

**GaAs-IR-Lumineszenzdiode**  
**GaAs Infrared Emitter**  
**Lead (Pb) Free Product - RoHS Compliant**

**LD 274**



**Wesentliche Merkmale**

- GaAs-LED mit sehr hohem Wirkungsgrad
- Hohe Zuverlässigkeit
- Gute spektrale Anpassung an Si-Fotoempfänger
- Gehäusegleich mit SFH 484

**Anwendungen**

- IR-Fernsteuerung von Fernseh- und Rundfunkgeräten, Videorecordern, Lichtdimmern
- Gerätefernsteuerungen für Gleich- und Wechsellichtbetrieb
- Sensorik
- Diskrete Lichtschranken

**Features**

- Very highly efficient GaAs-LED
- High reliability
- Spectral match with silicon photodetectors
- Same package as SFH 484

**Applications**

- IR remote control of hi-fi and TV-sets, video tape recorders, dimmers
- Remote control for steady and varying intensity
- Sensor technology
- Discrete interrupters

Typ Type	Bestellnummer Ordering Code	Gehäuse Package
LD 274	Q62703Q1031	5-mm-LED-Gehäuse (T 1 3/4), graugetöntes Epoxy-Gießharz, Anschlüsse im 2.54-mm-Raster (1/10"), Kathodenkennzeichnung: Kürzerer Lötspieß, flat 5 mm LED package (T 1 3/4), grey colored epoxy resin lens, solder tabs lead spacing 2.54 mm (1/10"), cathode marking: shorter solder lead, flat
LD 274-2 <sup>1)</sup>	Q62703Q1819	
LD 274-3	Q62703Q1820	

<sup>1)</sup> Nur auf Anfrage lieferbar.

<sup>1)</sup> Available only on request.

**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
Stoßstrom, $t_p = 10\ \mu\text{s}$ , $D = 0$ Surge current	$I_{FSM}$	3	A
Verlustleistung Power dissipation	$P_{tot}$	165	mW
Wärmewiderstand Thermal resistance	$R_{thJA}$	450	K/W

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

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der Strahlung Wavelength at peak emission $I_F = 100\text{ mA}$ , $t_p = 20\text{ ms}$	$\lambda_{peak}$	950	nm
Spektrale Bandbreite bei 50% von $I_{max}$ Spectral bandwidth at 50% of $I_{max}$ $I_F = 100\text{ mA}$ , $t_p = 20\text{ ms}$	$\Delta\lambda$	55	nm
Abstrahlwinkel Half angle	$\varphi$	$\pm 10$	Grad
Aktive Chipfläche Active chip area	$A$	0.09	mm <sup>2</sup>
Abmessungen der aktiven Chipfläche Dimension of the active chip area	$L \times B$ $L \times W$	$0.3 \times 0.3$	mm <sup>2</sup>
Abstand Chipoberfläche bis Linsenscheitel Distance chip front to lens top	$H$	4.9 ... 5.5	mm
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%, $I_F = 100\text{ mA}$ , $R_L = 50\ \Omega$	$t_r, t_f$	0.5	$\mu\text{s}$

Kennwerte ( $T_A = 25\text{ °C}$ )

Characteristics (cont'd)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kapazität Capacitance $V_R = 0\text{ V}, f = 1\text{ MHz}$	$C_o$	25	pF
Durchlassspannung Forward voltage $I_F = 100\text{ mA}, t_p = 20\text{ ms}$ $I_F = 1\text{ A}, t_p = 100\text{ }\mu\text{s}$	$V_F$ $V_F$	1.30 ( $\leq 1.5$ ) 1.90 ( $\leq 2.5$ )	V V
Sperrstrom, $V_R = 5\text{ V}$ Reverse current	$I_R$	0.01 ( $\leq 1$ )	$\mu\text{A}$
Gesamtstrahlungsfluss Total radiant flux $I_F = 100\text{ mA}, t_p = 20\text{ ms}$	$\Phi_e$	20	mW
Temperaturkoeffizient von $I_e$ bzw. $\Phi_e$ , $I_F = 100\text{ mA}$ Temperature coefficient of $I_e$ or $\Phi_e$ , $I_F = 100\text{ mA}$	$TC_I$	- 0.55	%/K
Temperaturkoeffizient von $V_F$ , $I_F = 100\text{ mA}$ Temperature coefficient of $V_F$ , $I_F = 100\text{ mA}$	$TC_V$	- 1.5	mV/K
Temperaturkoeffizient von $\lambda$ , $I_F = 100\text{ mA}$ Temperature coefficient of $\lambda$ , $I_F = 100\text{ mA}$	$TC_\lambda$	+ 0.3	nm/K

