Silizium-PIN-Fotodiode mit integriertem Temperatur-Sensor
Silicon PIN Photodiode with integrated Temperature Sensor
Lead (Pb) Free Product - RoHS Compliant

SFH 2504

Wesentliche Merkmale

- Speziell geeignet für Anwendungen im Bereich von 740 nm bis 1100 nm
- 5 mm-Plastikbauform im LED-Gehäuse
- Integrierter NTC, R_{25}=10kΩ

Features

- Especially suitable for applications from 740 nm to 1100 nm
- 5 mm LED plastic package
- Integrated NTC thermistor, R_{25}=10kΩ

Anwendungen

- Temperatur und Lichtmessung

Applications

- Temperature and light intensity measurement

Typ Type	Bestellnummer Ordering Code
SFH 2504	Q65110A3986

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
Verlustleistung Total power dissipation	P_{tot}	30	mW

Fotodiode
Photodiode

Sperrspannung Reverse voltage	V_R	30	V

Kennwerte (T_A = 25 °C)
Characteristics

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**

Fotodiode
Photodiode

Fotostrom Photocurrent V_R = 5 V, λ = 870 nm, E_e = 1 mW/cm^2	I_P	2.7 (≥ 1.9)	µA
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\ max}$	870	nm
Spektraler Bereich der Fotoempfindlichkeit S = 10% von S_{max} Spectral range of sensitivity S = 10% of S_{max}	λ	740 … 1100	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	0.3	mm^2
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$	0.56 × 0.56	mm × mm
Halbwinkel Half angle	φ	±60	Grad deg.
Dunkelstrom, V_R = 10 V Dark current	I_R	≤ 5	nA

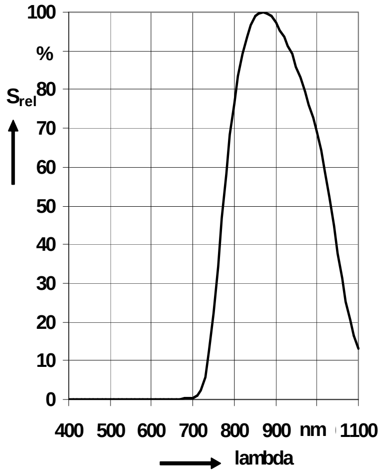
Kennwerte (T_A = 25 °C)
Characteristics (cont'd)

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
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	13	pF

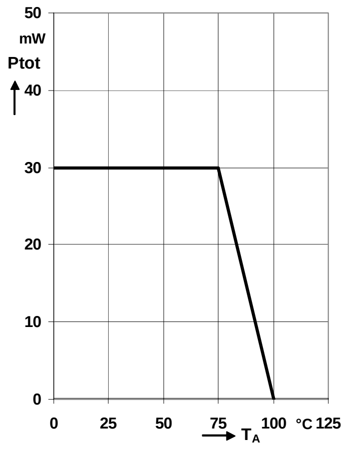
Temperatursensor (EPCOS B57860S0103A002)
Thermistor (EPCOS B57860S0103A002)

Widerstandswert Resistance	R_{25}	10	kΩ
Toleranz Widerstandswert Tolerance of resistance	R_{tol}	±3	%
Nenntemperatur Rated temperature	T_n	25	°C

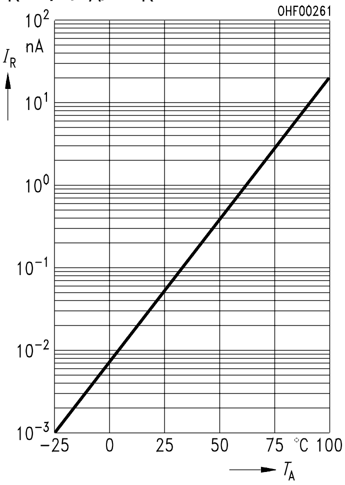
Relative Spectral Sensitivity
$S_{rel} = f(\lambda)$



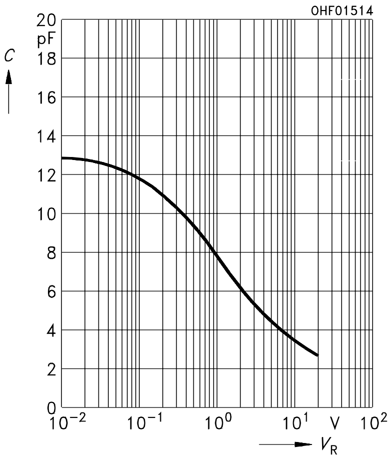
Total Power Dissipation
$P_{tot} = f(T_A)$



