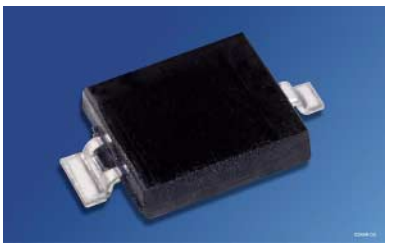
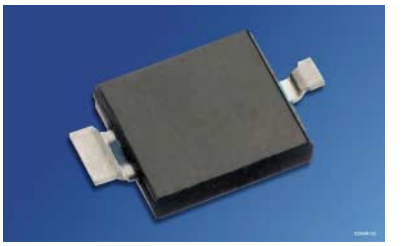
Silizium-Pin-Fotodiode mit Tageslichtsperrfilter
Silicon Pin Photodiode with Daylight Filter
Lead (Pb) Free Product - RoHS Compliant

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

Features

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

Anwendungen

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

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 mW/cm^2, V_R = 5 V, λ = 880 nm **Photocurrent** Ip (µA)
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 °C Total power dissipation	P_{tot}	150	mW

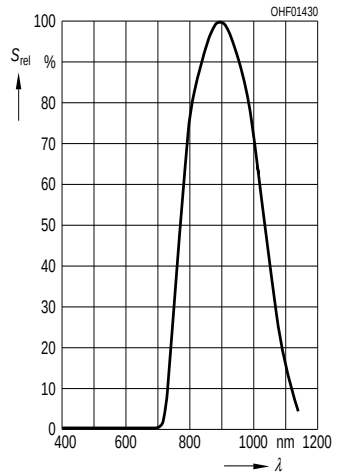
Kennwerte (T_A = 25 °C, λ = 880 nm)
Characteristics

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Fotostrom Photocurrent V_R = 5 V, E_e=1 mW/cm^2	I_P	34 (≥ 25)	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	4.84	mm^2
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	0.90	Electrons Photon
Leerlaufspannung, E_e = 0.5 mW/cm^2 Open-circuit voltage	V_O	330 (≥ 250)	mV
Kurzschlussstrom, E_e = 0.5 mW/cm^2 Short-circuit current	I_{SC}	16	µA

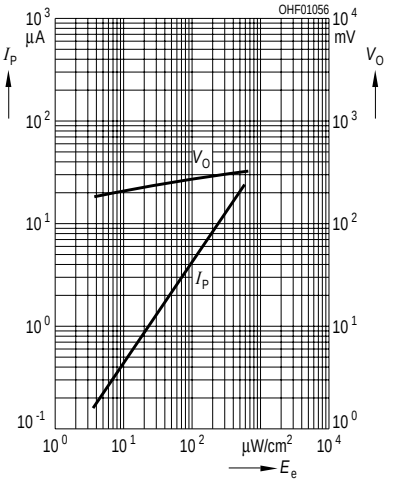
Kennwerte (T_A = 25 °C, λ = 880 nm)
Characteristics (cont'd)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Anstiegs- und Abfallzeit des Fotostromes Rise and fall time of the photocurrent R_L = 50 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	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 V	NEP	3.6×10^{-14}	$\frac{W}{\sqrt{Hz}}$
Nachweisgrenze, V_R = 10 V Detection limit	D*	6.1×10^{12}	$\frac{cm \times \sqrt{Hz}}{W}$

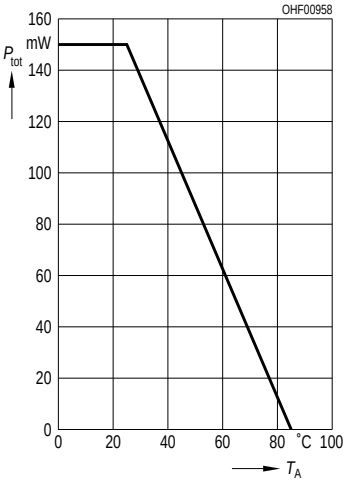
Relative Spectral Sensitivity
$S_{rel} = f(\lambda)$



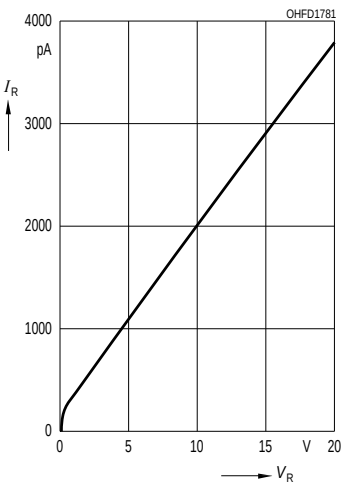
Photocurrent $I_P = f(E_e)$, V_R = 5 V
Open-Circuit Voltage $V_O = f(E_e)$



