

**NPN-Silizium-Fototransistor**  
**Silicon NPN Phototransistor**  
**Lead (Pb) Free Product - RoHS Compliant**

**LPT 80 A**



**Wesentliche Merkmale**

- **Spektraler Bereich der Fotoempfindlichkeit:** 450 nm ...1100 nm
- **Gehäuse:** Sidelooker, Harz
- **Besonderheit des Bauteils:** hohe Fotoempfindlichkeit
- **Gehäusegleich:** IRED IRL 80 A, IRL 81 A

**Anwendungen**

- Fertigungs- und Kontrollanwendungen der Industrie
- Lichtschranken

**Features**

- **Spectral Range of Sensitivity:** 450 nm ...1100 nm
- **Package:** Sidelooker, Epoxy
- **Feature of the device:** high photosensitivity
- **Package Match:** IR emitter IRL 80 A, IRL 81 A

**Applications**

- A variety of manufacturing and monitoring applications
- Photointerrupters

Typ Type	Bestellnummer Ordering Code	Fotostrom, $E_e = 0.5\text{mW/cm}^2$ , $\lambda = 950\text{nm}$ , $V_{CE} = 5\text{V}$ Photocurrent $I_{pce}$ (mA)
LPT 80 A	Q68000A7852	$\geq 0.25$

**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
Kollektor-Emitterspannung Collector-emitter voltage	$V_{CE}$	30	V
Kollektorstrom Collector current	$I_C$	50	mA
Kollektorspitzenstrom, $\tau = 10 \mu s$ Collector surge current	$I_{CS}$	100	mA
Emitter-Kollektorspannung Emitter-collector voltage	$V_{EC}$	7	V
Verlustleistung, $T_A = 25 \text{ °C}$ Total power dissipation	$P_{tot}$	100	mW
Wärmewiderstand Thermal resistance	$R_{thJA}$	750	K/W

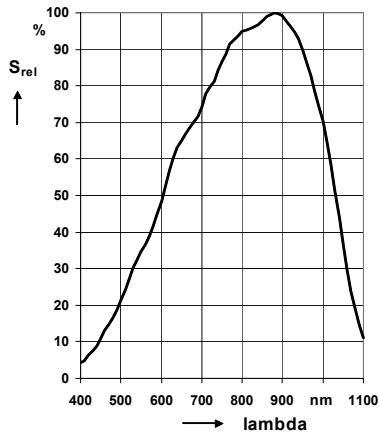
Kennwerte ( $T_A = 25\text{ °C}$ ,  $\lambda = 950\text{ nm}$ )

## Characteristics

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\text{ max}}$	880	nm
Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von $S_{\text{max}}$ Spectral range of sensitivity $S = 10\%$ of $S_{\text{max}}$	$\lambda$	450 ...1100	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	$A$	0.11	0.11
Abmessung der Chipfläche Dimensions of chip area	$L \times B$ $L \times W$	$0.5 \times 0.5$	$0.5 \times 0.5$
Halbwinkel Half angle	$\varphi$	$\pm 35$	Grad deg.
Kapazität, $V_{\text{CE}} = 0\text{ V}$ , $f = 1\text{ MHz}$ , $E = 0$ Capacitance	$C_{\text{CE}}$	7.5	pF
Dunkelstrom, $V_{\text{CE}} = 20\text{ V}$ Dark current	$I_{\text{CEO}}$	1 (< 50)	nA
Fotostrom Photocurrent $E_e = 0.5\text{ mW/cm}^2$ , $\lambda = 950\text{ nm}$ , $V_{\text{CE}} = 5\text{ V}$ , $E_v = 1000\text{ lx}$ , Normlicht/standard light A, $V_{\text{CE}} = 5\text{ V}$	$I_{\text{PCE}}$ $I_{\text{PCE}}$	> 0.25 3.2	mA mA
Anstiegs- und Abfallzeit Rise and fall time $R_L = 1\text{ k}\Omega$ , $V = 5\text{ V}$ , $\lambda = 950\text{ nm}$ , $I_C = 1\text{ mA}$	$t_r$ , $t_f$	10	$\mu\text{s}$
Kollektor-Emitter-Sättigungsspannung Collector-emitter saturation voltage (threefold saturated)	$V_{\text{CEsat}}$	150	mV

