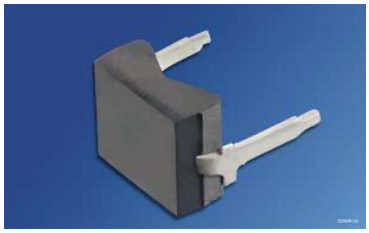
Si-PIN-Fotodiode mit Tageslichtsperrfilter; in SMT und als Reverse Gullwing
Silicon PIN Photodiode with Daylight Filter; in SMT and as Reverse Gullwing

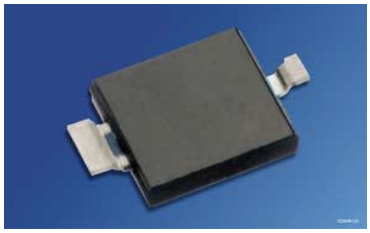
Lead (Pb) Free Product - RoHS Compliant

BPW 34 FA, BPW 34 FAS, BPW 34 FASR



BPW 34 FA

BPW 34 FAS



BPW 34 FASR

Wesentliche Merkmale

- Speziell geeignet für den Wellenlängenbereich von 730 nm bis 1100 nm
- Kurze Schaltzeit (typ. 20 ns)
- DIL-Plastikbauform mit hoher Packungsdichte
- BPW 34 FAS / FASR: geeignet für Reflow Löten

Features

- Especially suitable for the wavelength range of 730 nm to 1100 nm
- Short switching time (typ. 20 ns)
- DIL plastic package with high packing density
- BPW 34 FAS / FASR: Suitable for reflow soldering

Anwendungen

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

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 mW/cm^2, V_R = 5 V, λ = 870 nm **Photocurrent** Ip (µA)
BPW 34 FA	Q62702P1129	50 (≥40)
BPW 34 FAS	Q65110A3121	50 (≥40)
BPW 34 FASR	Q65110A2699	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 min)	16 32	V V
Verlustleistung, T_A = 25 °C Total power dissipation	P_{tot}	150	mW

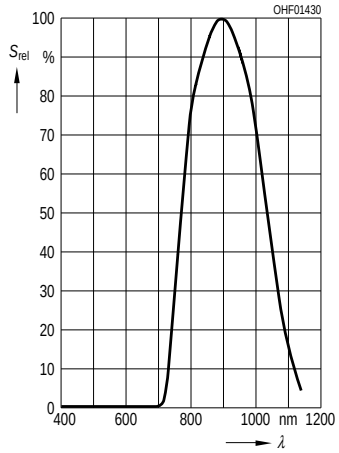
Kennwerte (T_A = 25 °C, λ = 870 nm)
Characteristics

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Fotostrom Photocurrent V_R = 5 V, E_e=1 mW/cm^2	I_p	50 (≥40)	µA
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\ max}$	880	nm
Spektraler Bereich der Fotoempfindlichkeit S = 10% von S_{max} Spectral range of sensitivity S = 10% of S_{max}	λ	730 … 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	mm × mm
Halbwinkel Half angle	φ	± 60	Grad deg.
Dunkelstrom, V_R = 10 V Dark current	I_R	2 (≤ 30)	nA
Spektrale Fotoempfindlichkeit Spectral sensitivity	S_λ	0.65	A/W
Quantenausbeute Quantum yield	η	0.93	Electrons Photon
Leerlaufspannung, E_e = 0.5 mW/cm^2 Open-circuit voltage	V_O	320 (≥ 250)	mV

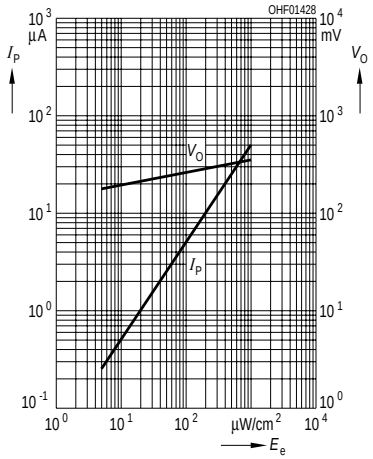
Kennwerte (T_A = 25 °C, λ = 870 nm)
Characteristics (cont'd)

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Kurzschlussstrom, E_e = 0.5 mW/cm^2 Short-circuit current	I_{SC}	23	µA
Anstiegs- und Abfallzeit des Fotostroms Rise and fall time of the photocurrent 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 Forward voltage	V_F	1.3	V
Kapazität, V_R = 0 V, f = 1 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	0.03	%/K
Rauschäquivalente Strahlungsleistung Noise equivalent power V_R = 10 V	NEP	3.9×10^{-14}	$\frac{W}{\sqrt{Hz}}$
Nachweisgrenze, V_R = 10 V, Detection limit	D*	6.8×10^{12}	$\frac{cm \times \sqrt{Hz}}{W}$