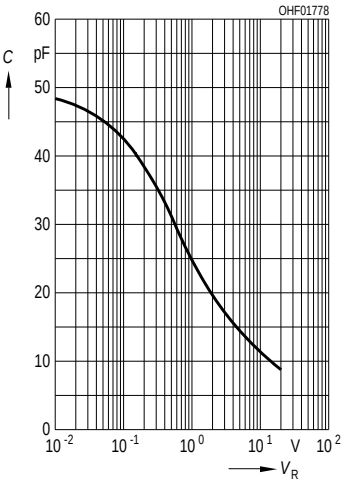
Total Power Dissipation
$P_{tot} = f(T_A)$



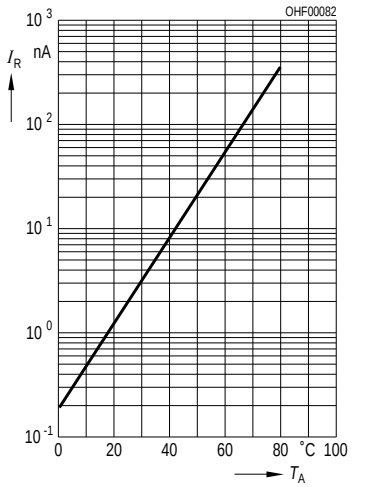
Dark Current
$I_R = f(V_R)$, E = 0



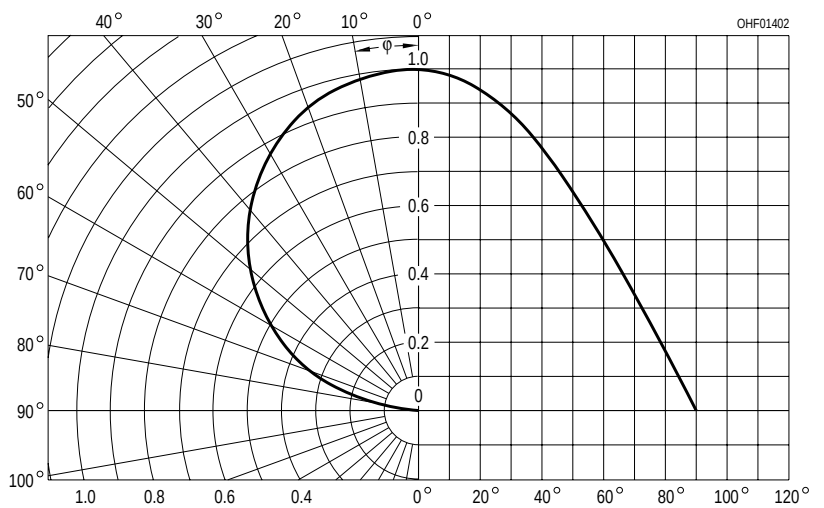
Capacitance
$C = f(V_R)$, f = 1 MHz, E = 0



