Schnelle PIN-Fotodiode
High Speed PIN Photodiode
Lead (Pb) Free Product - RoHS Compliant

SFH 2332

Wesentliche Merkmale

- Speziell geeignet für Anwendungen von 350nm bis 780nm
- Sehr kurze Schaltzeit im spezifizierten Wellenlängenbereich
- Sehr kurze Schaltzeiten bei geringer Sperrspannung (<5V)
- Extrem kurze Abklingzeit („slow tail“)
- 3 mm Plastikbauform im LED-Gehäuse

Features

- Especially suitable for applications from 350nm to 780nm
- Fast switching time within the specified wavelength
- Fast switching time at low reverse voltage (<5V)
- Ultra short decay time („slow tail“)
- 3 mm LED plastic package

Anwendungen

- Optische Laufwerke (CD, DVD, BluRay)
- Lichtschranken für Gleich- und Wechselbetrieb
- Industrieelektronik
- „Messen/Steuern/Regeln“
- Abstandsmesser

Applications

- Optical Disc Drives (CD, DVD, BluRay)
- Photointerrupters
- Industrial electronics
- For control and drive circuits
- Range Finder

Typ Type	Bestellnummer Ordering Code
SFH 2332	Q65110A6342

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
Sperrspannung Reverse voltage	V_R	15	V
Sperrspannung, t < 120 s Reverse voltage	V_R	20	V
Verlustleistung Total power dissipation	P_{tot}	150	mW
Elektrostatische Entladung Electrostatic Discharge Human Body Model according to EOS/ESD-5.1-1993	ESD	2	kV

Kennwerte (T_A = 25 °C)
Characteristics

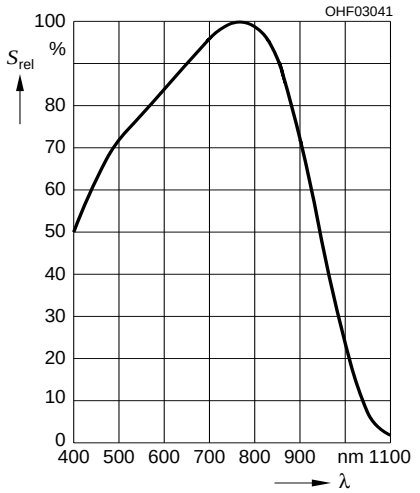
Bezeichnung Parameter	Symbol Symbol	Wert Value			Einheit Unit
		min	typ	max	
Spektrale Fotoempfindlichkeit des Chips Spectral sensitivity of the chip λ = 405nm λ = 650nm λ = 780nm	S_λ		 0.26 0.49 0.54		A/W
Fotostrom, V_R = 5 V, E_e = 0.5 mW/cm² Photocurrent λ = 405nm λ = 650nm λ = 780nm	I_P		 4.5 7.6 8.5		µA
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\ max}$		780		nm
Spektraler Bereich der Fotoempfindlichkeit Spectral range of sensitivity, S = 10% of S_{max}	λ	350		1050	nm
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$		0.6 × 0.6		mm × mm
Abstand Chipoberfläche zu Gehäuseoberfläche Distance chip front to case surface	H		2.4 … 2.8		mm

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

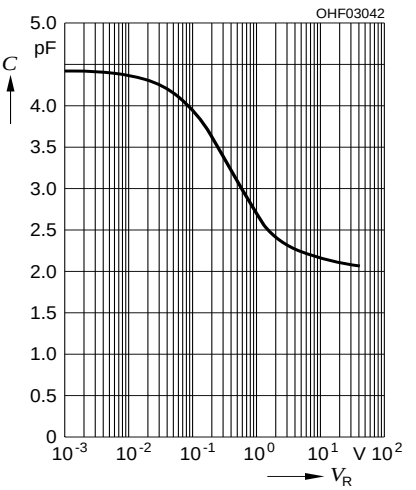
Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**			**Einheit** **Unit**
		min	**typ**	**max**	
Halbwinkel Half angle	φ		± 17		Grad deg.
Dunkelstrom, V_R = 5V Dark current	I_R		0.05	5	nA
Anstiegs- und Abfallzeit des Fotostromes Rise and fall time of the photocurrent, 10% - 90% V_R = 5V; R_L = 50 Ω; I_p = 1 mA; λ = 405nm λ = 650nm λ = 780 nm;	t_r, t_f		 1.5 1.6 1.8	 5 5 5	ns
Kapazität, f = 1 MHz, E = 0, V_R = 0 V; Capacitance	C_0		4.5	5	pF
Temperaturkoeffizient von S_λ Temperature coefficient of S_λ λ = 405 nm λ = 650 nm λ = 780 nm	TC_I		 -0.06 0.00 0.01		 %/K %/K %/K
Rauschäquivalente Strahlungsleistung[1)] Noise equivalent power, λ = 650 nm	NEP		8.2×10^{-15}		$\frac{W}{\sqrt{Hz}}$

