

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

**LD 271**  
**LD 271 H**  
**LD 271 L**  
**LD 271 LH**



**Wesentliche Merkmale**

- GaAs-LED in 5mm radial-Gehäuse
- Typische Peakwellenlänge 950nm
- Hohe Zuverlässigkeit
- Mit verschiedenen Beinchenlängen lieferbar
- Variante mit "stand-off" lieferbar
- TTW Löten geeignet

**Anwendungen**

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

**Features**

- GaAs-LED in 5mm radial package (T 1<sup>3/4</sup>)
- Typical peak wavelength 950nm
- High reliability
- Available with two different lead lengths
- Version with stand-off available
- Suitable for TTW soldering

**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	Strahlstärkegruppierung <sup>1)</sup> ( $I_F = 100\text{mA}$ , $t_p = 20\text{ ms}$ ) Radiant intensity grouping <sup>1)</sup> $I_e$ (mW/sr)
LD 271	Q62703Q0148	15 (>10)
LD 271 L	Q62703Q0833	
LD 271 H	Q62703Q0256	>16
LD 271 LH	Q62703Q0838	

<sup>1)</sup> gemessen bei einem Raumwinkel  $\Omega = 0.01\text{ sr}$   
measured at a solid angle of  $\Omega = 0.01\text{ sr}$

**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	$V_R$	5	V
Durchlaßstrom Forward current	$I_F$	130	mA
Stoßstrom, $t_p = 10 \mu s, D = 0$ Surge current	$I_{FSM}$	3.5	A
Verlustleistung Power dissipation	$P_{tot}$	220	mW
Wärmewiderstand Thermal resistance	$R_{thJA}$	330	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 $I_{max}$ $I_F = 100 \text{ mA}$	$\Delta\lambda$	55	nm
Abstrahlwinkel Half angle	$\varphi$	$\pm 25$	Grad deg.
Aktive Chipfläche Active chip area	$A$	0.25	mm <sup>2</sup>
Abmessungen der aktiven Chipfläche Dimensions of the active chip area	$L \times B$ $L \times W$	$0.5 \times 0.5$	mm <sup>2</sup>
Abstand Chipoberfläche bis Linsenscheitel Distance chip front to lens top	$H$	4.0 ... 4.6	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%, $I_F = 100 \text{ mA}, R_L = 50 \Omega$	$t_r, t_f$	1	$\mu s$

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

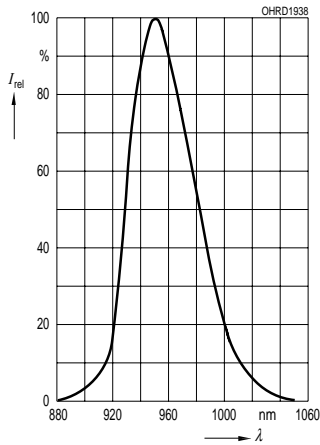
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kapazität, $V_R = 0\text{ V}$ , $f = 1\text{ MHz}$ Capacitance	$C_o$	40	pF
Durchlaßspannung Forward voltage $I_F = 100\text{ mA}$ , $t_p = 20\text{ ms}$ $I_F = 1\text{ A}$ , $t_p = 100\text{ }\mu\text{s}$	$V_F$ $V_F$	1.30 ( $\leq 1.5$ ) 1.90 ( $\leq 2.5$ )	V V
Sperrstrom, $V_R = 5\text{ V}$ Reverse current	$I_R$	0.01 ( $\leq 1$ )	$\mu\text{A}$
Gesamtstrahlungsfluß Total radiant flux $I_F = 100\text{ mA}$ , $t_p = 20\text{ ms}$	$\Phi_e$	18	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  $\Omega = 0.01\text{ sr}$ 
**Grouping of Radiant Intensity  $I_e$  in Axial Direction**
at a solid angle of  $\Omega = 0.01\text{ sr}$ 

Bezeichnung Parameter	Symbol Symbol	Wert Value		Einheit Unit
		LD 271 LD 271 L	LD 271 H LD 271 LH	
Strahlstärke Radiant intensity $I_F = 100\text{ mA}$ , $t_p = 20\text{ ms}$ $I_F = 1\text{ A}$ , $t_p = 100\text{ }\mu\text{s}$	$I_e$ $I_{e\text{ typ.}}$	15 (> 10) 120	> 16	mW/sr mW/sr

