ | 0.18 | %/K |
| Rauschäquivalente Strahlungsleistung<br>Noise equivalent power<br>$V_R$ = 10 V | $NEP$ | $4.3 \times 10^{-14}$ | $\frac{W}{\sqrt{Hz}}$ |
| Nachweisgrenze, $V_R$ = 10 V<br>Detection limit | D* | $6.2 \times 10^{12}$ | $\frac{cm \cdot \sqrt{Hz}}{W}$ |

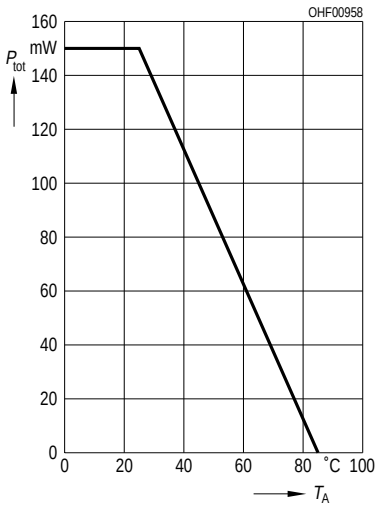
**Relative spectral sensitivity**
$S_{rel} = f\ (\lambda)$



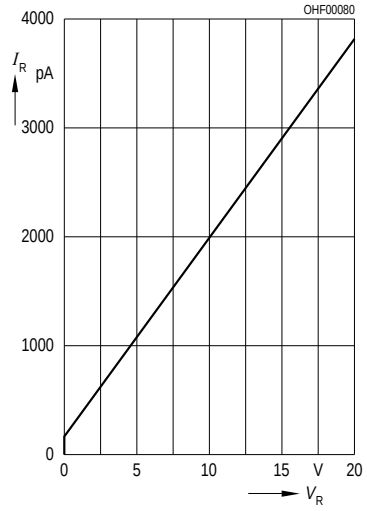

**Photocurrent** $I_P = f\ (E_e)$, $V_R$ = 5 V
**Open-circuit voltage** $V_O = f\ (E_e)$



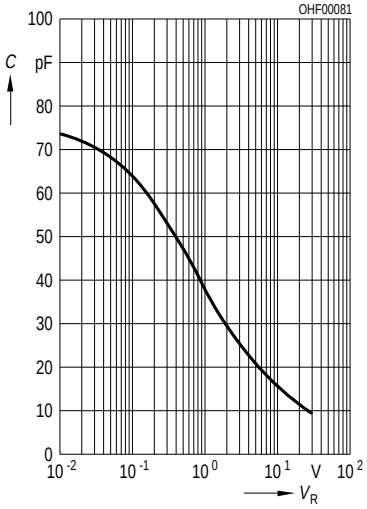

**Total power dissipation**
$P_{tot} = f\ (T_A)$



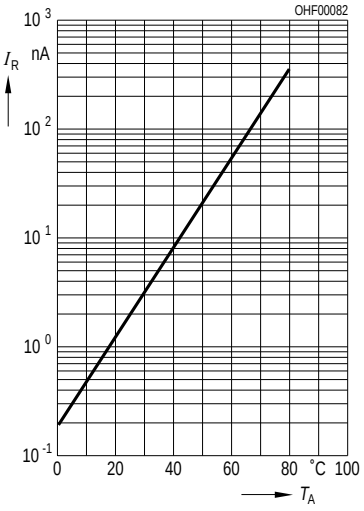

**Dark current**
$I_R = f\ (V_R)$, $E$ = 0




**Capacitance**
$C = f\ (V_R)$, $f$ = 1 MHz, $E$ = 0




**Dark current**
$I_R = f\ (T_A)$, $V_R$ = 10 V, $E$ = 0




**Directional characteristics** $S_{rel} = f\ (\varphi)$

