Silicon Photodiode for the Visible Spectral Range
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Lead (Pb) Free Product - RoHS Compliant

BPW 21

Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 350nm bis 820nm
- Angepaßt an die Augenempfindlichkeit (V_λ)
- Hermetisch dichte Metallbauform (ähnlich TO-5)

Features

- Especially suitable for applications from 350nm to 820nm
- Adapted to human eye sensitivity (V_λ)
- Hermetically sealed metal package (similar to TO-5)

Anwendungen

- Belichtungsmesser für Tageslicht
- Für Kunstlicht mit hoher Farbtemperatur in der Fotografie und Farbanalyse

Application

- Exposure meter for daylight
- For artificial light of high color temperature in photographic fields and color analysis

Typ Type	Bestellnummer Ordering Code
BPW 21	Q62702P0885

Grenzwerte
Maximum Ratings

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebs- und Lagertemperatur Operating and storage temperature range	T_{op}; T_{stg}	– 40 … + 80	°C
Sperrspannung Reverse voltage	V_R	10	V
Verlustleistung, T_A = 25 °C Total power dissipation	P_{tot}	250	mW

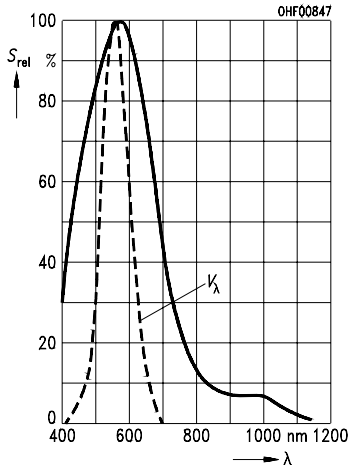
Kennwerte (T_A = 25 °C, Normlicht A, T = 2856 K)
Characteristics (T_A = 25 °C, standard light A, T = 2856 K)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Fotoempfindlichkeit, V_R = 5 V Spectral sensitivity	S	10 (≥ 5.5)	nA/lx
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\ max}$	550	nm
Spektraler Bereich der Fotoempfindlichkeit S = 10% von S_{max} Spectral range of sensitivity S = 10% of S_{max}	λ	350 … 820	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	7.34	mm^2
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$	2.73 × 2.73	mm × mm
Halbwinkel Half angle	φ	±55	Grad deg.
Dunkelstrom V_R = 10 V Dark current V_R = 5 V V_R = 10 mV	 I_R I_R	 2 (≤30) 8 (≤200)	 nA pA
Spektrale Fotoempfindlichkeit, λ = 550 nm Spectral sensitivity	S_λ	0.34	A/W
Quantenausbeute, λ = 550 nm Quantum yield	η	0.80	Electrons Photon
Leerlaufspannung, E_v = 1000 lx Open-circuit voltage	V_O	400 (≥ 320)	mV

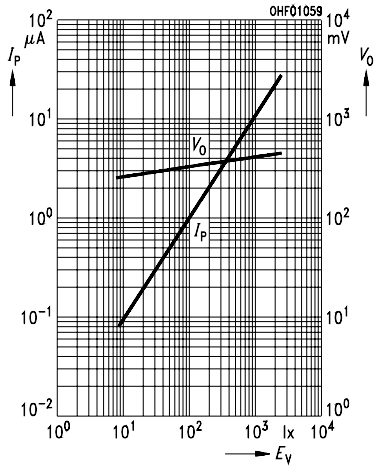
Kennwerte (T_A = 25 °C, Normlicht A, T = 2856 K)
Characteristics (T_A = 25 °C, standard light A, T = 2856 K) (cont'd)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kurzschlußstrom, E_v = 1000 lx Short-circuit current	I_{SC}	10	µA
Anstiegs- und Abfallzeit des Fotostromes Rise and fall time of the photocurrent R_L = 1 kΩ; V_R = 5 V; λ = 550 nm; I_p = 10 µA	t_r, t_f	1.5	ns
Durchlaßspannung, I_F = 100 mA, E = 0 Forward voltage	V_F	1.2	V
Kapazität, V_R = 0 V, f = 1 MHz, E = 0 Capacitance	C_0	580	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	– 0.05	%/K
Rauschäquivalente Strahlungsleistung Noise equivalent power V_R = 5V, λ = 550 nm	NEP	7.2×10^{-14}	$\frac{W}{\sqrt{Hz}}$
Nachweisgrenze, V_R = 5V, λ = 550 nm Detection limit	D*	1×10^{12}	$\frac{cm \times \sqrt{Hz}}{W}$

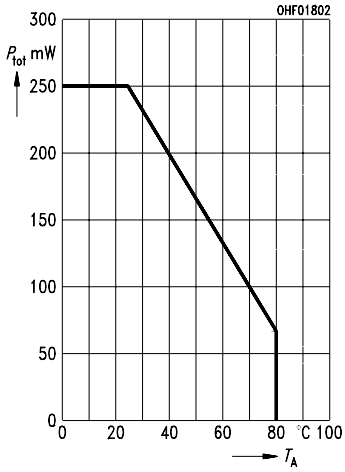
Relative Spectral Sensitivity
$S_{rel} = f(\lambda)$