[1)] $NEP = 17{,}9\times10^{-15} \times \frac{\sqrt{I_R}}{S_\lambda}$

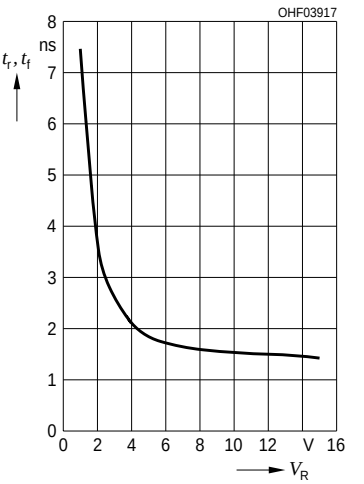
Relative Spectral Sensitivity
$S_{rel} = f(\lambda)$



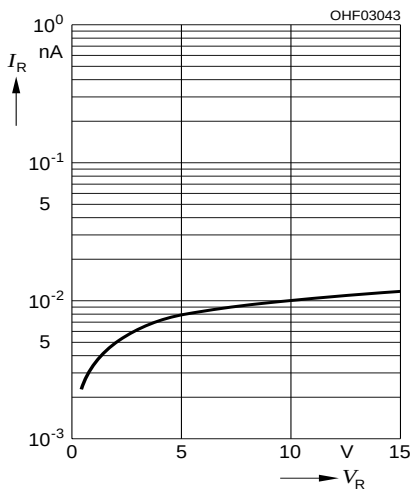
Capacitance
$C = f(V_R)$, $E = 0$



