

Silizium-Pin-Fotodiode mit Tageslichtsperrfilter

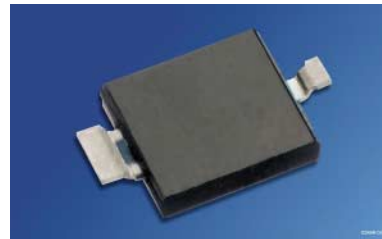
Silicon Pin Photodiode with Daylight Filter

Lead (Pb) Free Product - RoHS Compliant

BP 104 FAS BP 104 FASR



BP 104 FAS



BP 104 FASR

Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 730 nm... 1100nm
- Kurze Schaltzeit (typ. 20 ns)
- SMT-fähig

Anwendungen

- IR-Fernsteuerung von Fernseh- und Rundfunkgeräten, Videorecordern, Lichtdimmern, Gerätefernsteuerungen
- Lichtschranken

Features

- Especially suitable for applications from 730 nm... 1100nm
- Short switching time (typ. 20 ns)
- Suitable for SMT

Applications

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

Typ Type	Bestellnummer Ordering Code	Fotostrom, $E_e=1 \text{ mW/cm}^2$, $V_R = 5 \text{ V}$, $\lambda = 880 \text{ nm}$ Photocurrent $I_p (\mu\text{A})$
BP 104 FAS	Q65110A2672	34 (≥ 25)
BP 104 FASR	Q65110A4263	34 (≥ 25)

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	20	V
Verlustleistung, $T_A = 25\text{ °C}$ Total power dissipation	P_{tot}	150	mW

Kennwerte ($T_A = 25\text{ °C}$, $\lambda = 880\text{ nm}$)
Characteristics

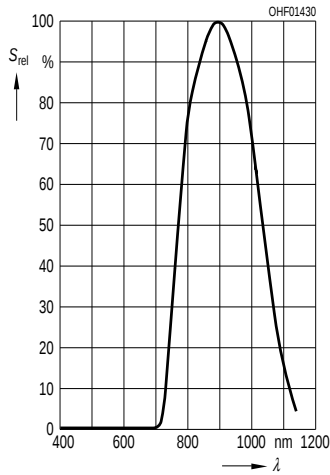
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Fotostrom Photocurrent $V_R = 5\text{ V}$, $E_e = 1\text{ mW/cm}^2$	I_P	34 (≥ 25)	μA
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\text{ max}}$	880	nm
Spektraler Bereich der Fotoempfindlichkeit $S = 10\text{ \%}$ von S_{max} Spectral range of sensitivity $S = 10\text{ \%}$ of S_{max}	λ	730 ... 1100	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	4.84	mm^2
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	0.65	A/W
Quantenausbeute Quantum yield	η	0.90	<u>Electrons</u> Photon
Leerlaufspannung, $E_e = 0.5\text{ mW/cm}^2$ Open-circuit voltage	V_O	330 (≥ 250)	mV
Kurzschlussstrom, $E_e = 0.5\text{ mW/cm}^2$ Short-circuit current	I_{SC}	16	μA

Kennwerte ($T_A = 25\text{ }^{\circ}\text{C}$, $\lambda = 880\text{ nm}$)

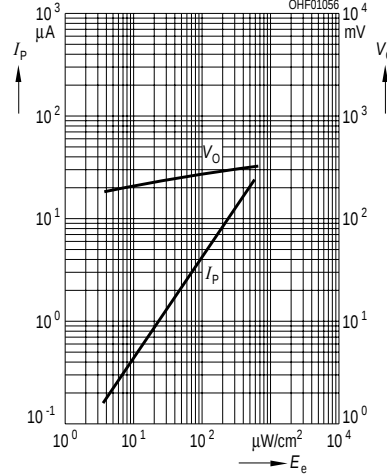
Characteristics (cont'd)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
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	48	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	3.6×10^{-14}	$\frac{\text{W}}{\sqrt{\text{Hz}}}$
Nachweisgrenze, $V_R = 10\text{ V}$ Detection limit	D^*	6.1×10^{12}	$\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$

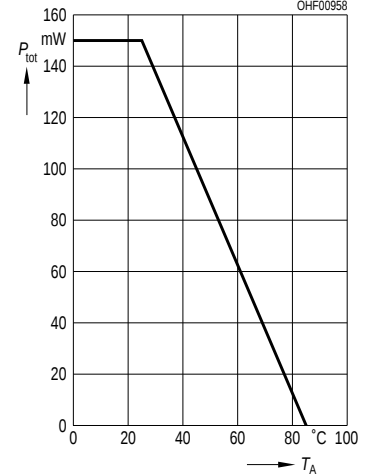
Relative Spectral Sensitivity
 $S_{\text{rel}} = f(\lambda)$