**Gruppierung der Strahlstärke  $I_e$  in Achsrichtung**gemessen bei einem Raumwinkel  $\Omega = 0.001$  sr**Grouping of Radiant Intensity  $I_e$  in Axial Direction**at a solid angle of  $\Omega = 0.001$  sr

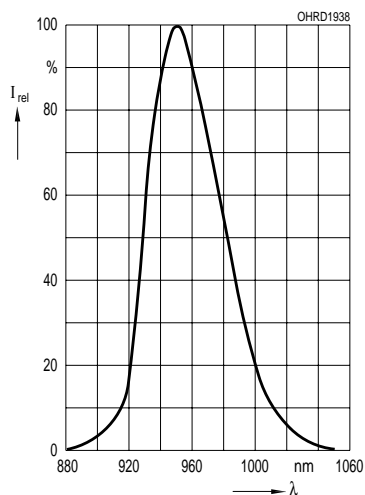
Bezeichnung Parameter	Symbol Symbol	Wert Value			Einheit Unit
		LD 274	LD 274-2 <sup>1)</sup>	LD 274-3	
Strahlstärke Radiant intensity $I_F = 100$ mA, $t_p = 20$ ms	$I_{e \text{ min}}$ $I_{e \text{ max}}$	50 –	50 100	80 –	mW/sr mW/sr
Strahlstärke Radiant intensity $I_F = 1$ A, $t_p = 100$ $\mu$ s	$I_{e \text{ typ.}}$	700	600	800	mW/sr

1) Nur auf Anfrage lieferbar.

1) Available only on request.

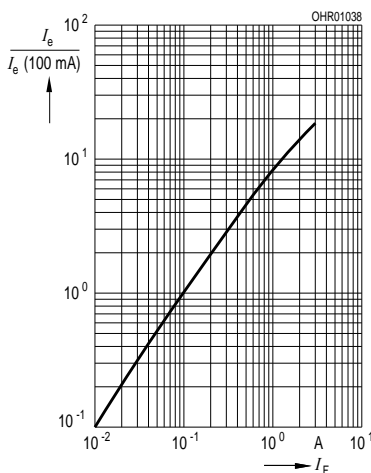
**Relative Spectral Emission**

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



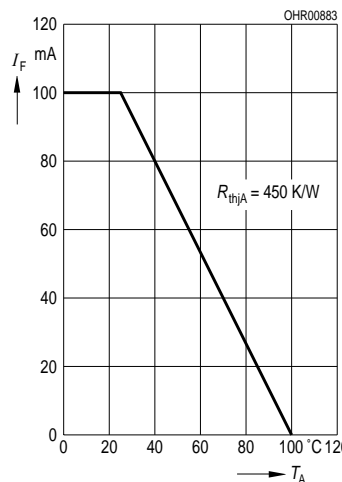
**Radiant Intensity**  $\frac{I_e}{I_e(100 \text{ mA})} = f(I_F)$

