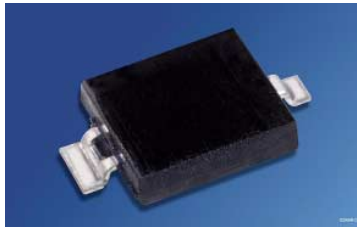
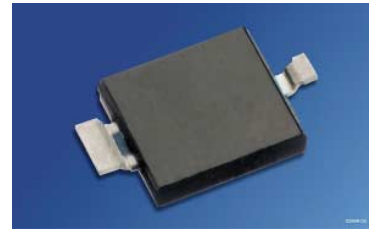


Silizium-Pin-Fotodiode mit Tageslichtsperrfilter
Silicon Pin Photodiode with Daylight Filter
Lead (Pb) Free Product - RoHS Compliant

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

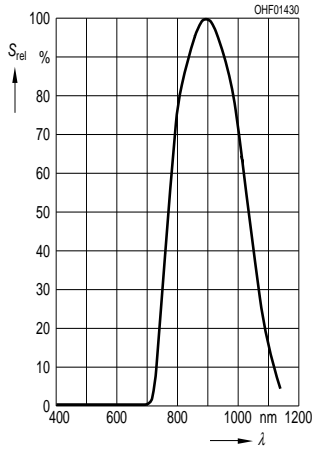
Kennwerte ($T_A = 25\text{ °C}$, $\lambda = 880\text{ nm}$)
Characteristics

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

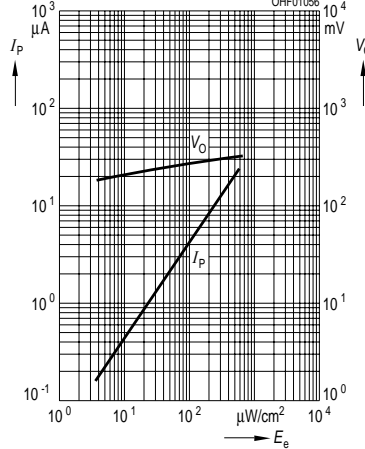
Kennwerte ($T_A = 25\text{ °C}$, $\lambda = 880\text{ nm}$)
Characteristics (cont'd)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Anstiegs- und Abfallzeit des Fotostromes Rise and fall time of the photocurrent $R_L = 50\ \Omega$; $V_R = 5\text{ V}$; $\lambda = 850\text{ nm}$; $I_p = 800\ \mu\text{A}$	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	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}	$\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$

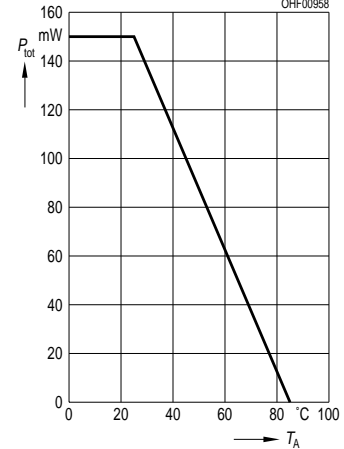
Relative Spectral Sensitivity
 $S_{rel} = f(\lambda)$



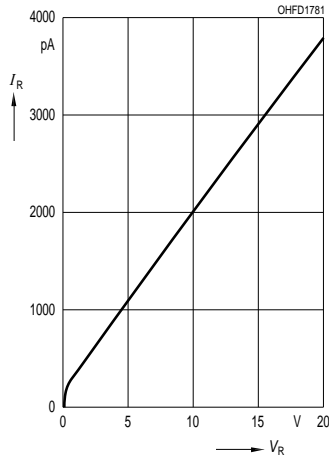
Photocurrent $I_P = f(E_e)$, $V_R = 5 V$
Open-Circuit Voltage $V_O = f(E_e)$