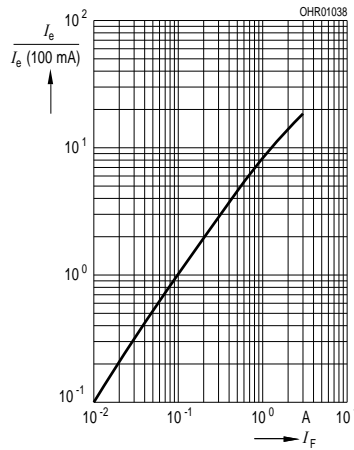
**Relative Spectral emission**

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



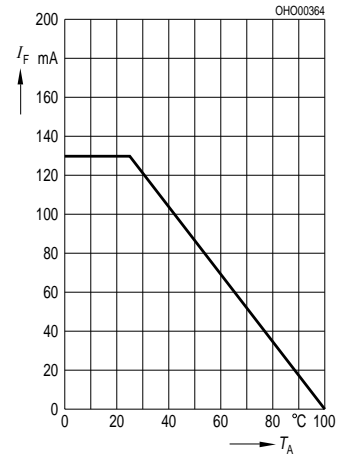
**Radiant Intensity**  $\frac{I_e}{I_e 100 \text{ mA}} = f(I_F)$

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



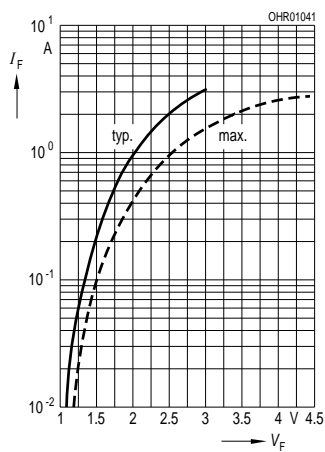
**Max. Permissible Forward Current**

$I_F = f(T_A)$



