

GaAlAs-Infrarot-Sendediode
GaAlAs-Infrared Emitter
Lead (Pb) Free Product - RoHS Compliant

IRL 81 A



Wesentliche Merkmale

- GaAlAs-Lumineszenzdiode im nahen Infrarotbereich
- Rosa Kunststoff-Miniaturgehäuse, seitliche Abstrahlung
- Preisgünstig
- Lange Lebensdauer (Langzeitstabilität)
- Weiter Öffnungskegel ($\pm 25^\circ$)
- Passend zu Fototransistor LPT 80 A

Anwendungen

- Fertigungs- und Kontrollanwendungen der Industrie, die eine Unterbrechung des Lichtstrahls erfordern
- Lichtschranken

Features

- GaAlAs infrared emitting diode in the near infrared range
- Pink plastic package with lateral emission
- Cost-effective
- Long-term stability
- Wide beam ($\pm 25^\circ$)
- Matches phototransistor LPT 80 A

Applications

- For a variety of manufacturing and monitoring applications which require beam interruption
- Light barriers

Typ Type	Bestellnummer Ordering Code	Gehäuse Package
IRL 81 A	Q68000A8000	Hellrot eingefärbtes Kunststoffgehäuse, seitliche Abstrahlung, Anschlüsse im 2,54 mm-Raster Light-red colored plastic package, sidelooper, solder tabs 2.54 mm ($\frac{1}{10}$ ")

Grenzwerte ($T_A = 25\text{ °C}$)**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	5	V
Durchlassstrom Forward current	I_F	100	mA
Verlustleistung Power dissipation	P_{tot}	200	mW
Wärmewiderstand Thermal resistance	R_{thJA}	375	K/W

Kennwerte ($T_A = 25\text{ °C}$)**Characteristics**

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der Strahlung bei I_{max} Wavelength of peak emission	λ_{peak}	880	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max}	$\Delta\lambda$	80	nm
Abstrahlwinkel Half angle	φ	± 25	Grad deg.
Aktive Chipfläche Active chip area	A	0.09	mm ²
Abmessungen der aktiven Chipfläche Dimension of the active chip area	$L \times B$ $L \times W$	0.3×0.3	mm ²
Schaltzeiten, I_e von 10% auf 90% und von 90% auf 10%, bei $I_F = 100\text{ mA}$, $R_L = 50\ \Omega$ Switching times, I_e from 10% to 90% and from 90% to 10%, $I_F = 100\text{ mA}$, $R_L = 50\ \Omega$	t_r, t_f	0.6/0.5	μs
Kapazität Capacitance $V_R = 0\text{ V}$, $f = 1\text{ MHz}$	C_o	15	pF
Durchlassspannung, $I_F = 20\text{ mA}$ Forward voltage	V_F	1.5 (≤ 2.0)	V

Kennwerte ($T_A = 25\text{ °C}$)

Characteristics (cont'd)

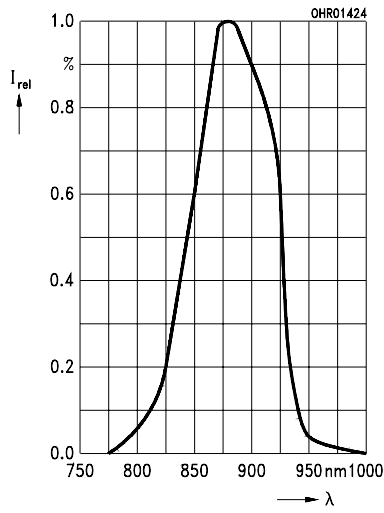
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Gesamtstrahlungsfluss, $I_F = 20\text{ mA}$ Total radiant flux	Φ_e	5	mW
Sperrstrom Reverse current $V_R = 5\text{ V}$	I_R	0.01 (≤ 1)	μA
Temperaturkoeffizient von I_e bzw. Φ_e , $I_F = 100\text{ mA}$ Temperature coefficient of I_e or Φ_e , $I_F = 100\text{ mA}$	TC_I	- 0.5	%/K
Temperaturkoeffizient von V_F , $I_F = 100\text{ mA}$ Temperature coefficient of V_F , $I_F = 100\text{ mA}$	TC_V	- 2	mV/K
Temperaturkoeffizient von λ , $I_F = 100\text{ mA}$ Temperature coefficient of λ , $I_F = 100\text{ mA}$	TC_λ	0.25	nm/K