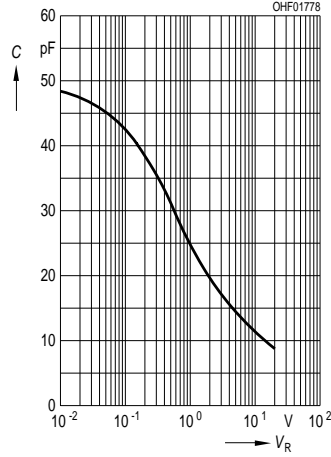
Total Power Dissipation
 $P_{tot} = f(T_A)$



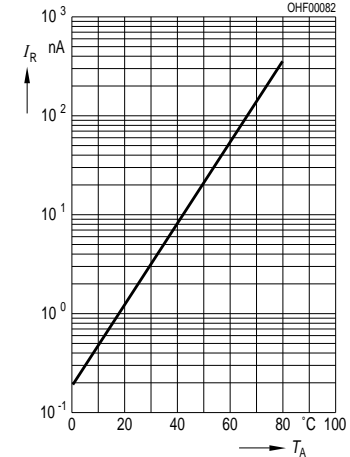
Dark Current
 $I_R = f(V_R), E = 0$



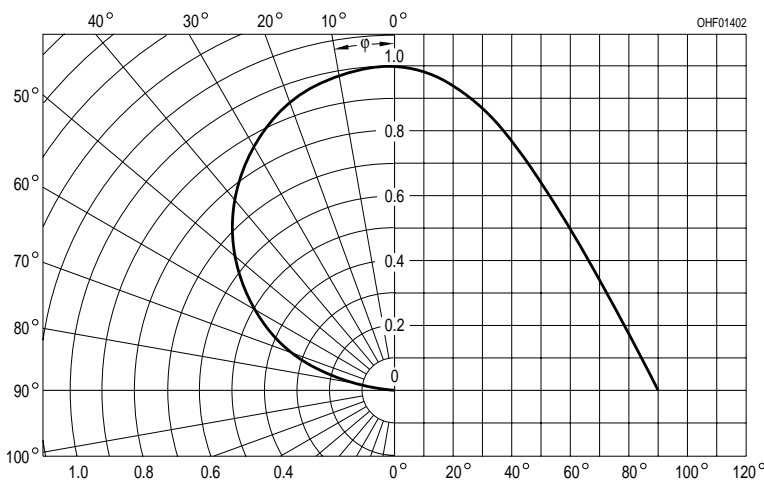
Capacitance
 $C = f(V_R), f = 1 MHz, E = 0$