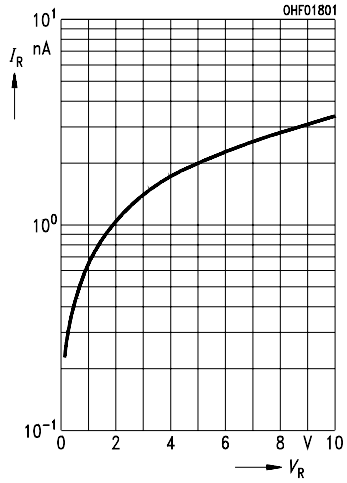
Photocurrent $I_P = f(E_v)$, V_R = 5 V
Open-Circuit Voltage $V_O = f(E_v)$



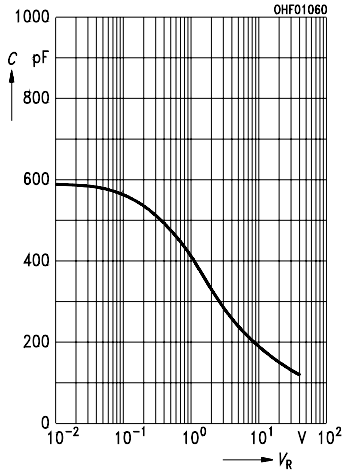
Total Power Dissipation
$P_{tot} = f(T_A)$



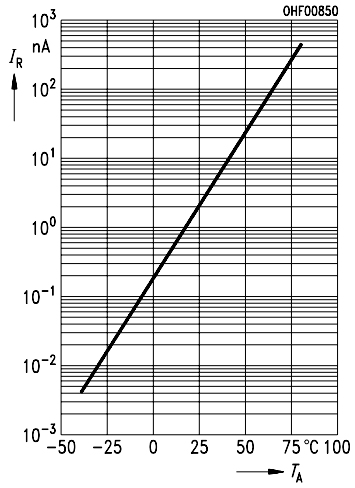
Dark Current
$I_R = f(V_R)$



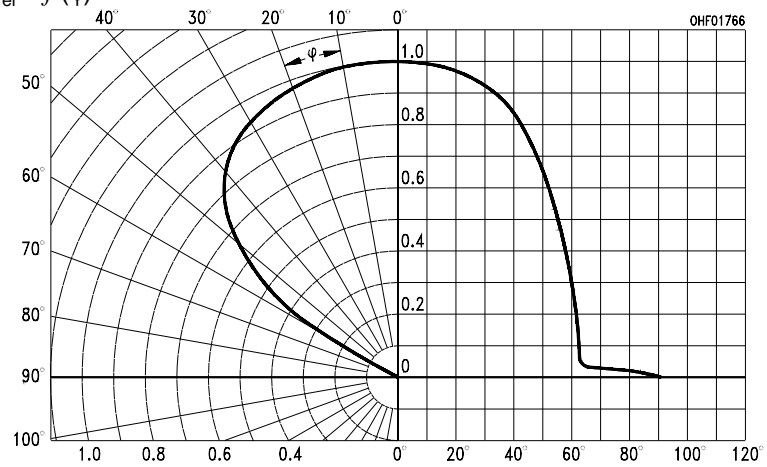
Capacitance
$C = f(V_R)$, f = 1 MHz, E = 0



