

Silizium-PIN-Fotodiode
Silicon PIN Photodiode
Lead (Pb) Free Product - RoHS Compliant

BPX 65



Wesentliche Merkmale

- Wellenlängenbereich ($S_{10\%}$) 350nm bis 1100nm
- Kurze Schaltzeit (typ. 12 ns)
- Hermetisch dichte Metallbauform (TO-18), geeignet bis 125 °C

Features

- Wavelength range ($S_{10\%}$) 350 nm to 1100 nm
- Short switching time (typ. 12 ns)
- Hermetically sealed metal can package (TO-18), suitable up to 125 °C

Anwendungen

- Schneller optischer Empfänger
- Industrieelektronik
- „Messen/Steuern/Regeln“

Applications

- High speed photo detector
- Industrial electronics
- For control and drive circuits

Typ Type	Bestellnummer Ordering Code	Fotostrom, $E_v=1000$ lx, standard light A, $V_R = 5$ V Photocurrent I_p (μA)
BPX 65	Q62702P0027	10 (≥ 5.5)

Grenzwerte
Maximum Ratings

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebs- und Lagertemperatur Operating and storage temperature range	$T_{op}; T_{stg}$	- 40 ... + 125	°C
Sperrspannung Reverse voltage	V_R $V_R (t < 2 \text{ min})$	20 50	V V
Verlustleistung, $T_A = 25 \text{ °C}$ Total power dissipation	P_{tot}	250	mW

Kennwerte ($T_A = 25 \text{ °C}$, Normlicht A, $T = 2856 \text{ K}$)
Characteristics ($T_A = 25 \text{ °C}$, standard light A, $T = 2856 \text{ K}$)

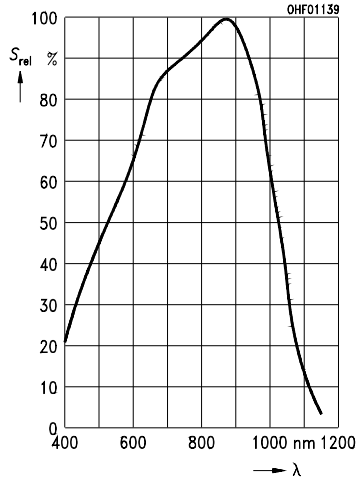
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Fotoempfindlichkeit, $V_R = 5 \text{ V}$ Spectral sensitivity	S	10 (≥ 5.5)	nA/lx
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S \text{ max}}$	850	nm
Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von S_{max} Spectral range of sensitivity $S = 10\%$ of S_{max}	λ	350 ... 1100	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	1.00	mm ²
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$	1×1	mm ²
Halbwinkel Half angle	φ	± 40	Grad deg.
Dunkelstrom Dark current $V_R = 20 \text{ V}$	I_R	1 (≤ 5)	nA
Spektrale Fotoempfindlichkeit, $\lambda = 850 \text{ nm}$ Spectral sensitivity	S_λ	0.55	A/W
Quantenausbeute, $\lambda = 850 \text{ nm}$ Quantum yield	η	0.80	<u>Electrons</u> Photon
Leerlaufspannung, $E_v = 1000 \text{ lx}$ Open-circuit voltage	V_O	320 (≥ 270)	mV

Kennwerte ($T_A = 25\text{ °C}$, Normlicht A, $T = 2856\text{ K}$)

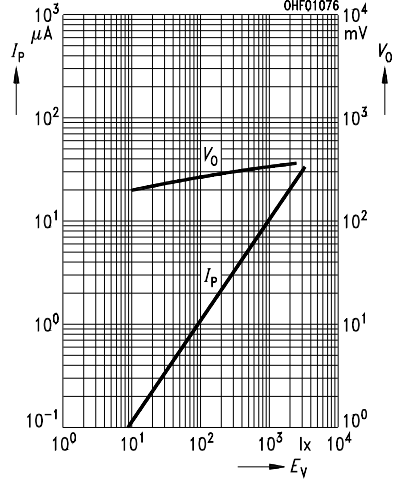
Characteristics ($T_A = 25\text{ °C}$, standard light A, $T = 2856\text{ K}$) (cont'd)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kurzschlussstrom, $E_V = 1000\text{ lx}$ Short-circuit current	I_{SC}	10	μA
Anstiegs und Abfallzeit des Fotostroms Rise and fall time of the photocurrent $R_L = 50\text{ }\Omega$; $V_R = 5\text{ V}$; $\lambda = 850\text{ nm}$	t_r, t_f	12	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	11	pF
Temperaturkoeffizient von V_L Temperature coefficient of V_L	TC_V	- 2.6	mV/K
Temperaturkoeffizient von I_K Temperature coefficient of I_K	TC_I	0.2	%/K
Rauschäquivalente Strahlungsleistung Noise equivalent power $V_R = 20\text{ V}$, $\lambda = 850\text{ nm}$	NEP	3.3×10^{-14}	$\frac{\text{W}}{\sqrt{\text{Hz}}}$
Nachweisgrenze, $V_R = 20\text{ V}$, $\lambda = 850\text{ nm}$ Detection limit	D^*	3.1×10^{12}	$\frac{\text{cm} \times \sqrt{\text{Hz}}}{\text{W}}$