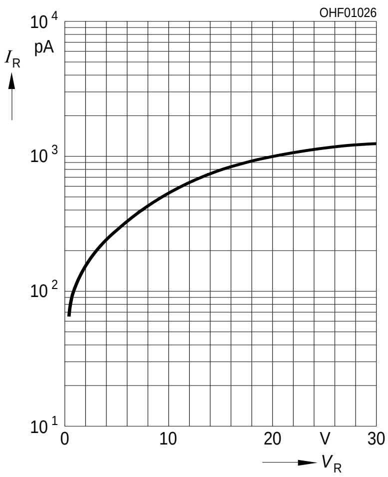
Dark Current
$I_R = f(T_A)$, V_R = 10 V, $E = 0$



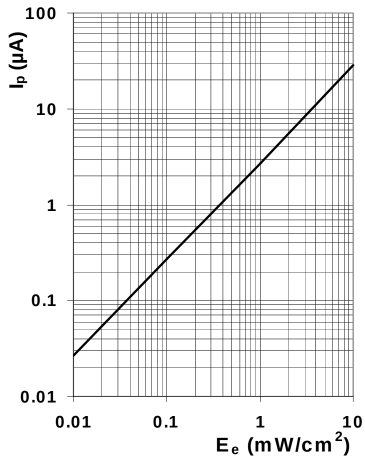
Capacitance
$C = f(V_R)$, f = 1 MHZ, $E = 0$



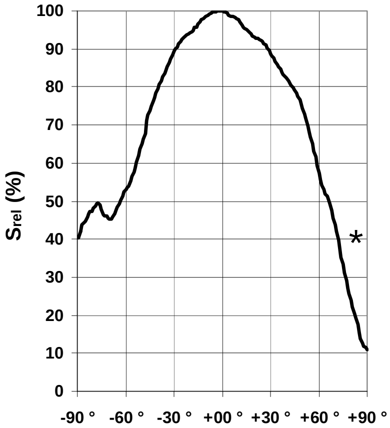
Dark Current
$I_R = f(V_R)$, $E = 0$



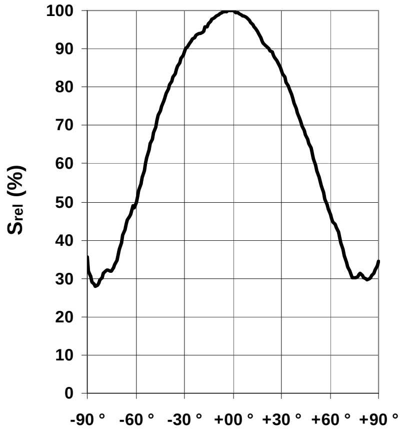
Photocurrent
$I_P = f(E_e)$, λ = 870nm, V_R = 5 V



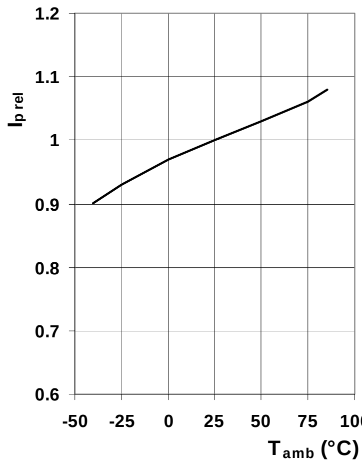
Directional Characteristics
$S_{rel} = f(\varphi)$ perpendicular to leads