Single pulse,  $t_p = 20 \mu\text{s}$



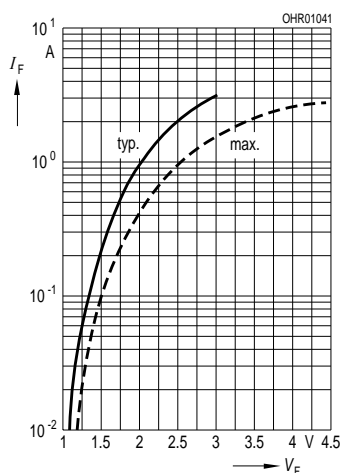
**Max. Permissible Forward Current**

$I_F = f(T_A)$



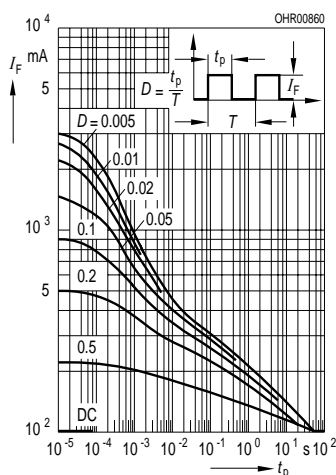
**Forward Current**

$I_F = f(V_F)$ , single pulse,  $t_p = 20 \mu\text{s}$



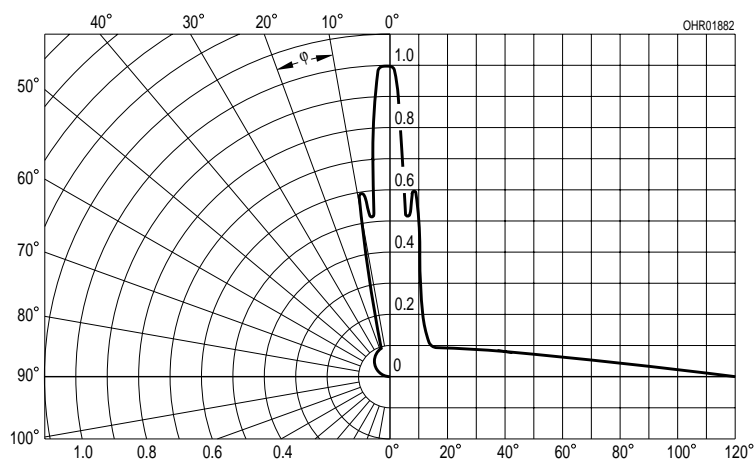
**Permissible Pulse Handling Capability**

$I_F = f(\tau)$ ,  $T_C \leq 25 \text{ }^\circ\text{C}$ , duty cycle  $D = \text{parameter}$



**Radiation Characteristics,**

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

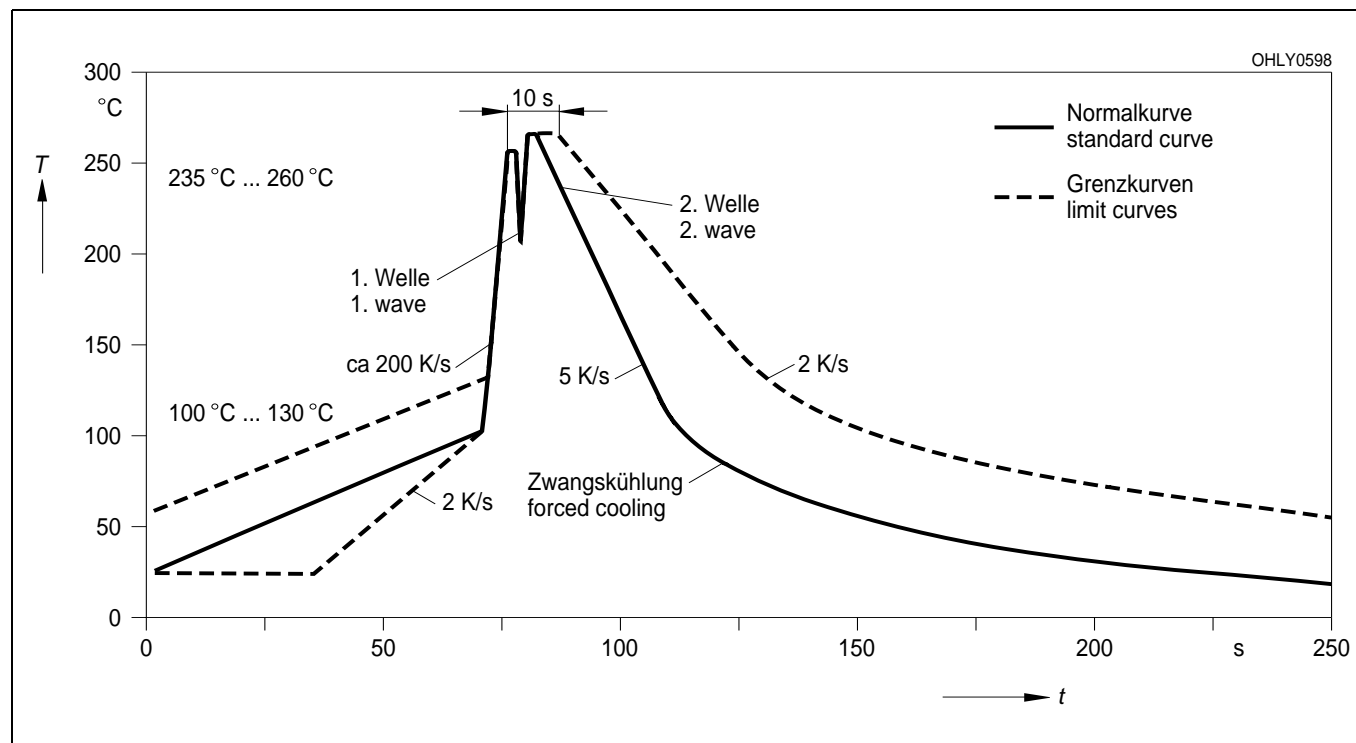




**Lötbedingungen**  
**Soldering Conditions**  
**Wellenlöten (TTW)**  
**TTW Soldering**

(nach CECC 00802)

(acc. to CECC 00802)



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