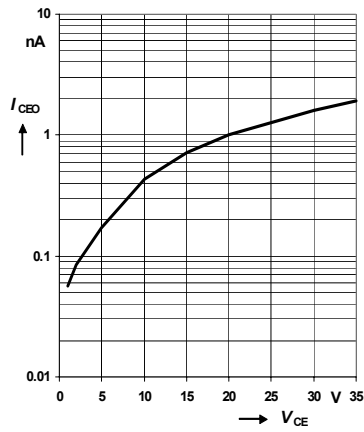
**Relative Spectral Sensitivity**

$S_{rel} = f(\lambda)$



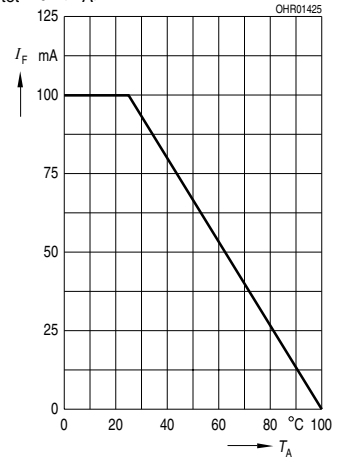
**Dark Current**

$I_{CE0} = f(V_{CE}), E = 0$



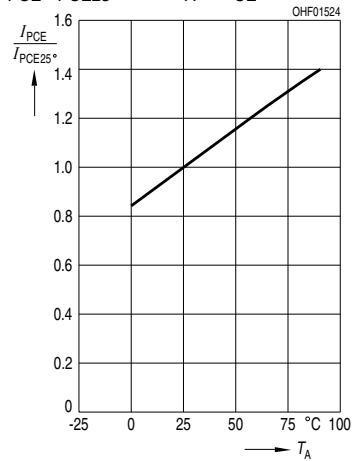
**Total Power Dissipation**

$P_{tot} = f(T_A)$



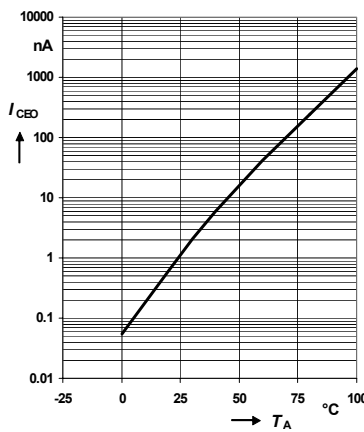
**Photocurrent**

$I_{PCE}/I_{PCE25^\circ} = f(T_A), V_{CE} = 5 V$