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

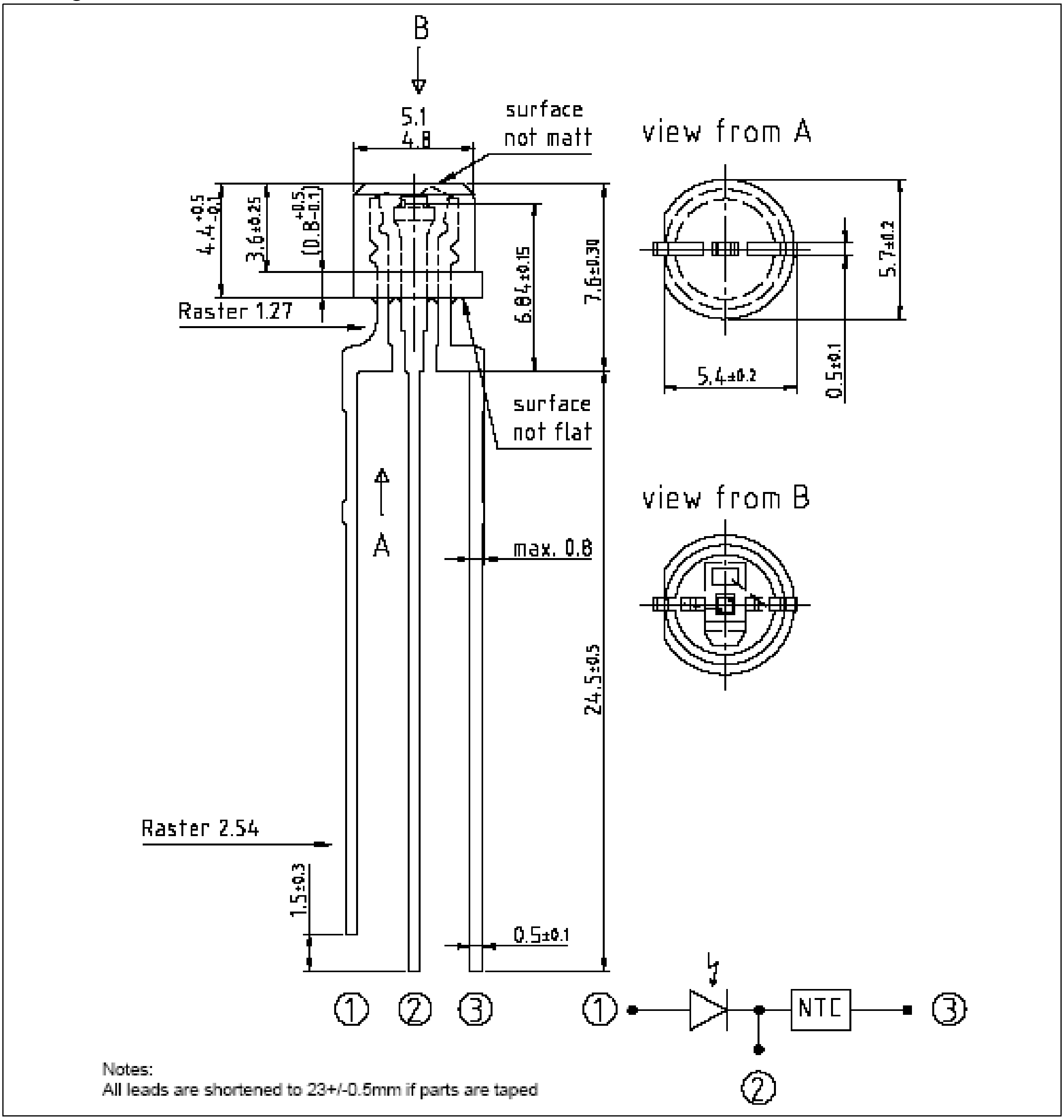


Photocurrent
$I_P/I_{P25°} = f(T_A)$, λ = 870nm, V_{CE} = 5 V



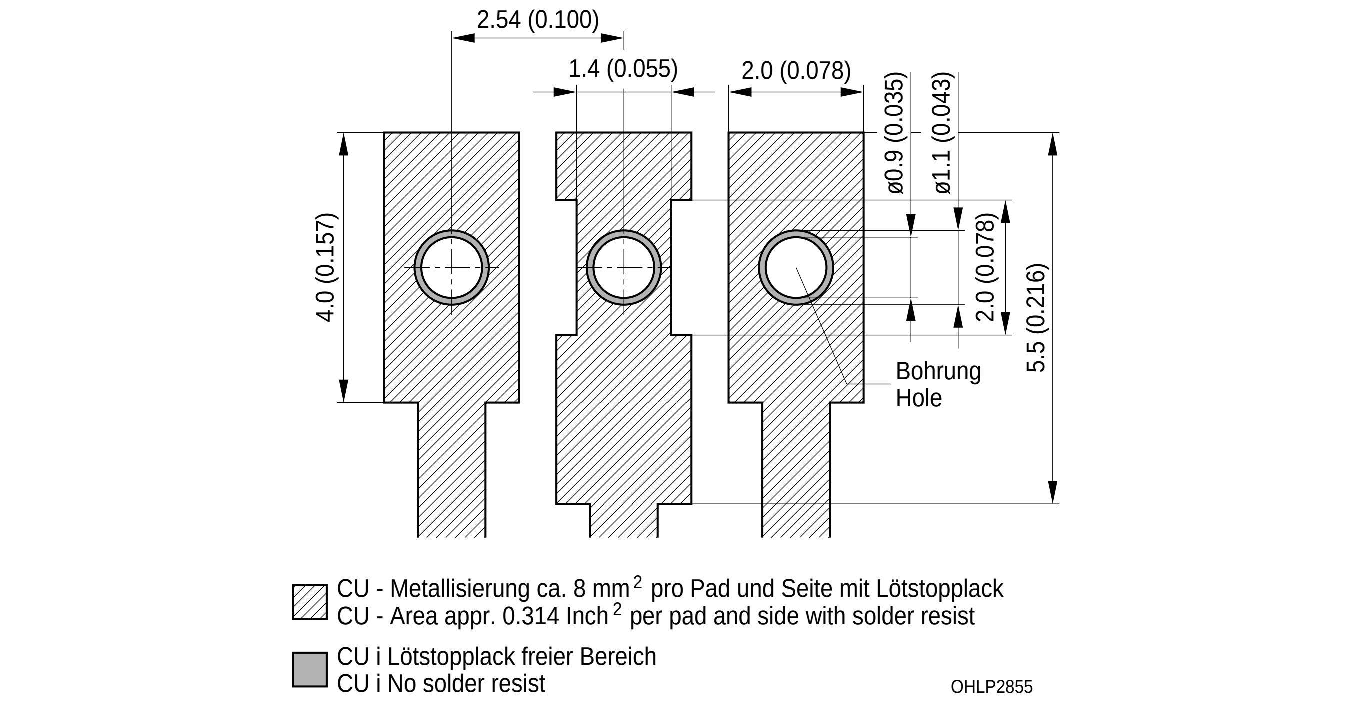
*shadowing by NTC

Maßzeichnung
Package Outlines