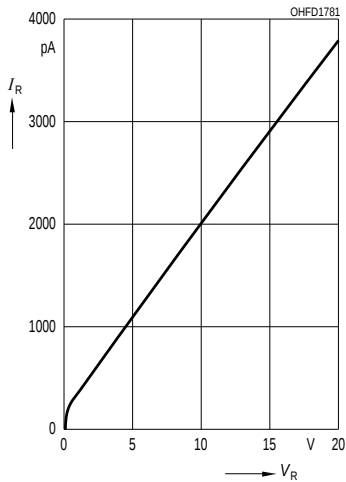
Photocurrent $I_P = f(E_e)$, $V_R = 5 \text{ V}$
Open-Circuit Voltage $V_O = f(E_e)$



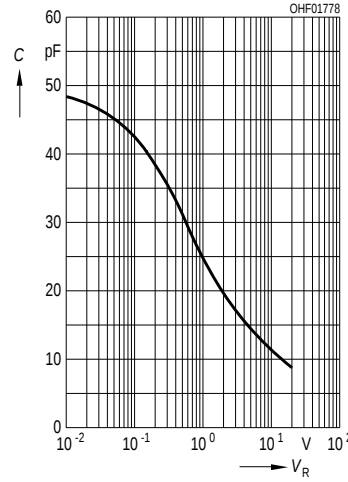
Total Power Dissipation
 $P_{\text{tot}} = f(T_A)$



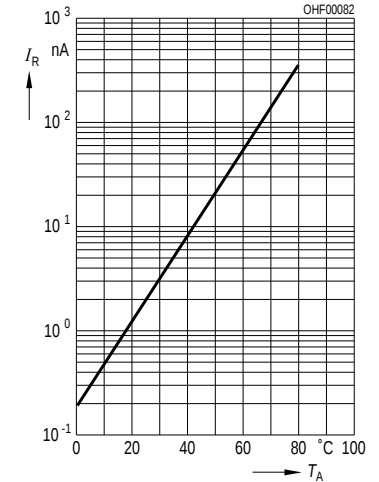
Dark Current
 $I_R = f(V_R), E = 0$



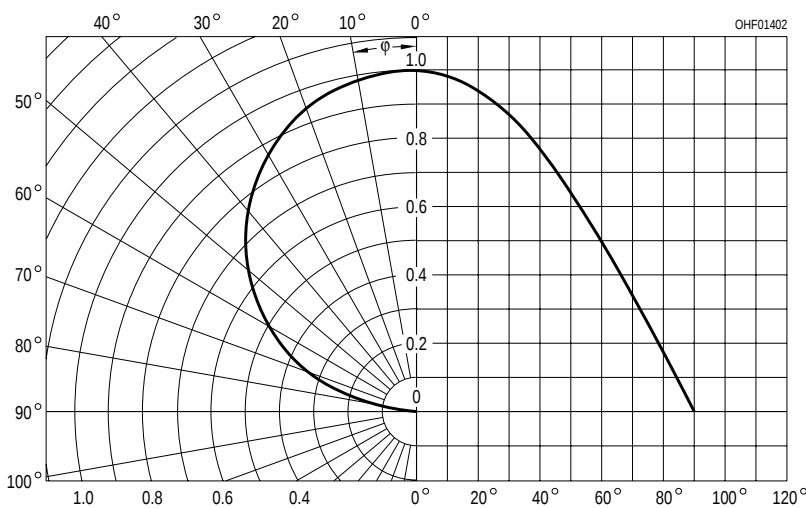
Capacitance
 $C = f(V_R), f = 1 \text{ MHz}, E = 0$