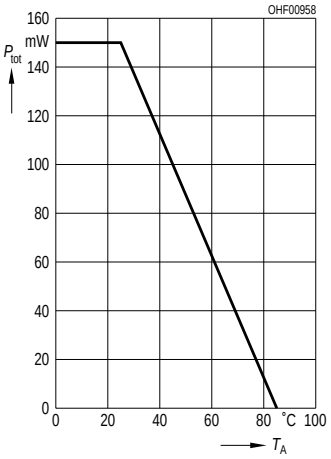
Relative Spectral Sensitivity
$S_{rel} = f(\lambda)$



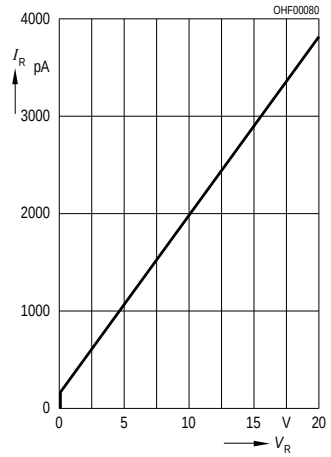
Photocurrent $I_P = f(E_e)$, V_R = 5 V
Open-Circuit Voltage $V_O = f(E_e)$



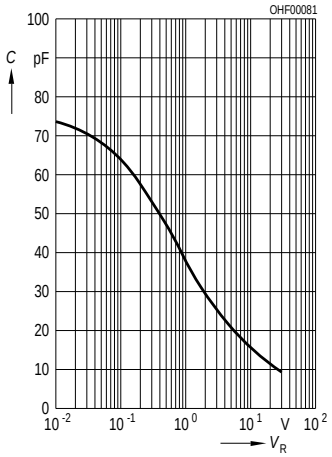
Total Power Dissipation
$P_{tot} = f(T_A)$



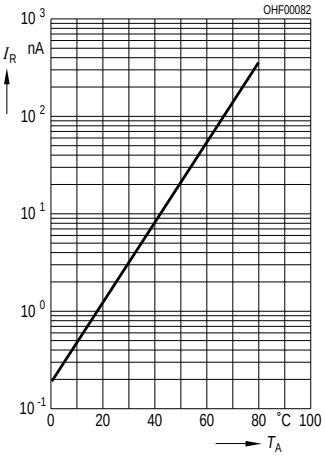
Dark Current
$I_R = f(V_R)$, E = 0



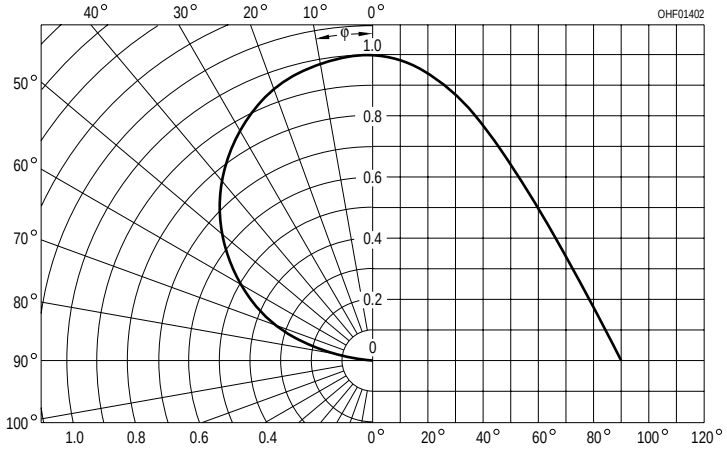
Capacitance
$C = f(V_R)$, f = 1 MHz, E = 0