Strahlstärke I_e in Achsrichtunggemessen bei einem Raumwinkel $\Omega = 0.01\text{ sr}$ **Radiant Intensity I_e in Axial Direction**at a solid angle of $\Omega = 0.01\text{ sr}$

Bezeichnung Parameter	Symbol	Werte Values	Einheit Unit
Strahlstärke Radiant intensity $I_F = 20\text{ mA}$, $t_p = 20\text{ ms}$	$I_{e\text{ min}}$ $I_{e\text{ typ}}$	1.0 2.5	mW/sr mW/sr

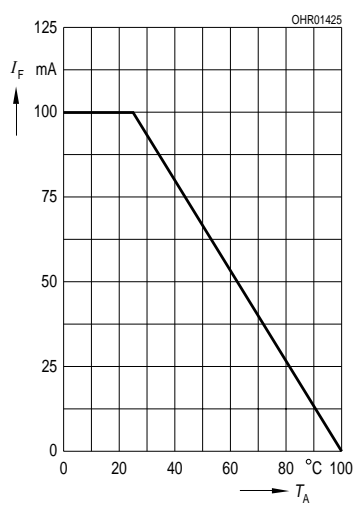
Relative Spectral Emission

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



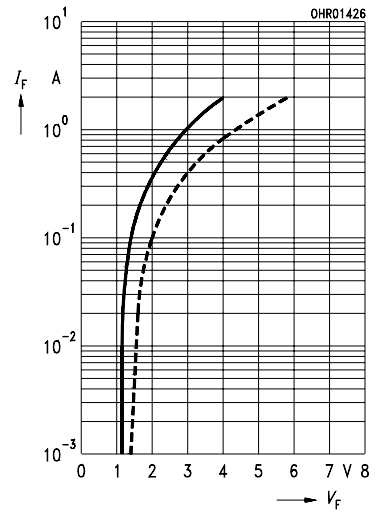
Max. Forward Current

$I_F = f(T_A)$



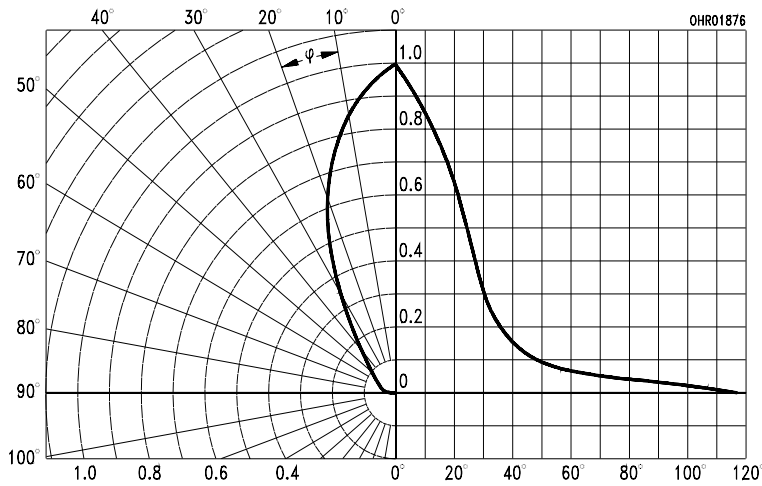
Forward Current

$I_F = f(V_F)$

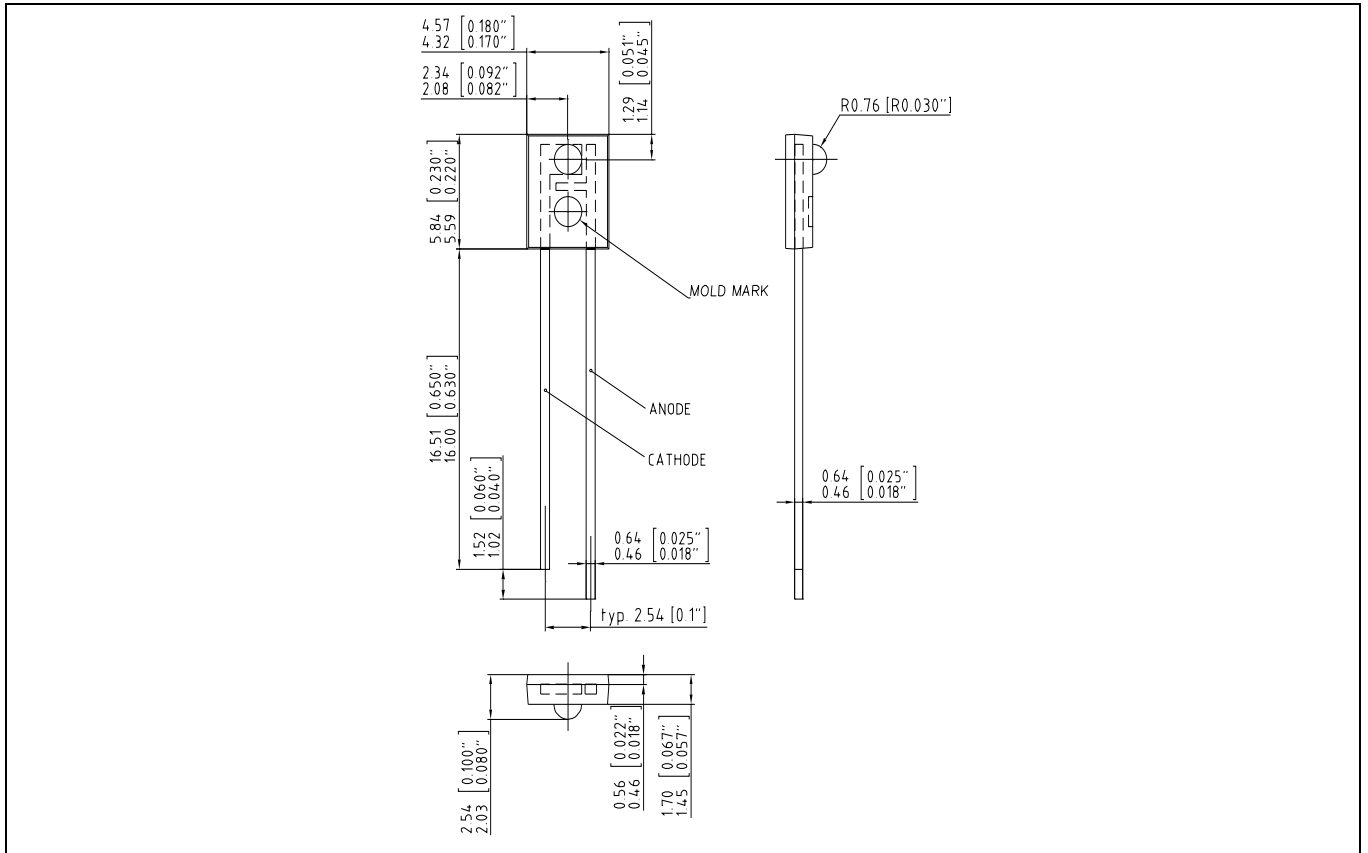


Directional Characteristics

$I_{rel} = f(\varphi)$



**Maßzeichnung
Package Outlines**

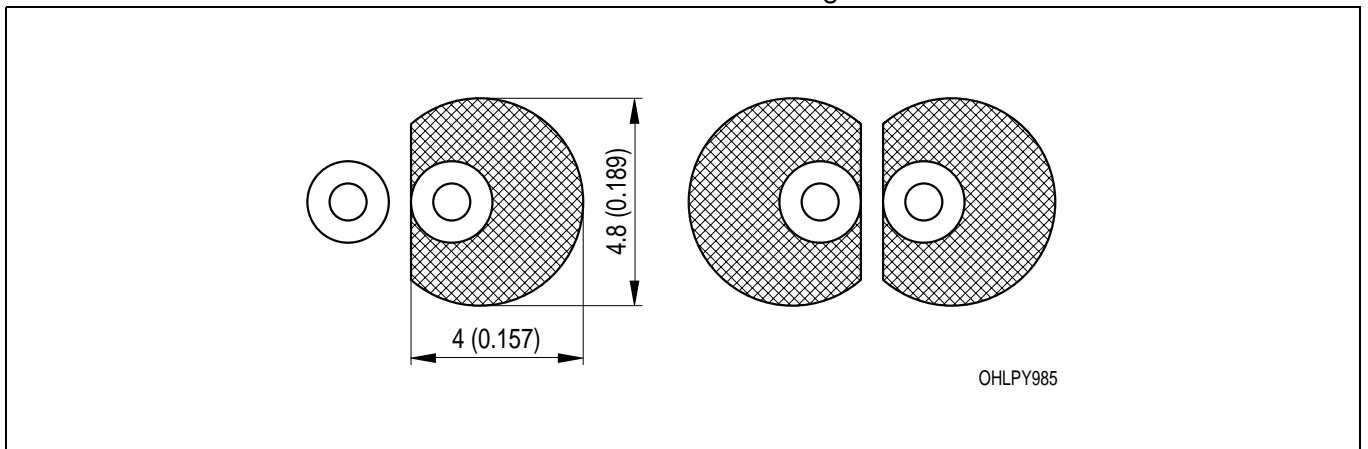


Maße in mm (inch) / Dimensions in mm (inch).

