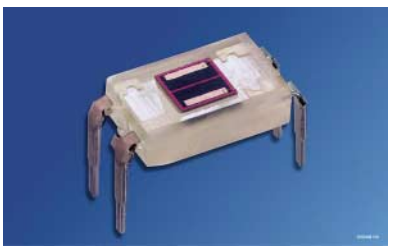
Silizium-Differential-Fotodiode
Silicon Differential Photodiode
Lead (Pb) Free Product - RoHS Compliant

BPX 48



Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 400 nm bis 1100 nm
- Hohe Fotoempfindlichkeit
- DIL-Plastikbauform mit hoher Packungsdichte
- Doppeldiode mit extrem hoher Gleichmäßigkeit

Features

- Especially suitable for applications from 400 nm to 1100 nm
- High photosensitivity
- DIL plastic package with high packing density
- Double diode with extremely high homogeneousness

Anwendungen

- Nachlaufsteuerung
- Kantenführungen
- Weg- bzw. Winkelabtastungen
- Industrieelektronik
- „Messen/Steuern/Regeln“

Application

- Follow-up control
- Edge control
- Path and angle scanning
- Industrial electronics
- For control and drive circuits

Typ Type	Bestellnummer Ordering Code
BPX 48	Q62702P0017S0001

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}	50	mW

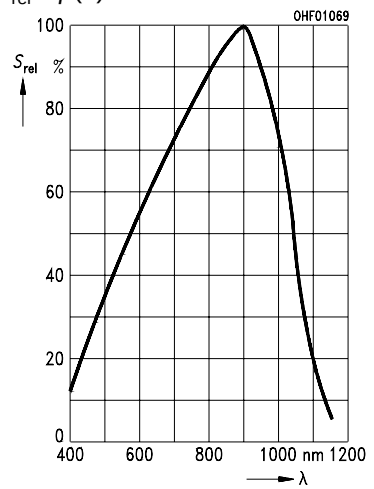
Kennwerte (T_A = 25 °C) für jede Einzeldiode
Characteristics (T_A = 25 °C) per single diode system

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Fotostrom Photocurrent V_R = 5 V, Normlicht/standard light A, T = 2856 K, E_V = 1000 lx	I_P	24 (≥ 15)	µA
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\ max}$	900	nm
Spektraler Bereich der Fotoempfindlichkeit S = 10% von S_{max} Spectral range of sensitivity S = 10% of S_{max}	λ	400 … 1150	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	1.54	mm^2
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$	0.7 × 2.2	mm × mm
Halbwinkel Half angle	φ	± 60	Grad deg.
Dunkelstrom, V_R = 10 V Dark current	I_R	10 (≤ 100)	nA
Spektrale Fotoempfindlichkeit Spectral sensitivity λ = 850 nm	S_λ	0.55	A/W

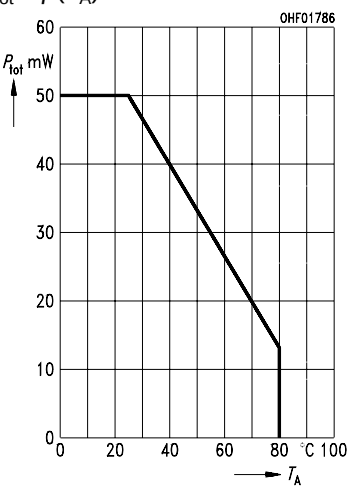
Kennwerte (T_A = 25 °C) für jede Einzeldiode
Characteristics (T_A = 25 °C) per single diode system (cont'd)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Max. Abweichung der Fotoempfindlichkeit der Systeme vom Mittelwert Max. deviation of the system spectral sensitivity from the average	ΔS	± 5	%
Quantenausbeute Quantum yield λ = 850 nm	η	0.8	Electrons Photon
Leerlaufspannung Open-circuit voltage E_v = 1000 lx, Normlicht/standard light A, T = 2856 K	V_O	330 (≥ 280)	mV
Kurzschlussstrom Short-circuit current E_v = 1000 lx, Normlicht/standard light A, T = 2856 K	I_{SC}	24	µA
Anstiegs- und Abfallzeit des Fotostromes Rise and fall time of the photocurrent R_L = 1 kΩ; V_R = 5 V; λ = 850 nm; I_p = 20 µA	t_r, t_f	500	ns
Durchlassspannung, I_F = 40 mA, E = 0 Forward voltage	V_F	1.3	V
Kapazität, V_R = 0 V, f = 1 MHz, E = 0 Capacitance	C_0	25	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} Normlicht/standard light A	TC_I	0.18	%/K
Rauschäquivalente Strahlungsleistung Noise equivalent power V_R = 10 V, λ = 950 nm	NEP	1.0×10^{-13}	$\frac{W}{\sqrt{Hz}}$
Nachweisgrenze, V_R = 10 V, λ = 950 nm Detection limit	D*	1.2×10^{12}	$\frac{cm \times \sqrt{Hz}}{W}$