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

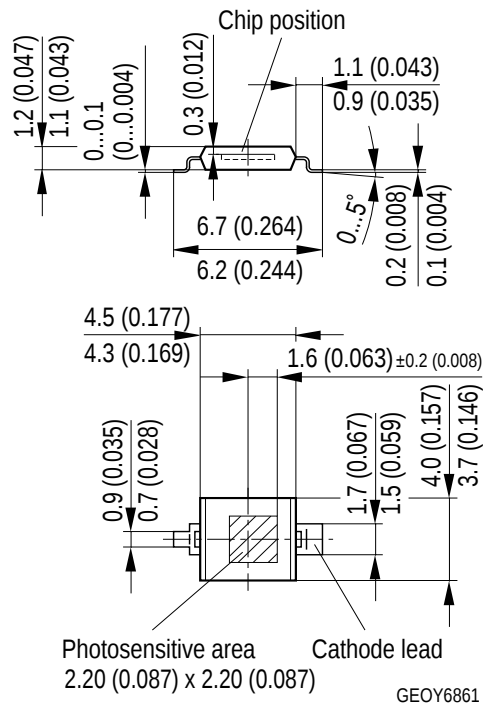


Directional Characteristics
 $S_{\text{rel}} = f(\varphi)$

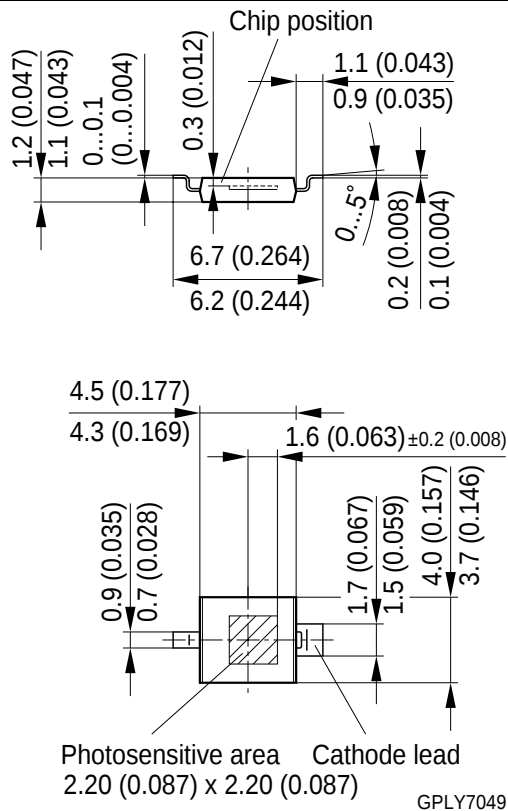


Maßzeichnung
Package Outlines

BP 104 FAS



BP 104 FASR



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

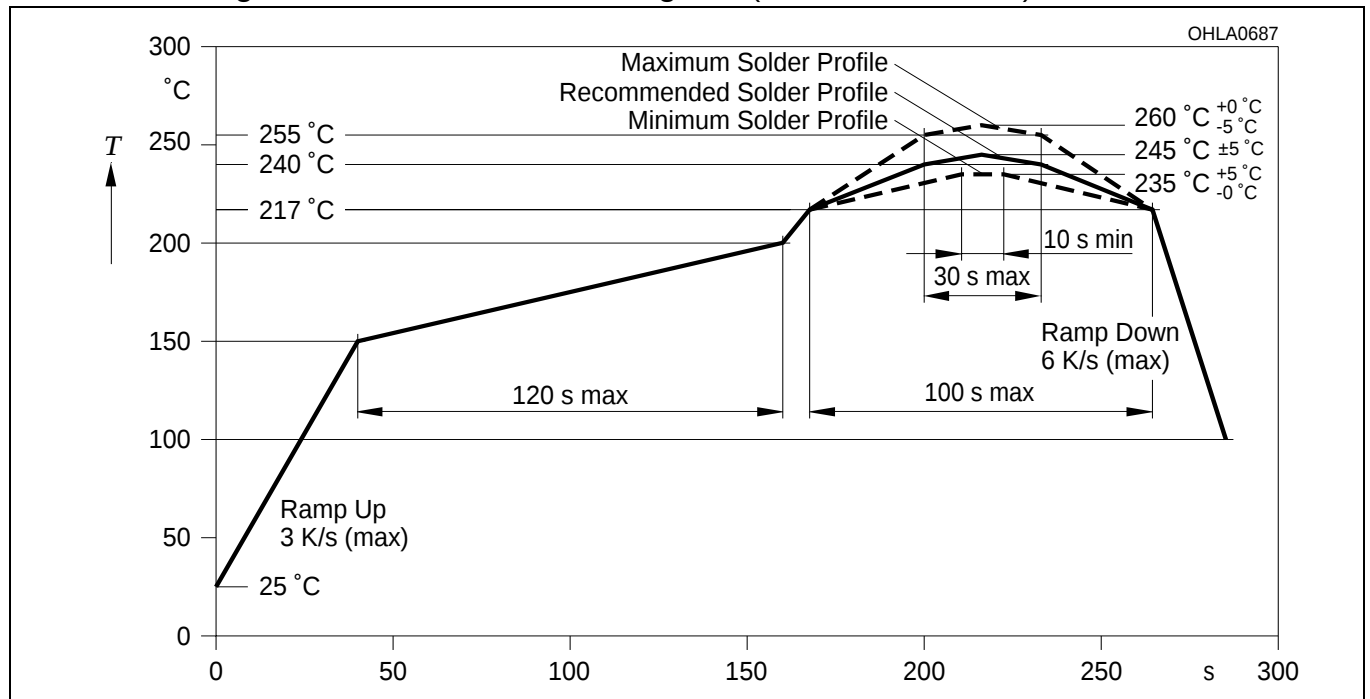
Lötbedingungen**Soldering Conditions****Reflow Lötprofil für bleifreies Löten****Reflow Soldering Profile for lead free soldering**

Vorbehandlung nach JEDEC Level 4

Preconditioning acc. to JEDEC Level 4

(nach J-STD-020C)

(acc. to J-STD-020C)



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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.

EU RoHS and China RoHS compliant product



此产品符合欧盟 RoHS 指令的要求；

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