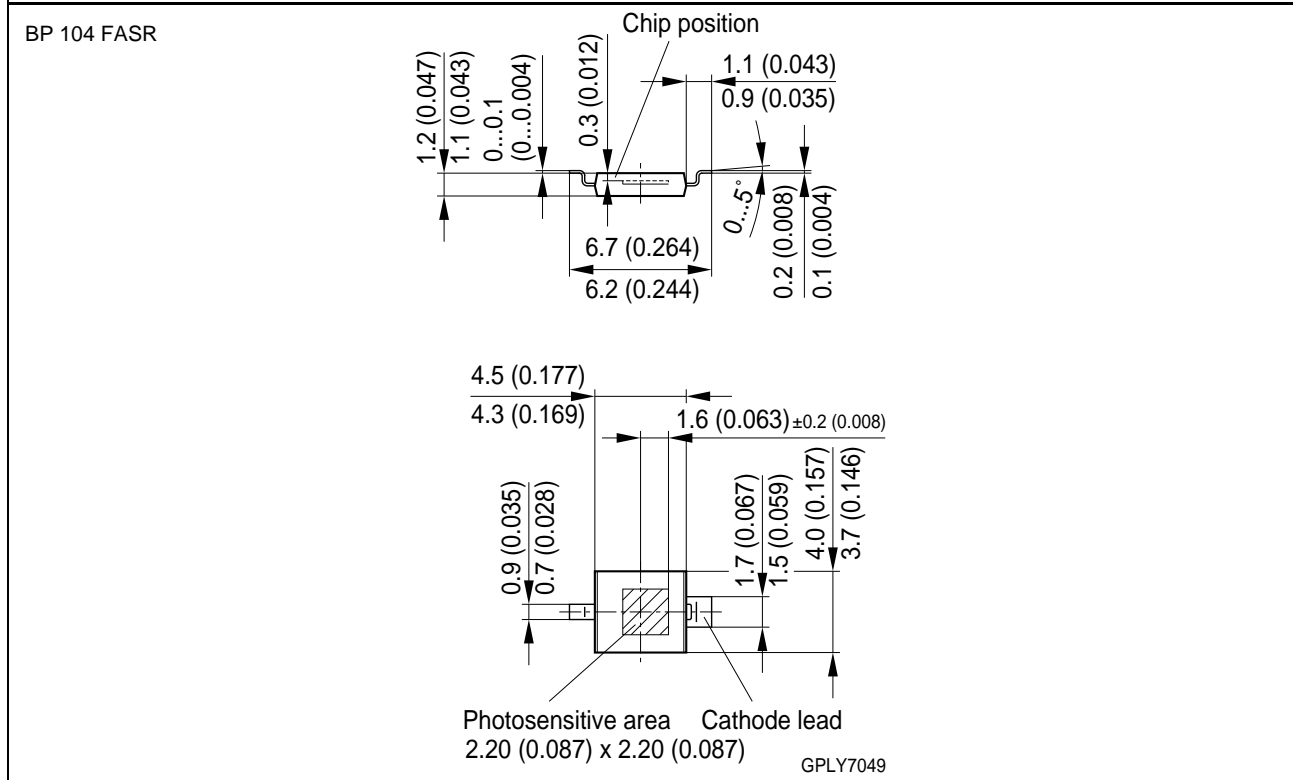
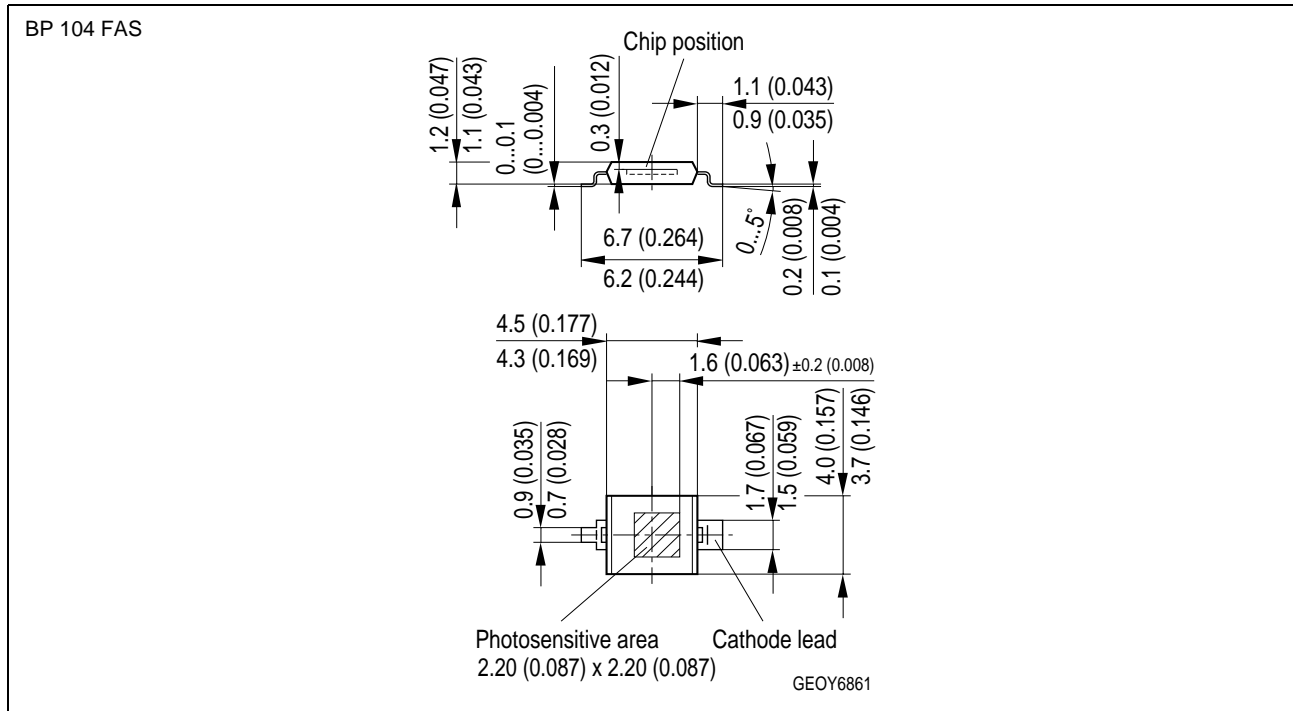
Dark Current
 $I_R = f(T_A), V_R = 10 V, E = 0$