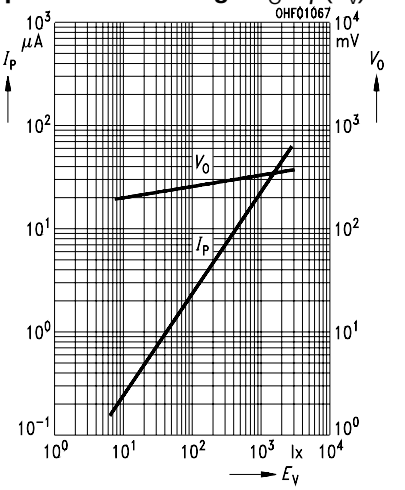
Relative Spectral Sensitivity
$S_{rel} = f(\lambda)$



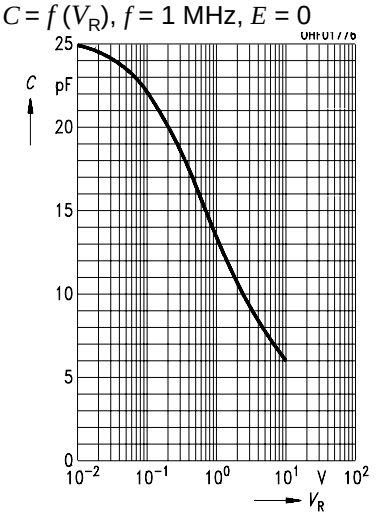
Total Power Dissipation
$P_{tot} = f(T_A)$



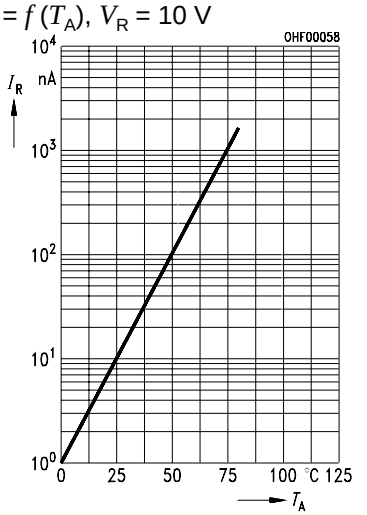
Photocurrent $I_P = f(E_v)$, V_R = 5 V
Open-Circuit Voltage $V_O = f(E_v)$



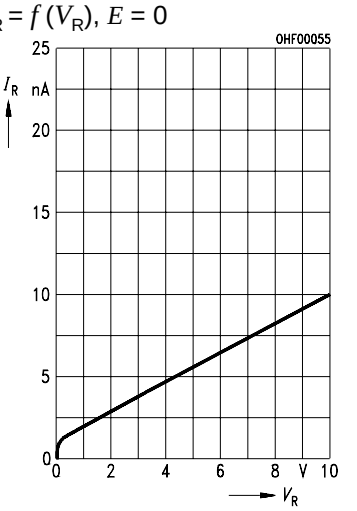
Capacitance
$C = f(V_R)$, f = 1 MHz, E = 0