Dark Current
$I_R = f(T_A)$, V_R = 10 V, E = 0

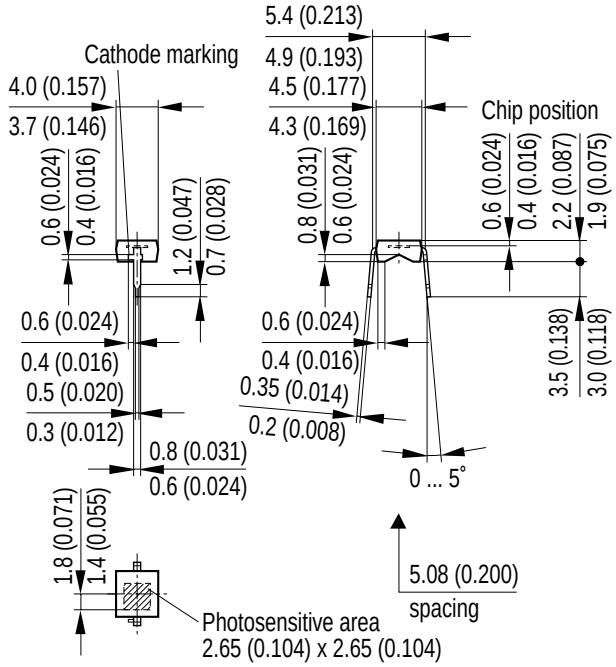


Directional Characteristics
$S_{rel} = f(\varphi)$

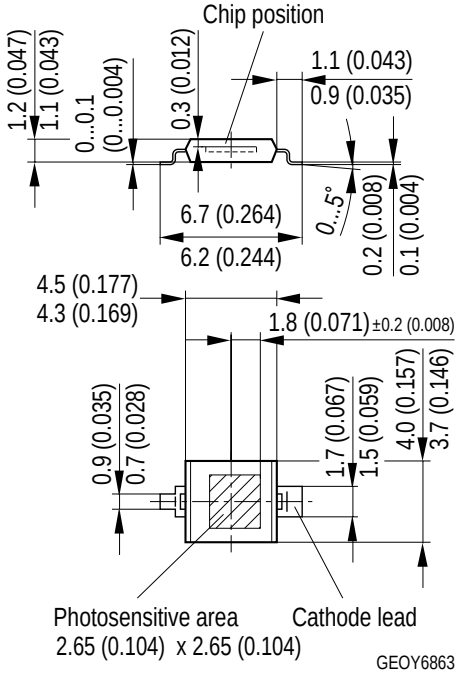


Maßzeichnung
Package Outlines

BPW 34 FA

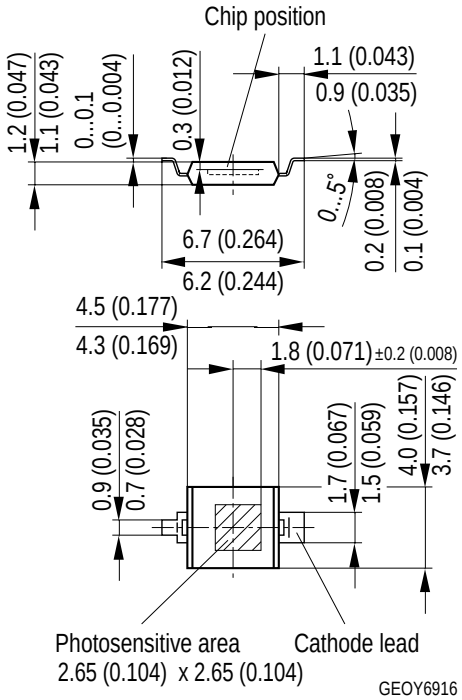


BPW 34 FAS



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

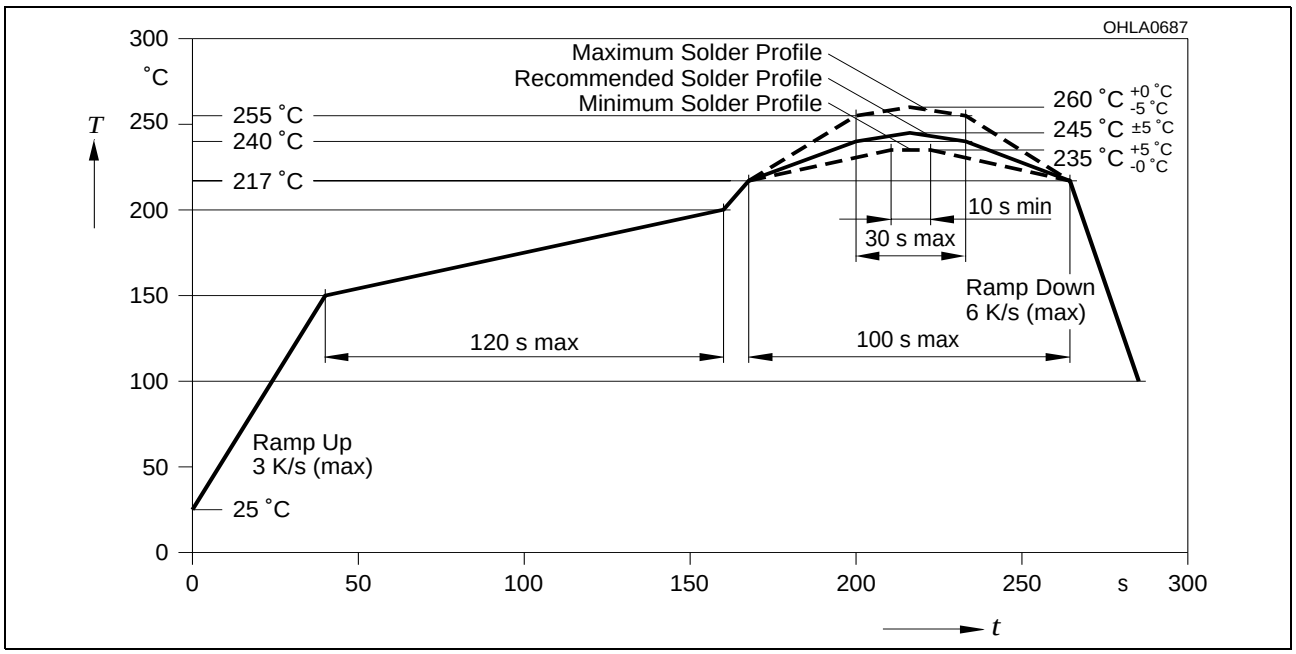
BPW 34 FASR



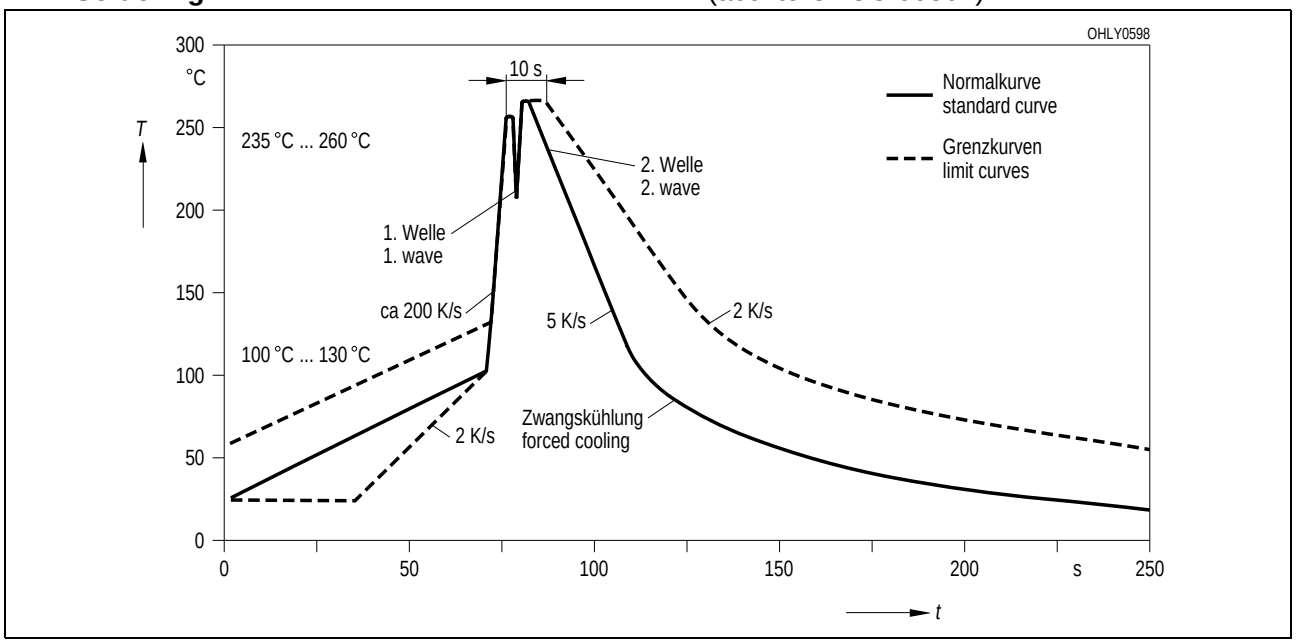
Maße in mm (inch) / Dimensions in mm (inch).

Lötbedingungen **BPW 34 FAS** Vorbehandlung nach JEDEC Level 4
Soldering Conditions **BPW 34 FASR** Preconditioning acc. to JEDEC Level 4

Reflow Lötprofil für bleifreies Löten (nach J-STD-020C)
Reflow Soldering Profile for lead free soldering (acc. to J-STD-020C)



Wellenlöten (TTW) **BPW 34 FA** (nach CECC 00802)
TTW Soldering (acc. to CECC 00802)



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