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



Maßzeichnung
Package Outlines



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

Lötbedingungen

Soldering Conditions

Reflow Lötprofil für bleifreies Lötén

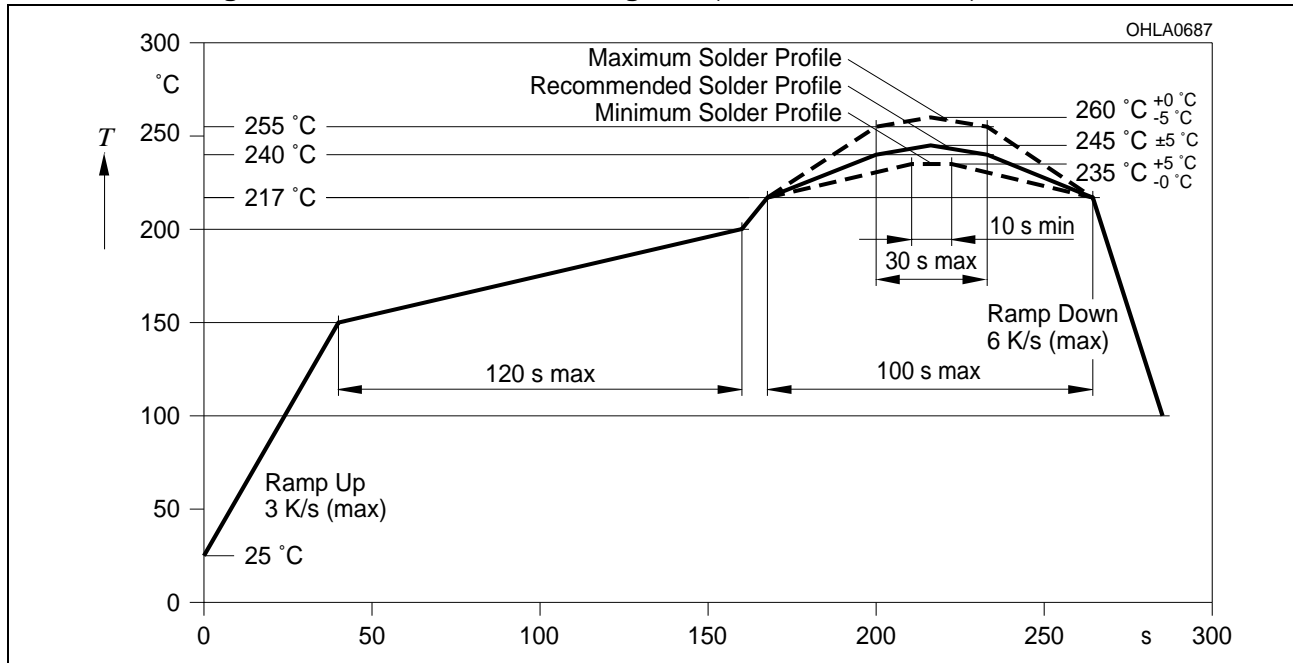
Reflow Soldering Profile for lead free soldering

Vorbehandlung nach JEDEC Level 4

Preconditioning acc. to JEDEC Level 4

(nach J-STD-020C)

(acc. to J-STD-020C)



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