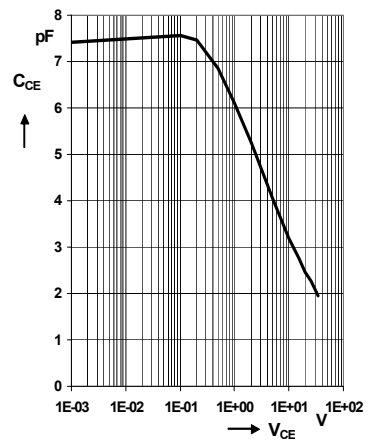
**Dark Current**

$I_{CE0} = f(T_A), V_{CE} = 5 V, E = 0$



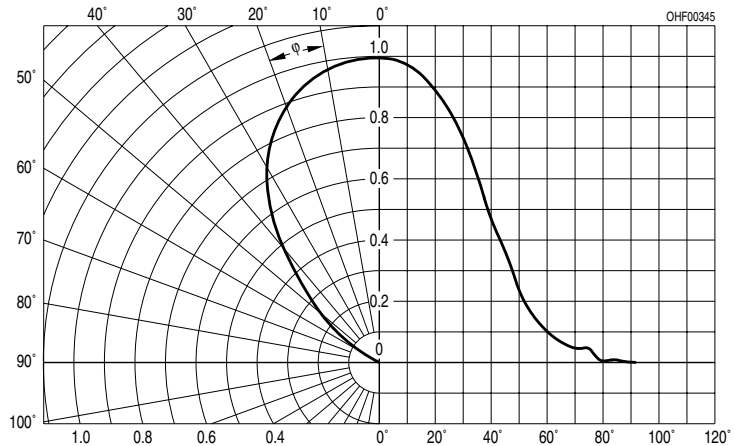
**Capacitance**

$C_{CE} = f(V_{CE}), f = 1 MHz, E = 0$

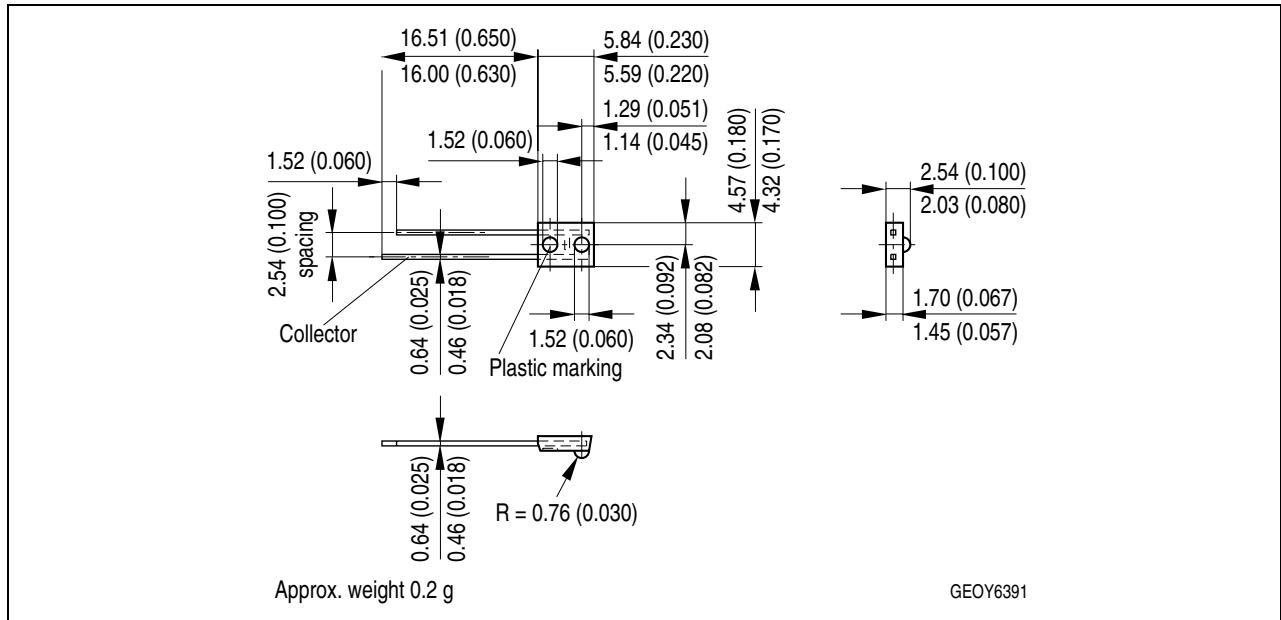


**Directional Characteristics**

$S_{rel} = f(\phi)$



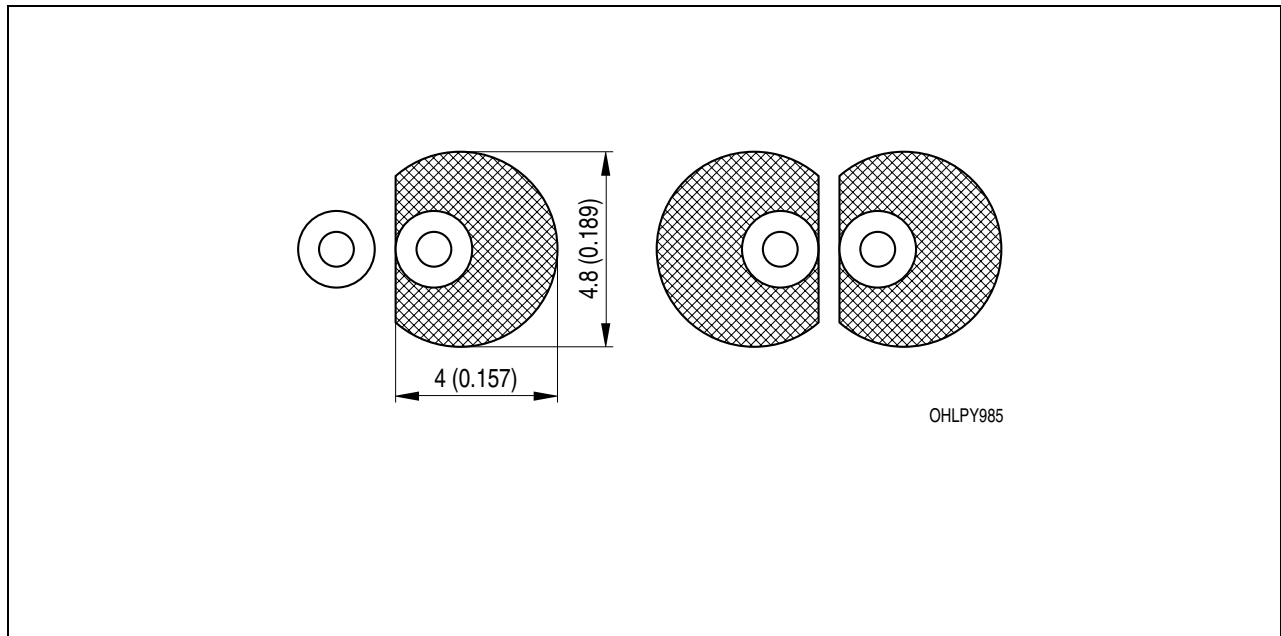
**Maßzeichnung  
Package Outlines**



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