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



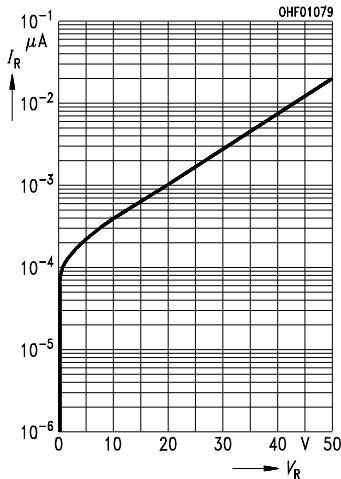
Photocurrent $I_P = f(E_V)$, $V_R = 5$ V
Open-Circuit-Voltage $V_L = f(E_V)$



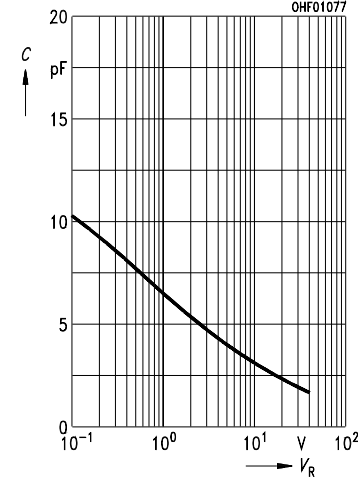
Total Power Dissipation
 $P_{tot} = f(T_A)$



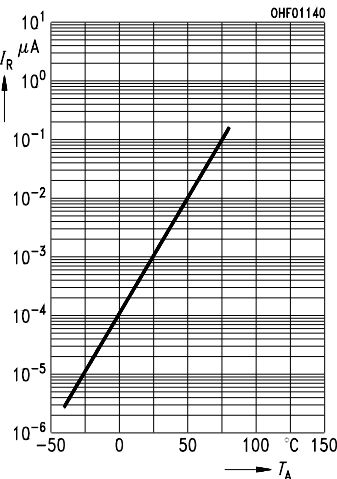
Dark Current
 $I_R = f(V_R), E = 0$



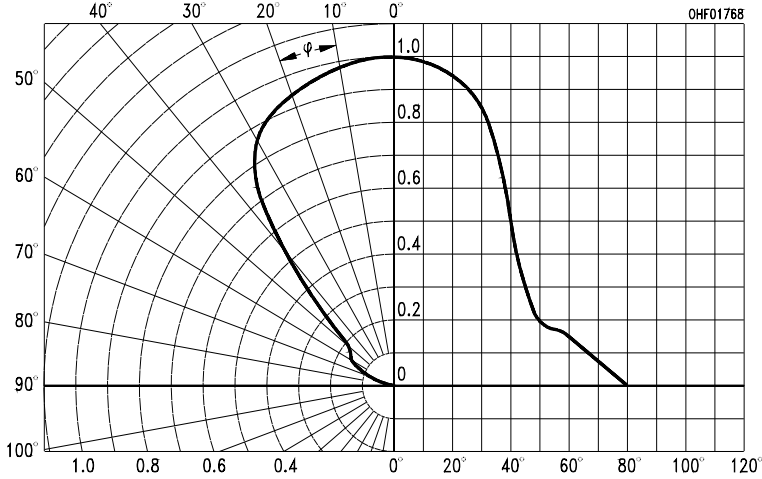
Capacitance
 $C = f(V_R), f = 1$ MHz, $E = 0$



