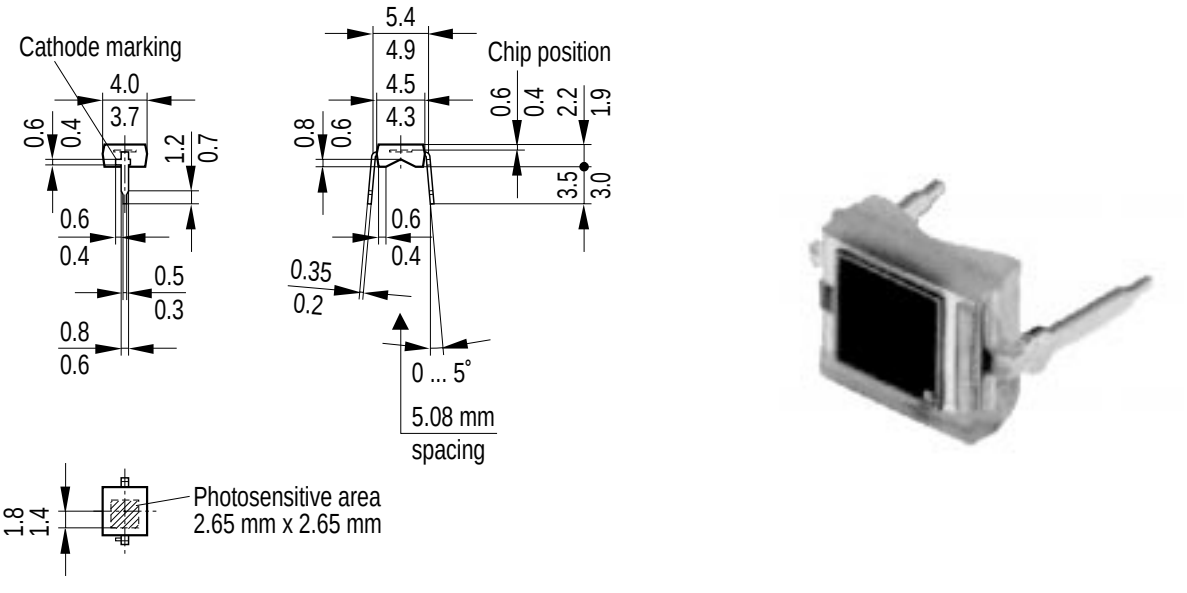
SIEMENS

Silizium-Fotodiode
Silicon Photodiode

BPW 33



Maße in mm, wenn nicht anders angegeben/Dimensions in mm, unless otherwise specified.

Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 350 nm bis 1100 nm
- Sperrstromarm (typ. 20 pA)
- DIL-Plastikbauform mit hoher Packungsdichte

Anwendungen

- Belichtungsmesser
- Farbanalyse

Features

- Especially suitable for applications from 350 nm to 1100 nm
- Low reverse current (typ. 20 pA)
- DIL plastic package with high packing density

Applications

- Exposure meters
- Color analysis

Typ Type	Bestellnummer Ordering Code
BPW 33	Q62702-P76

Grenzwerte
Maximum Ratings

Bezeichnung **Description**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Betriebs- und Lagertemperatur Operating and storage temperature range	T_{op}; T_{stg}	– 40 ... + 85	°C
Sperrspannung Reverse voltage	V_R	7	V
Verlustleistung, T_A = 25 °C Total power dissipation	P_{tot}	150	mW

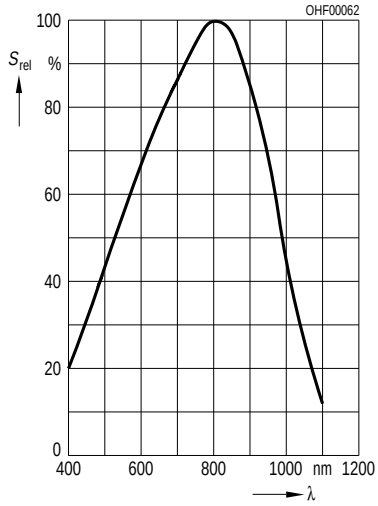
Kennwerte (T_A = 25 °C, Normlicht A, T = 2856 K)
Characteristics (T_A = 25 °C, standard light A, T = 2856 K)

Bezeichnung **Description**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Fotoempfindlichkeit, V_R = 5 V Spectral sensitivity	S	75 (≥ 35)	nA/lx
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\ max}$	800	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	7.34	mm^2
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$	2.71 × 2.71	mm × mm
Abstand Chipoberfläche zu Gehäuseoberfläche Distance chip front to case surface	H	0.5	mm
Halbwinkel Half angle	φ	± 60	Grad deg.
Dunkelstrom, V_R = 1 V Dark current	I_R	20 (≤ 100)	pA
Nullpunktsteilheit, E = 0 Zero crossover	S_0	≤ 2.5	pA/mV

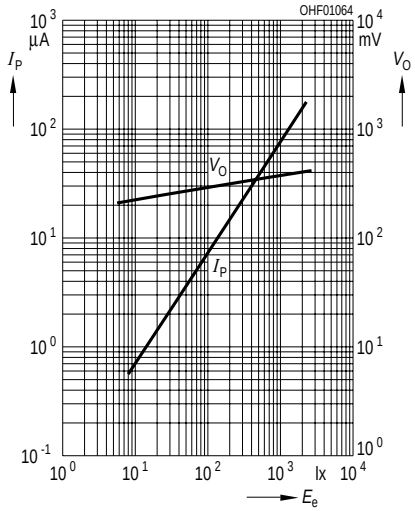
Kennwerte (T_A = 25 °C, Normlicht A, T = 2856 K)
Characteristics (T_A = 25 °C, standard light A, T = 2856 K) (cont'd)