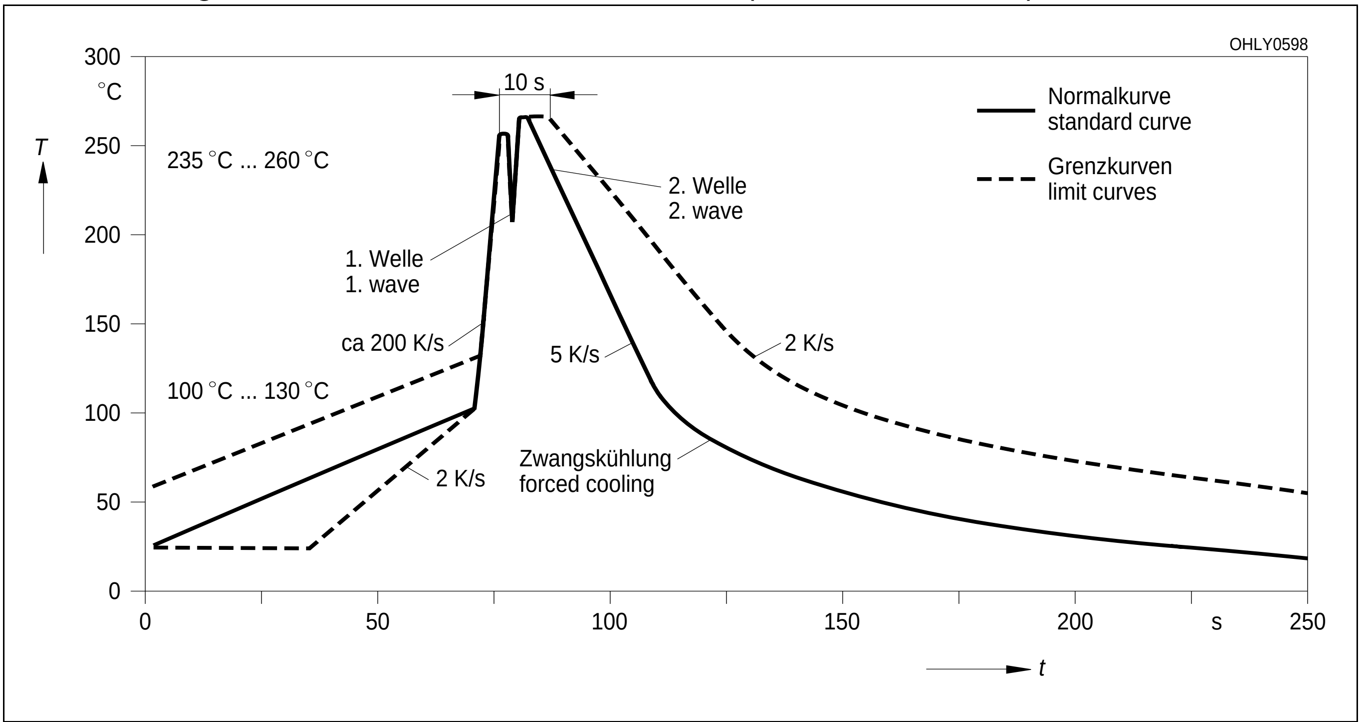


Maße in mm / Dimensions in mm.

Empfohlenes Lötpaddesign
Recommended Solderpad Design



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



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