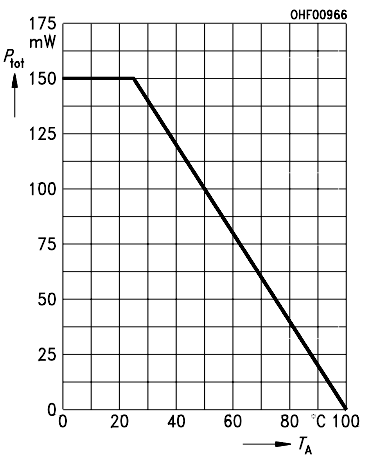
Switching Time
$t_r, t_f = f(V_R)$



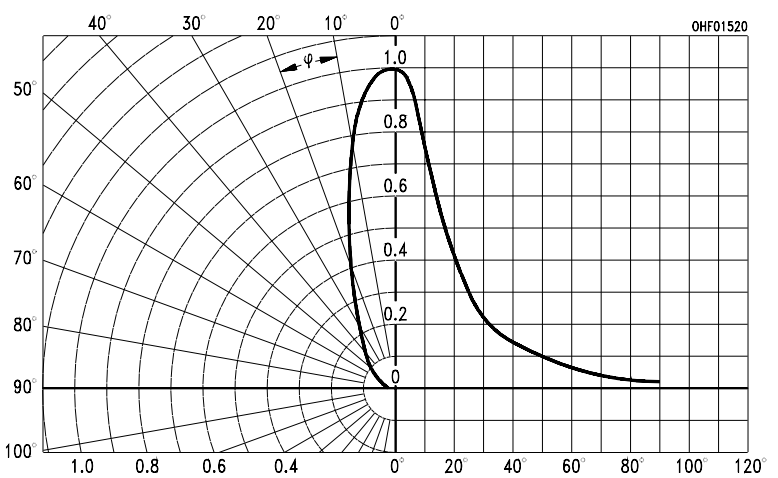
Dark Current
$I_R = f(V_R)$, $E = 0$



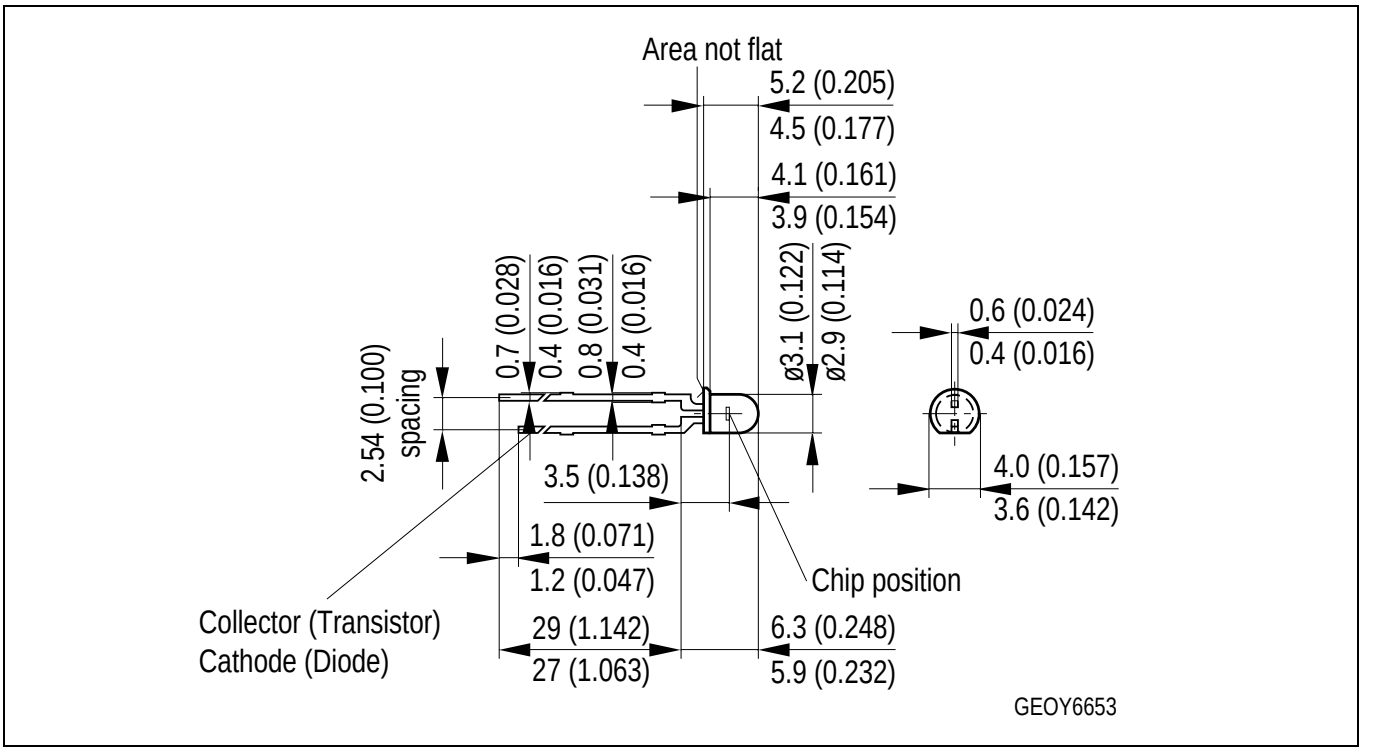
Total Power Dissipation
$P_{tot} = f(T_A)$