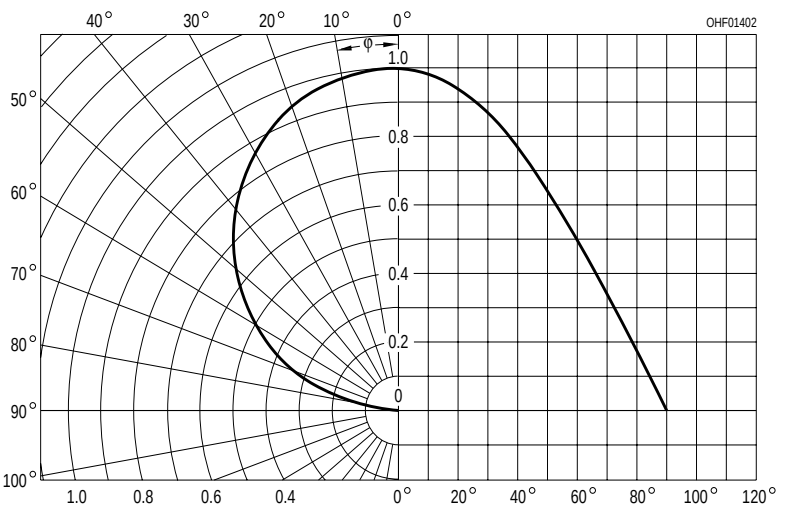
Dark Current
$I_R = f(T_A)$, V_R = 10 V



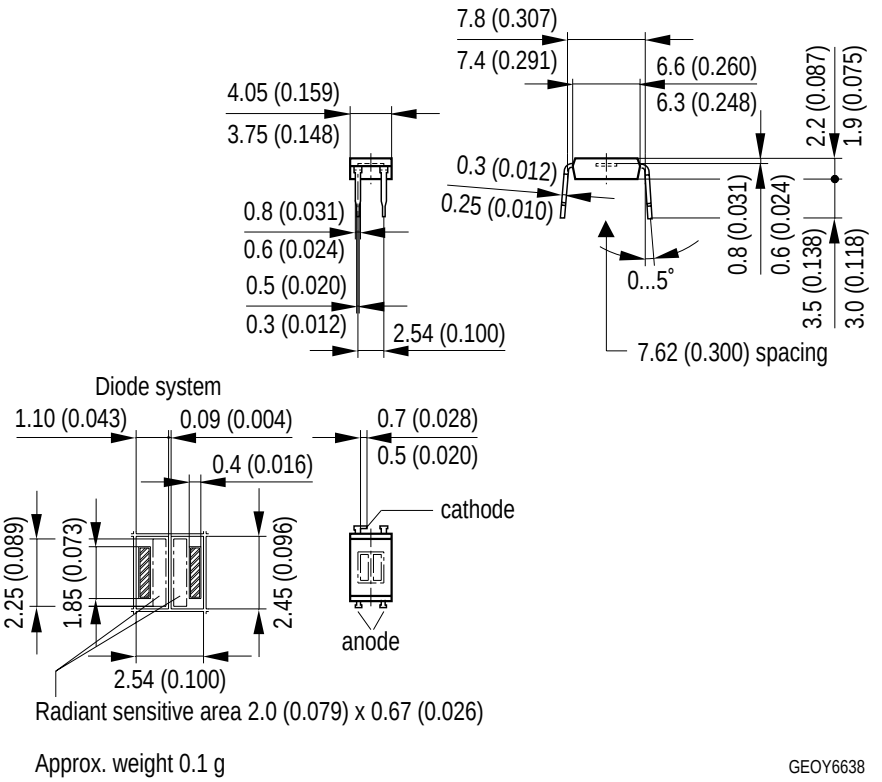
Dark Current
$I_R = f(V_R)$, E = 0



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

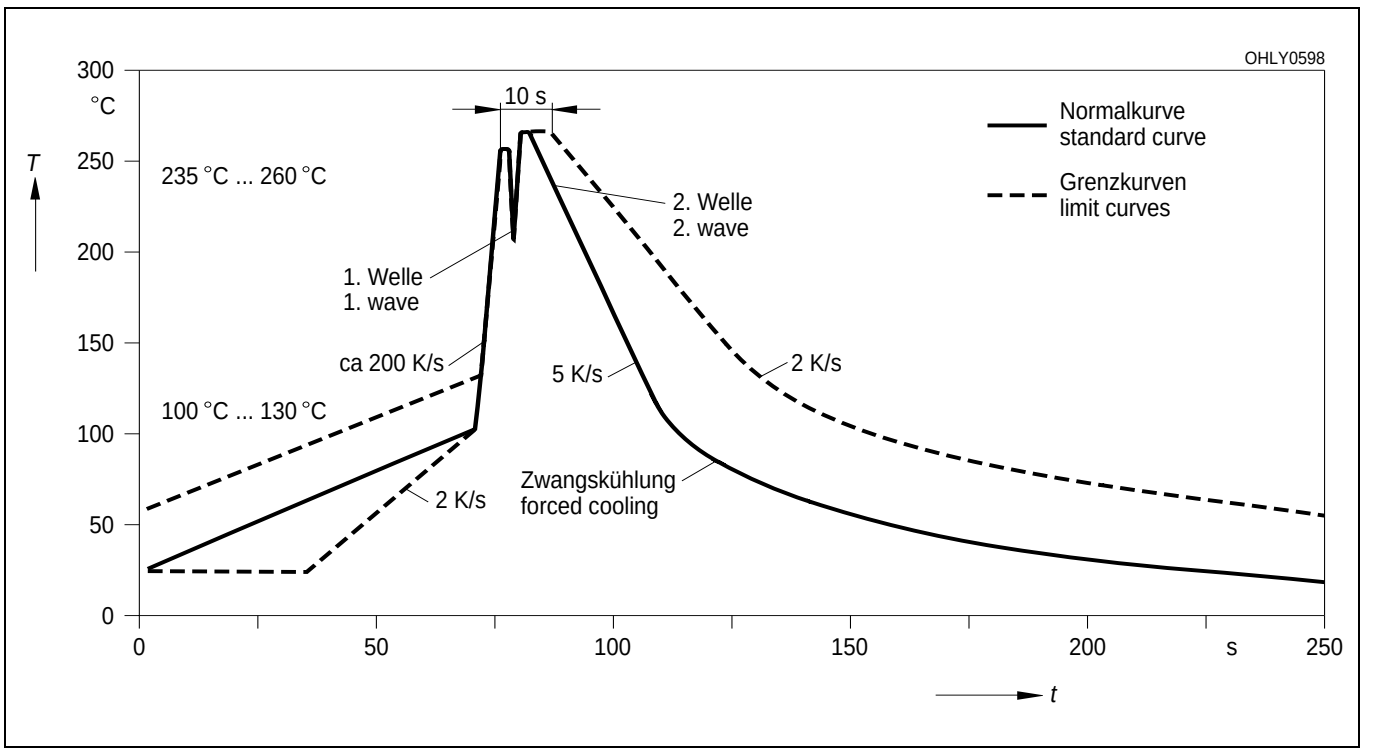


Maßzeichnung
Package Outlines



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

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



Published by
OSRAM Opto Semiconductors GmbH
Wernerwerkstrasse 2, D-93049 Regensburg
www.osram-os.com

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