Approx. weight 0.2g

**Empfohlenes Lötpadesign
Recommended Solder Pad**

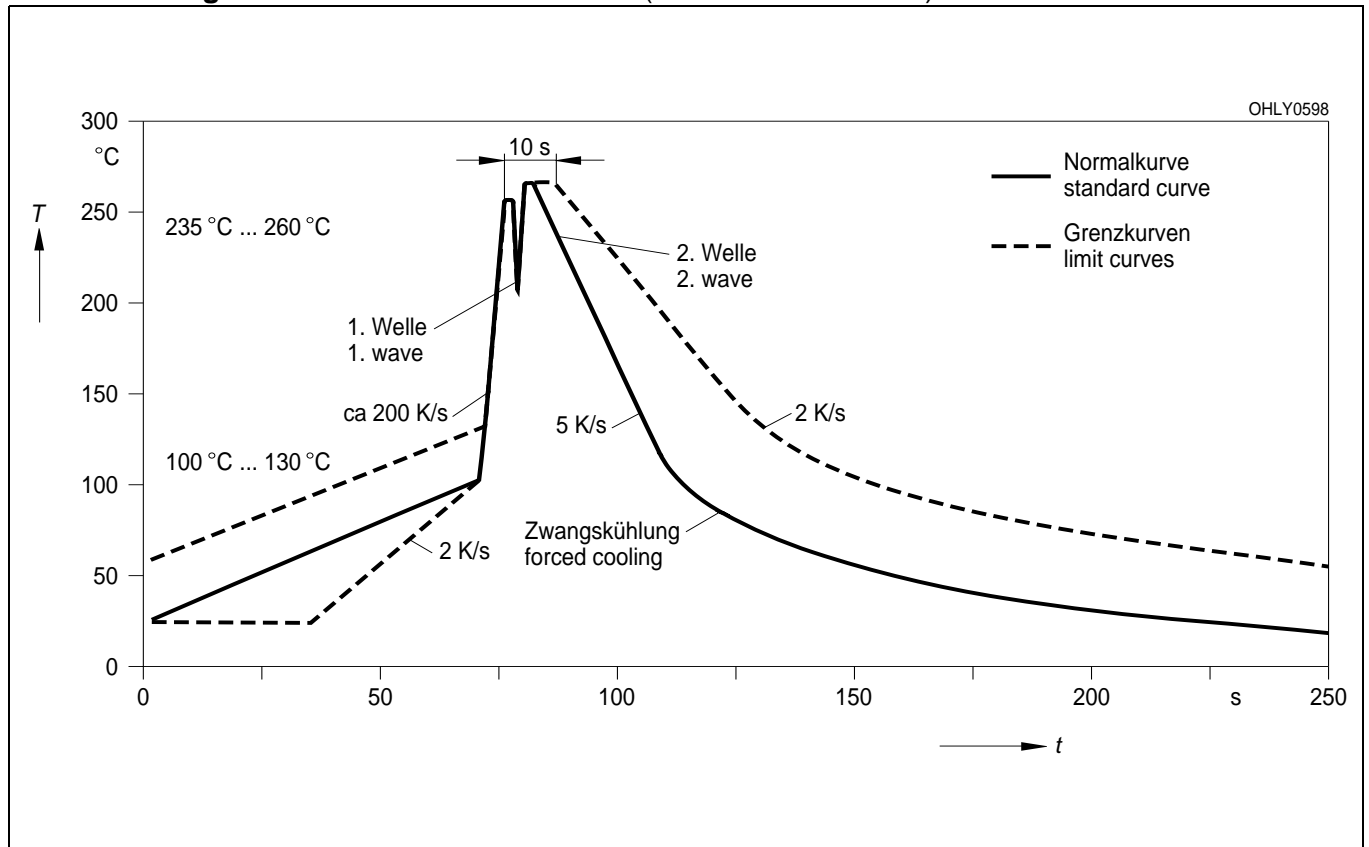
**Wellenlöten (TTW)
TTW Soldering**



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

Wellenlötten (TTW)
TTW Soldering

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



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