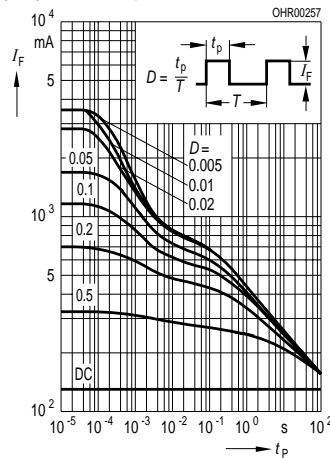
**Forward Current**

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

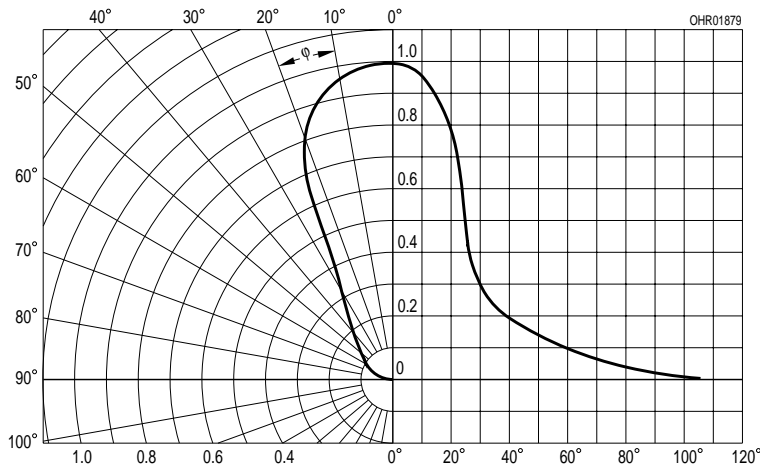


**Permissible Pulse Handling Capability**

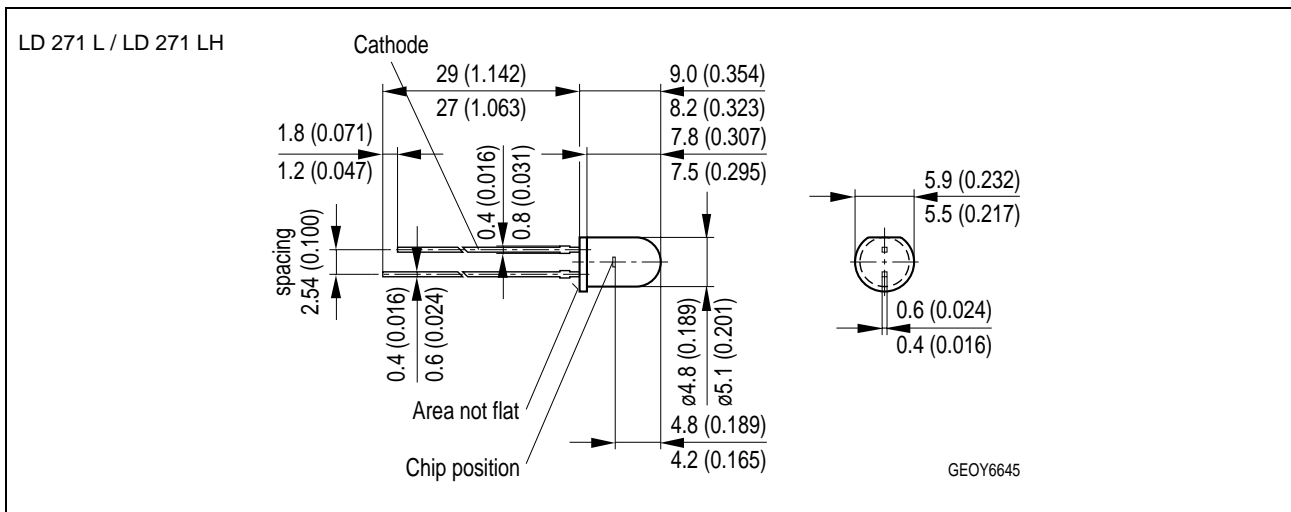
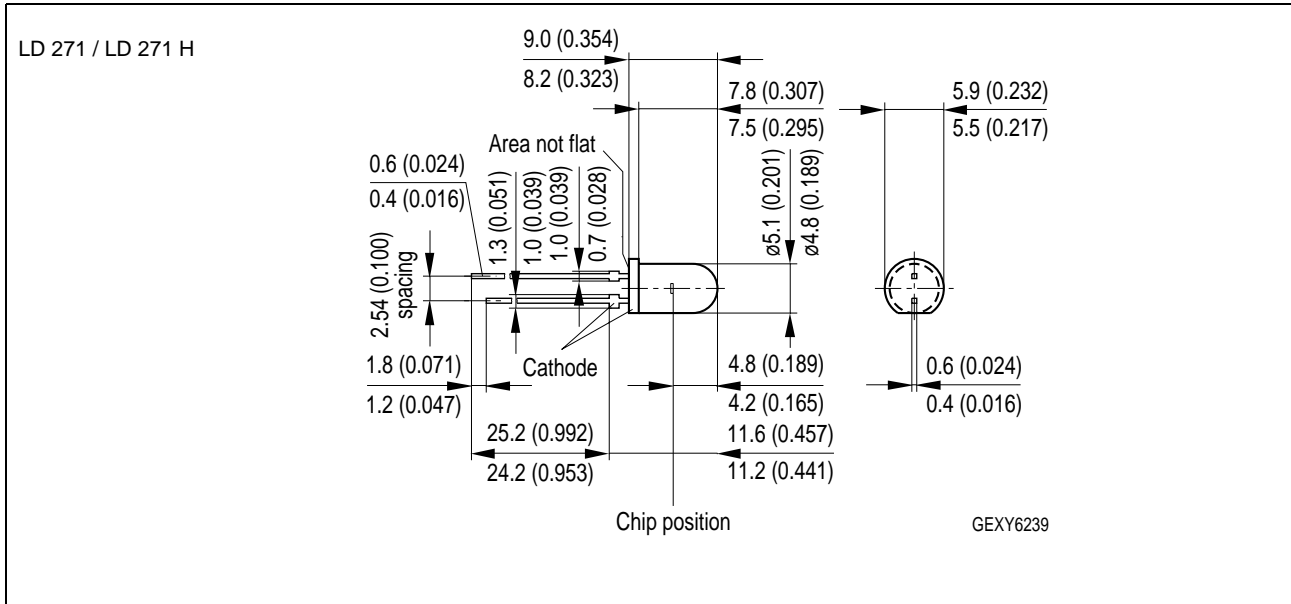
$I_F = f(\tau)$ ,  $T_C = 25 \text{ }^\circ\text{C}$ , duty cycle  $D = \text{parameter}$