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



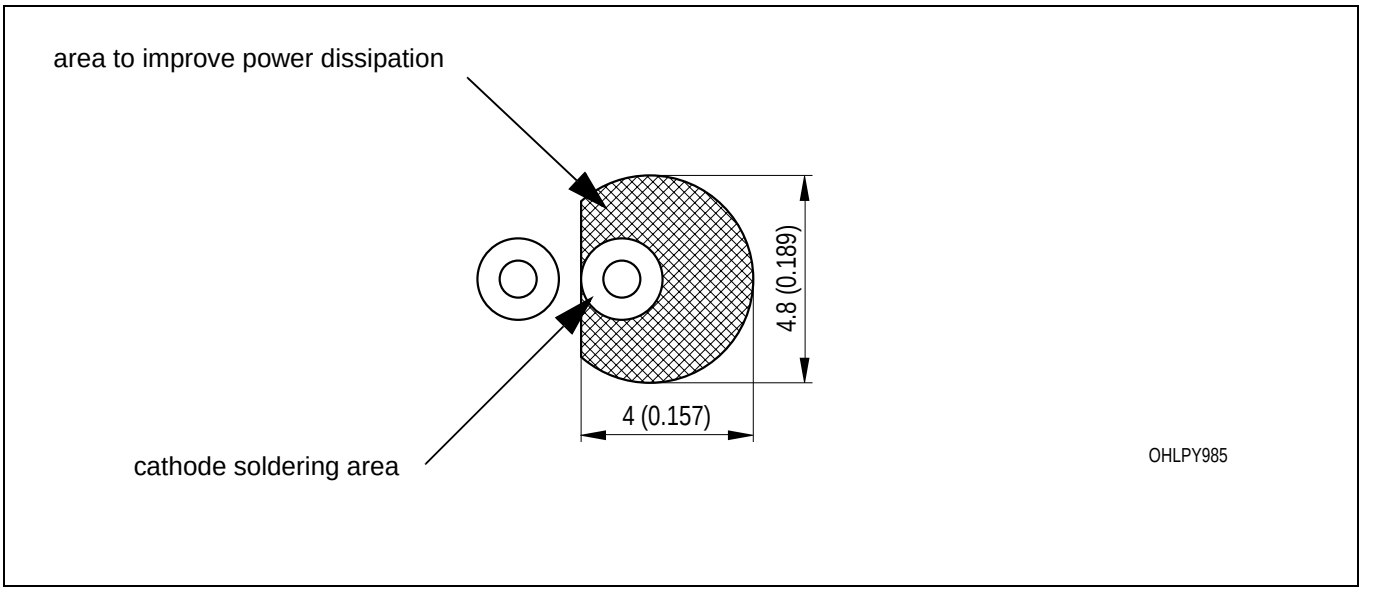
Maßzeichnung
Package Outlines



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

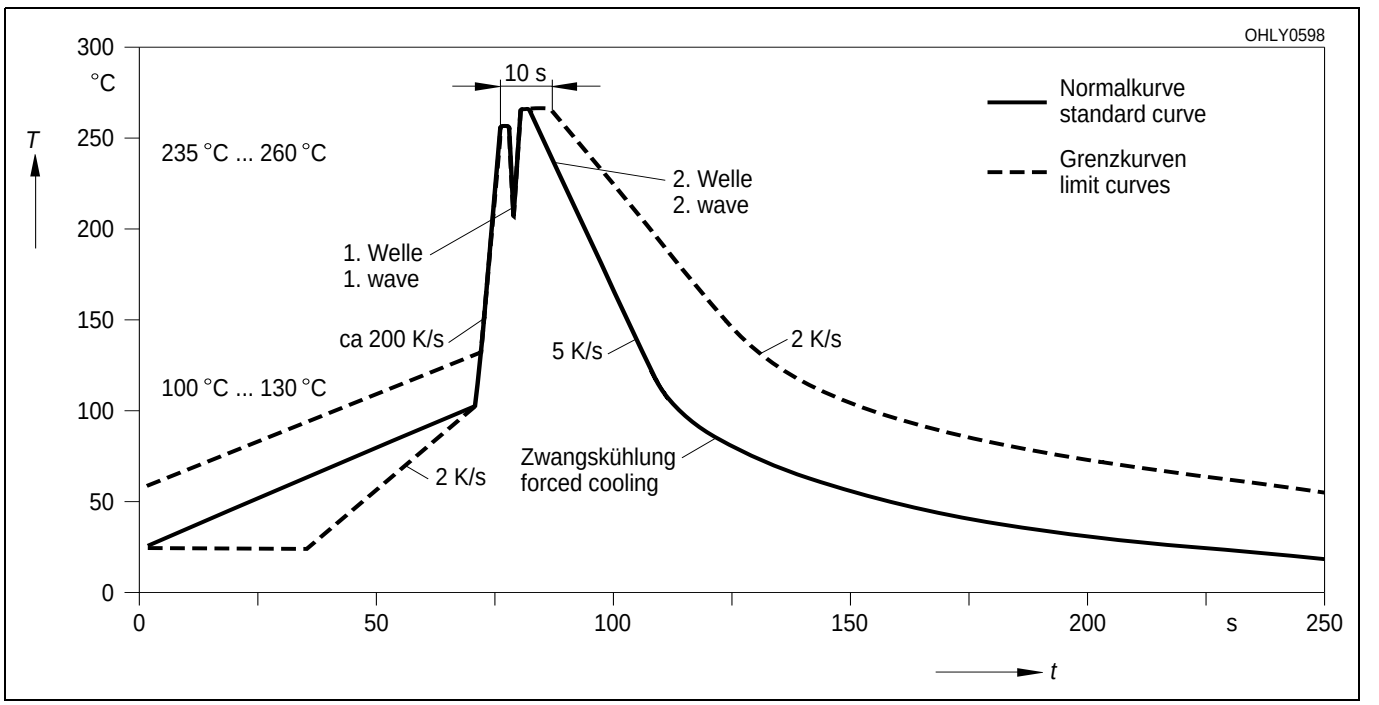
Empfohlenes Lötpaddesign
Recommended Solder Pad

Wellenlöten (TTW)
TTW Soldering



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

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



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