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

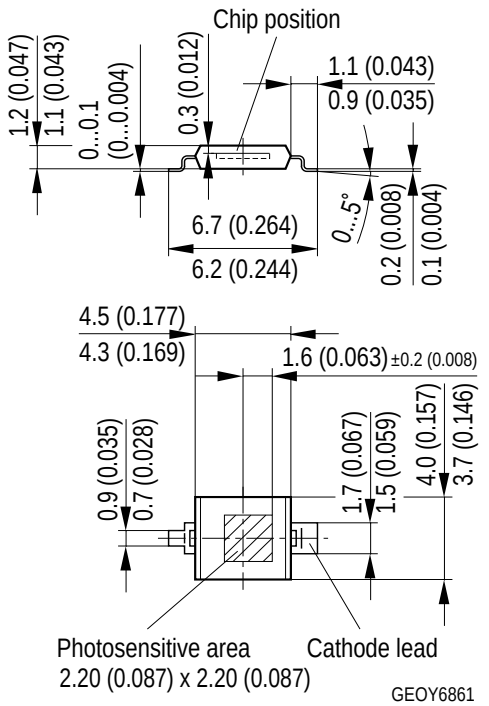


Directional Characteristics
$S_{rel} = f(\varphi)$

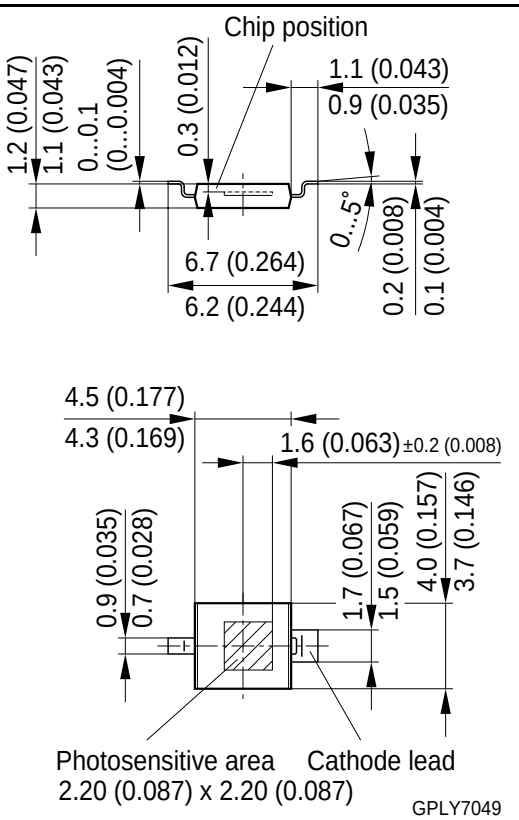


Maßzeichnung
Package Outlines

BP 104 FAS



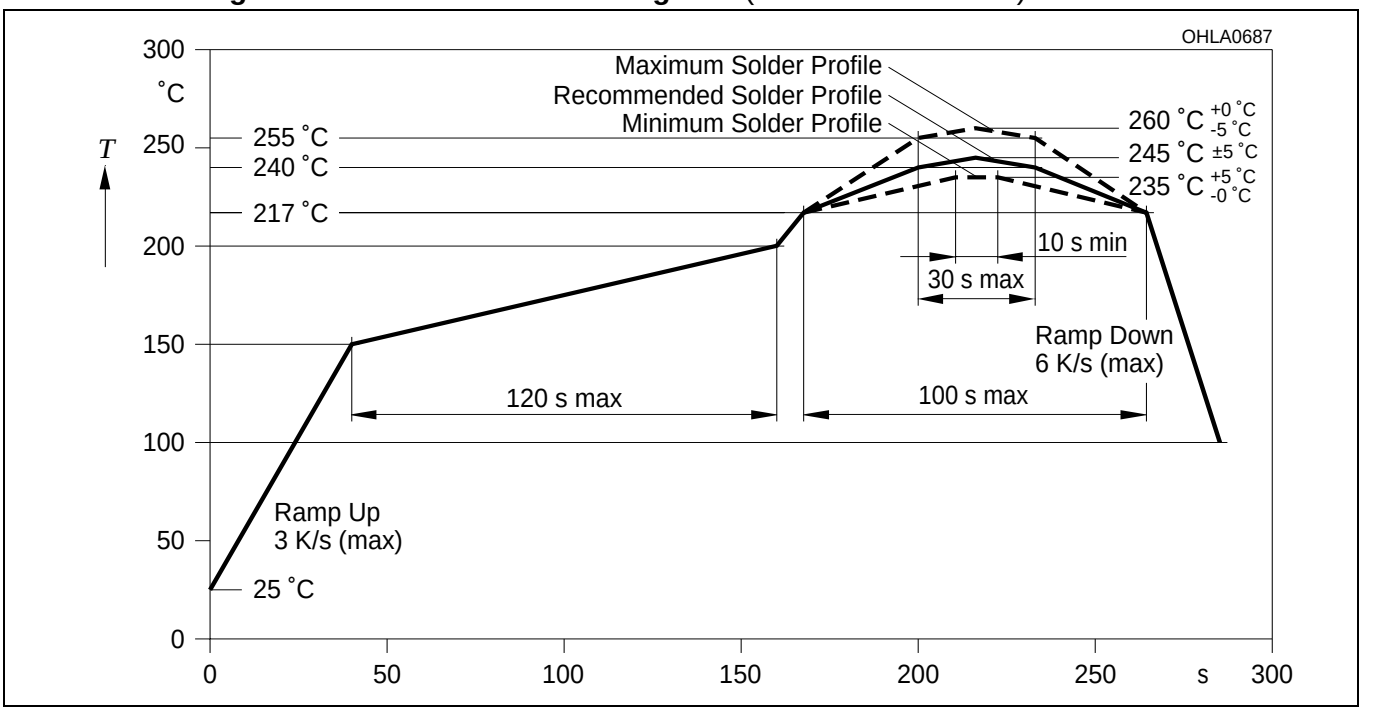
BP 104 FASR



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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