**Radiation Characteristics**  $I_{rel} = f(\varphi)$



**Maßzeichnung  
Package Outlines**



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

Gehäusefarbe: grau

Brechungsindex Verguss: 1.53

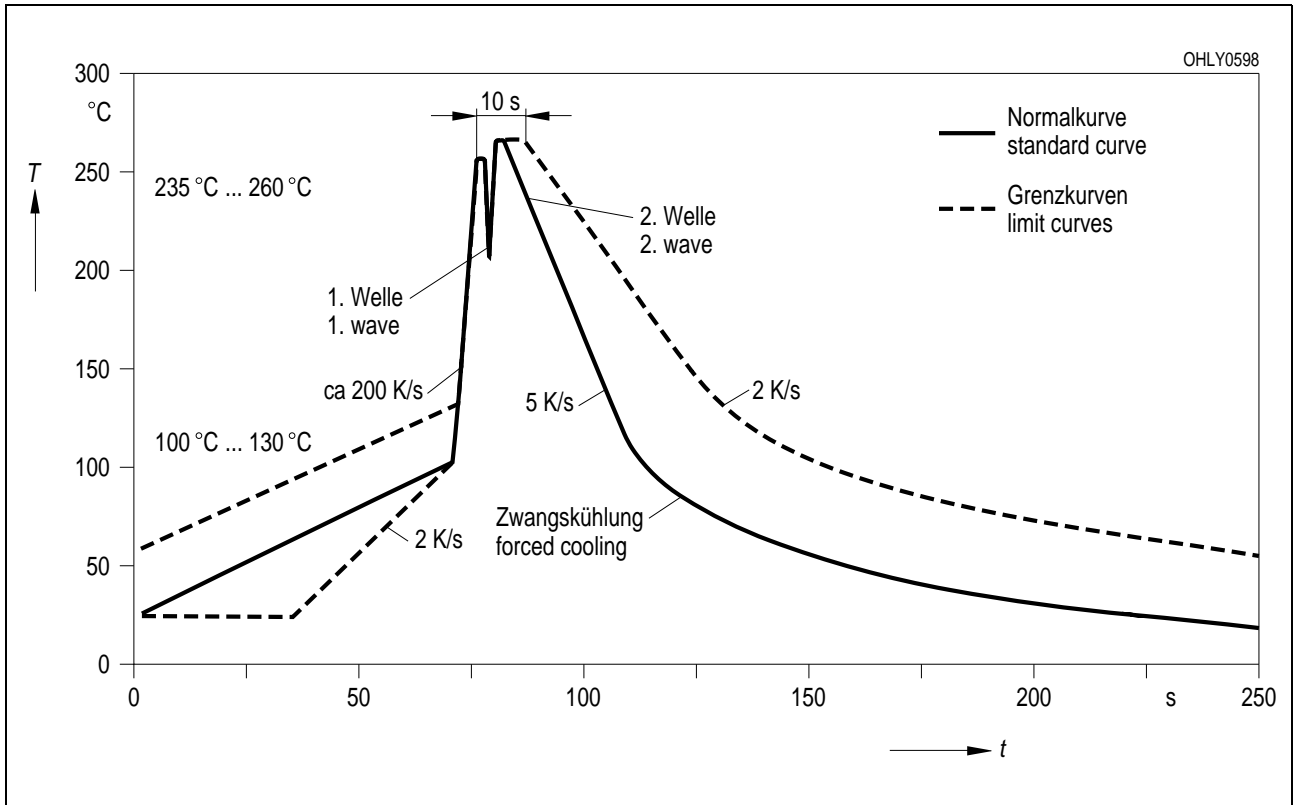
Package Colour: grey

Refractive index resin: 1.53

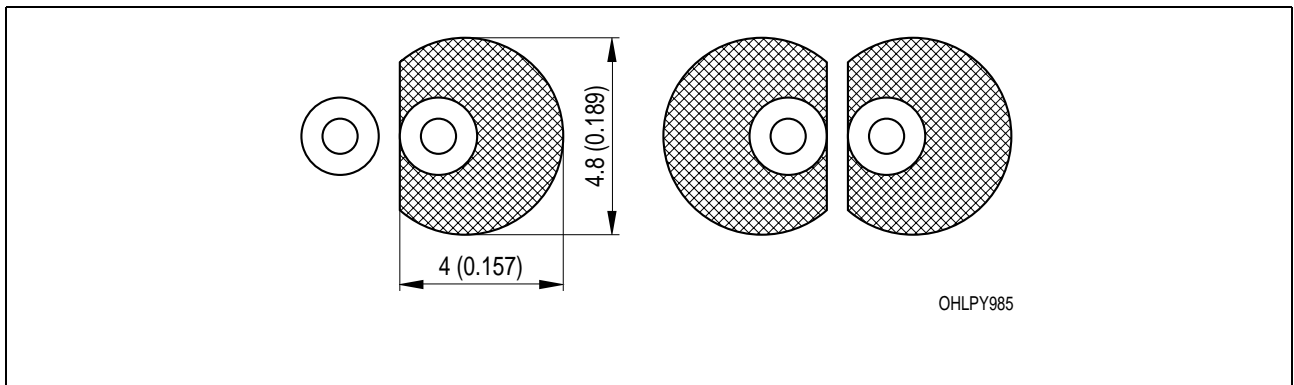
**Lötbedingungen**  
**Soldering Conditions**

**Wellenlöten (TTW)**  
**TTW Soldering**

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



**Empfohlenes Lötpaddesign** Wellenlöten (TTW)  
**Recommended Solder Pad** TTW Soldering



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

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