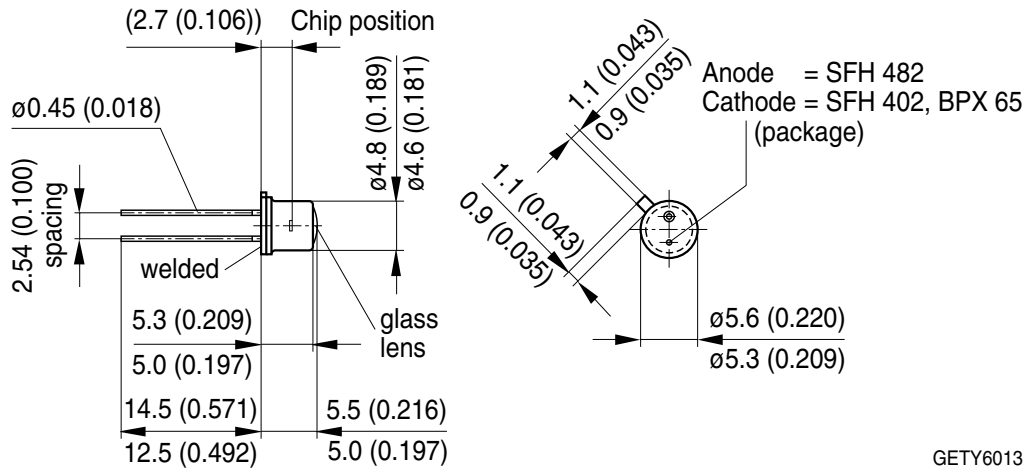
Dark Current
 $I_R = f(T_A), V_R = 20$ V, $E = 0$



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



Maßzeichnung
Package Outlines

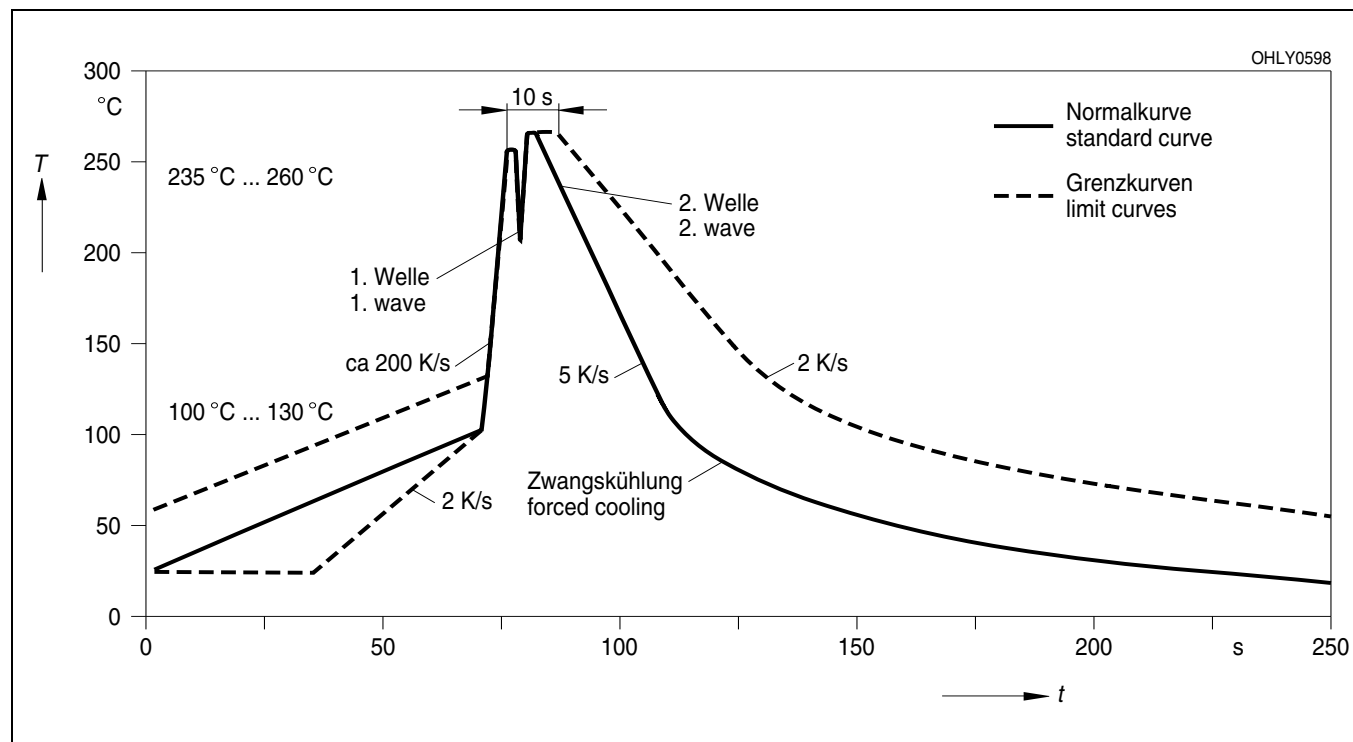


GETY6013

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

Lötbedingungen
Soldering Conditions
Wellenlöten (TTW)
TTW Soldering

(nach CECC 00802)
(acc. to CECC 00802)



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