**Empfohlenes Lötpad design Wellenlöten (TTW)**

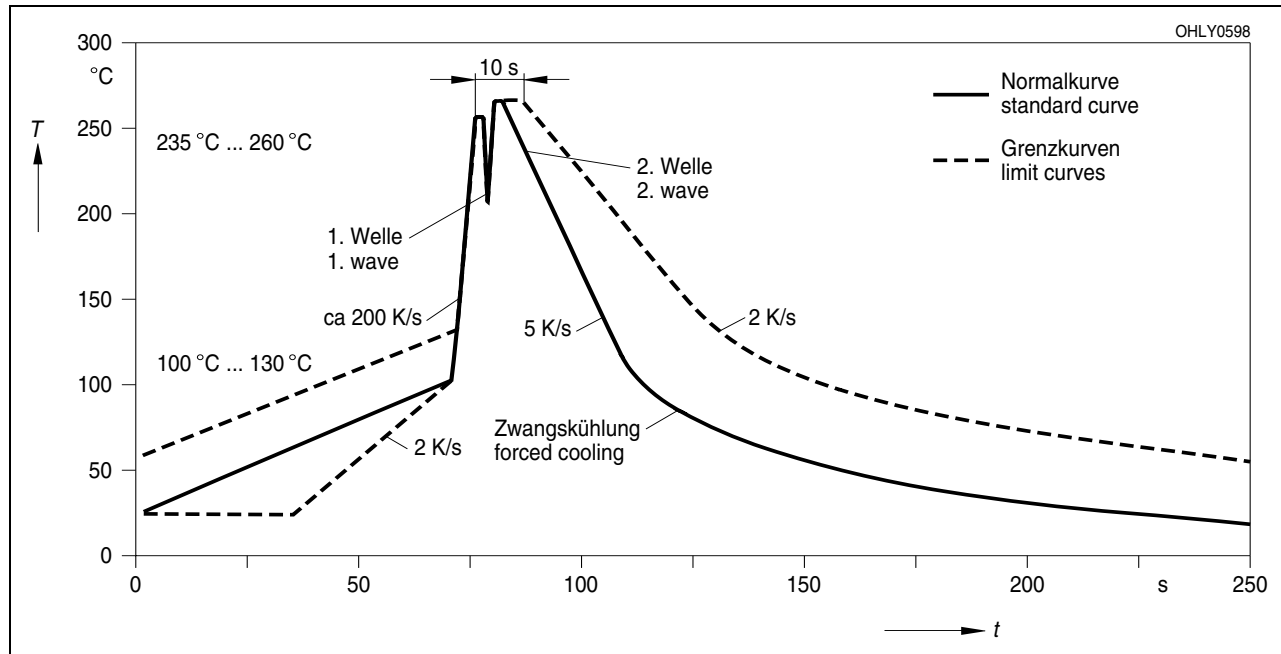
**Recommended Solder Pad TTW Soldering**



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

**Lötbedingungen**  
**Soldering Condition**  
**Wellenlöten (TTW)**  
**TTW Soldering**

(nach CECC 00802)  
(acc. to CECC 00802)



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