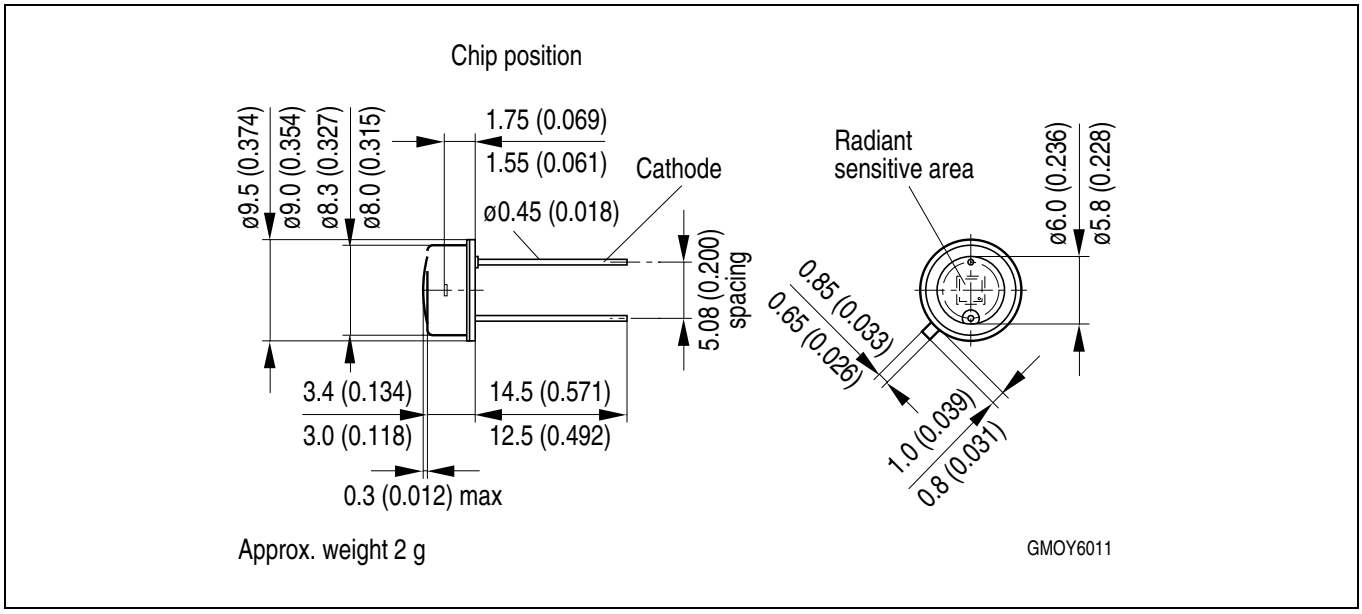
Dark Current
$I_R = f(T_A)$, V_R = 5 V



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

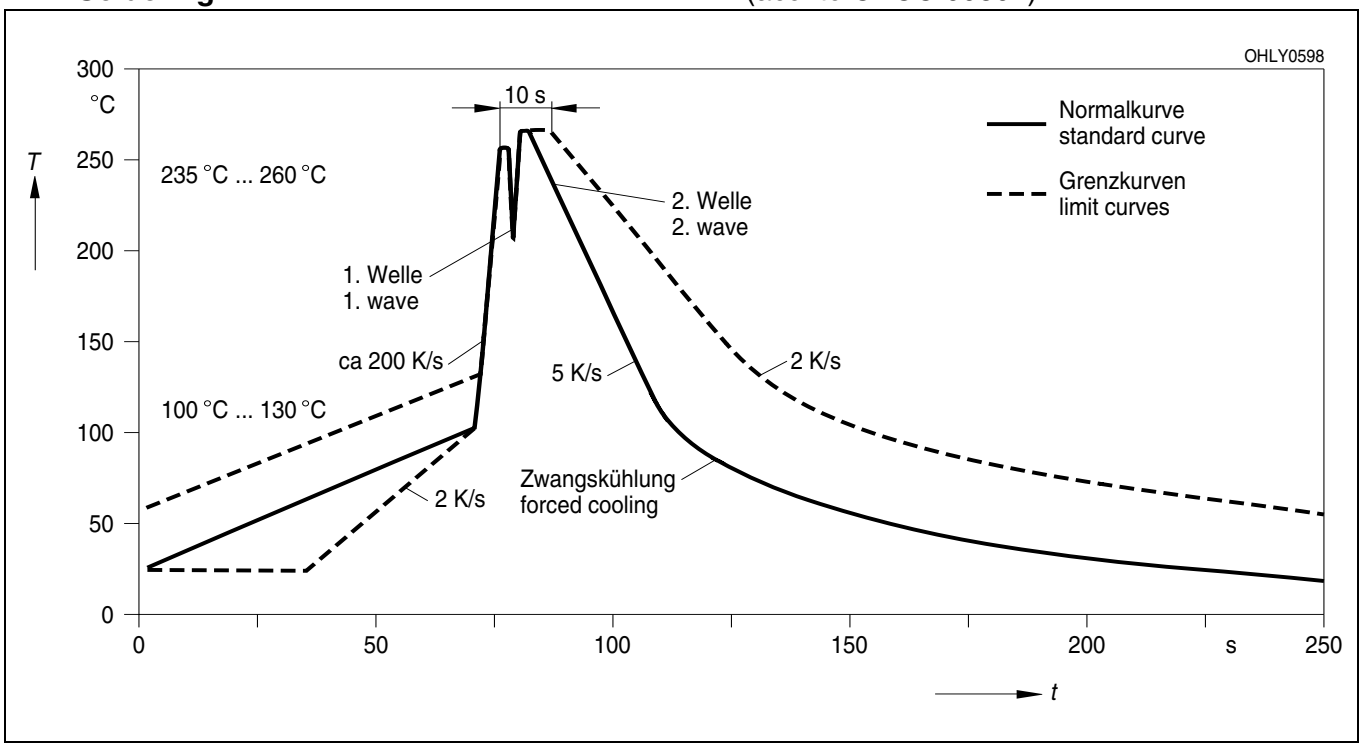


Maßzeichnung
Package Outlines



Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

Lötbedingungen
Soldering Conditions
Wellenlöten (TTW) (nach CECC 00802)
TTW Soldering (acc. to CECC 00802)



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