Bezeichnung **Description**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Spektrale Fotoempfindlichkeit, λ = 850 nm Spectral sensitivity	S_λ	0.59	A/W
Quantenausbeute, λ = 850 nm Quantum yield	η	0.86	Electrons Photon
Leerlaufspannung, E_v = 1000 lx Open-circuit voltage	V_O	440 (≥ 375)	mV
Kurzschlußstrom, E_v = 1000 lx Short-circuit current	I_{SC}	72	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 = 70 µA	t_r, t_f	1.5	µs
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	630	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	0.2	%/K
Rauschäquivalente Strahlungsleistung Noise equivalent power V_R = 1 V, λ = 850 nm	NEP	4.3×10^{-15}	$\frac{W}{\sqrt{Hz}}$
Nachweisgrenze, V_R = 1 V, λ = 850 nm Detection limit	D*	6.3×10^{13}	$\frac{cm \cdot \sqrt{Hz}}{W}$

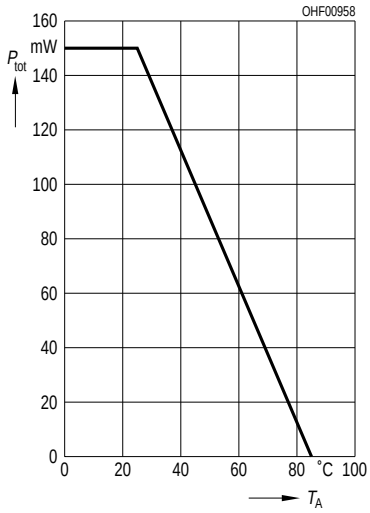
Relative spectral sensitivity
$S_{rel} = f\ (\lambda)$



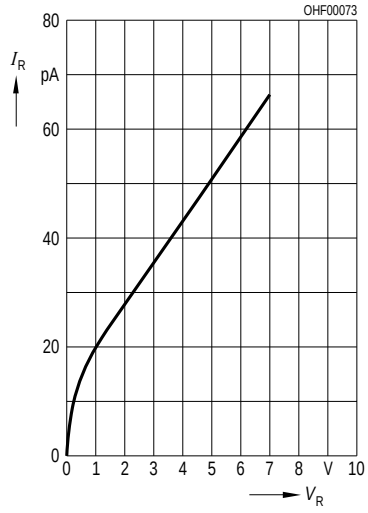
Photocurrent $I_P = f\ (E_v)$, V_R = 5 V
Open-circuit voltage $V_O = f\ (E_v)$



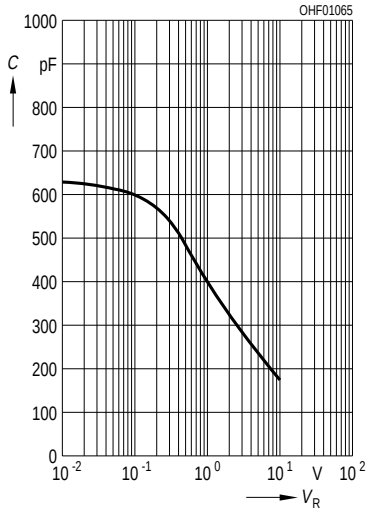
Total power dissipation
$P_{tot} = f\ (T_A)$



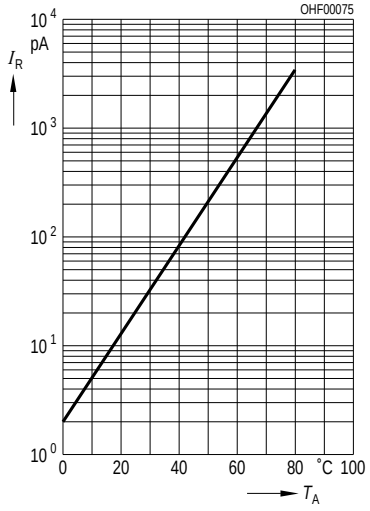
Dark current
$I_R = f\ (V_R)$, E = 0



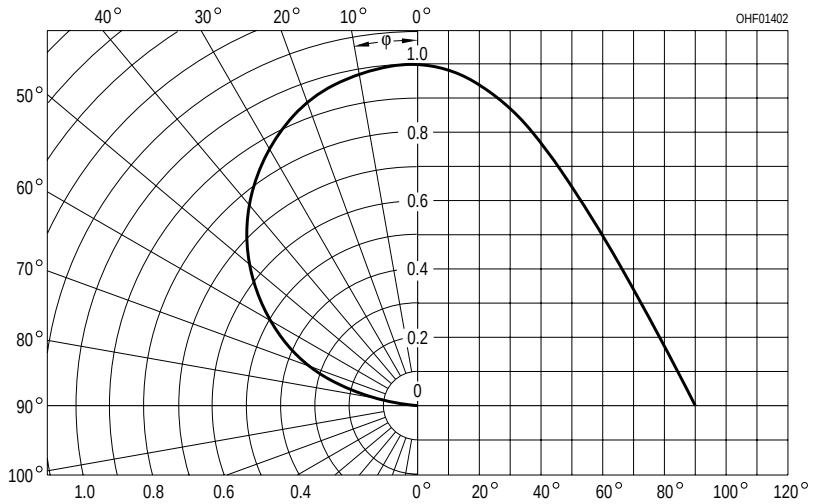
Capacitance
$C = f\ (V_R)$, f = 1 MHz, E = 0



Dark current
$I_R = f\ (T_A)$, V_R = 1 V, E = 0



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



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