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

Features

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

Anwendungen

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

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[1)]	Q62703Q1819	
LD 274-3	Q62703Q1820	

1) Nur auf Anfrage lieferbar.

1) Available only on request.

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Grenzwerte (T_A = 25 °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 µs, 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 °C)
Characteristics

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der Strahlung Wavelength at peak emission I_F = 100 mA, t_p = 20 ms	λ_{peak}	950	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max} I_F = 100 mA, t_p = 20 ms	$\Delta\lambda$	55	nm
Abstrahlwinkel Half angle	φ	± 10	Grad
Aktive Chipfläche Active chip area	A	0.09	mm²
Abmessungen der aktiven Chipfläche Dimension of the active chip area	$L \times B$ $L \times W$	0.3 × 0.3	mm²
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 mA, R_L = 50 Ω Switching times, I_e from 10% to 90% and from 90% to 10%, I_F = 100 mA, R_L = 50 Ω	t_r, t_f	0.5	µs

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

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Kapazität Capacitance V_R = 0 V, f = 1 MHz	C_o	25	pF
Durchlassspannung Forward voltage I_F = 100 mA, t_p = 20 ms I_F = 1 A, t_p = 100 µs	 V_F V_F	 1.30 (≤ 1.5) 1.90 (≤ 2.5)	 V V
Sperrstrom, V_R = 5 V Reverse current	I_R	0.01 (≤ 1)	µA
Gesamtstrahlungsfluss Total radiant flux I_F = 100 mA, t_p = 20 ms	Φ_e	20	mW
Temperaturkoeffizient von I_e bzw. Φ_e, I_F = 100 mA Temperature coefficient of I_e or Φ_e, I_F = 100 mA	TC_I	– 0.55	%/K
Temperaturkoeffizient von V_F, I_F = 100 mA Temperature coefficient of V_F, I_F = 100 mA	TC_V	– 1.5	mV/K
Temperaturkoeffizient von λ, I_F = 100 mA Temperature coefficient of λ, I_F = 100 mA	TC_λ	+ 0.3	nm/K

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

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

1) Nur auf Anfrage lieferbar.

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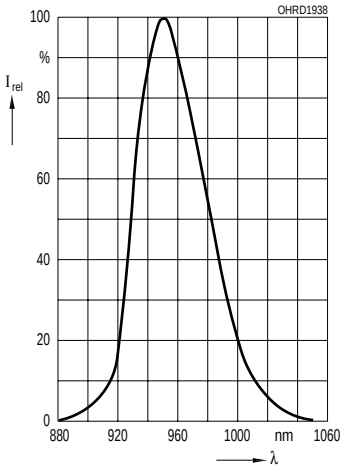
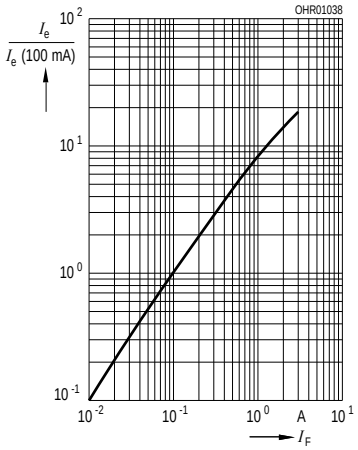
Relative Spectral Emission
$I_{rel} = f(\lambda)$

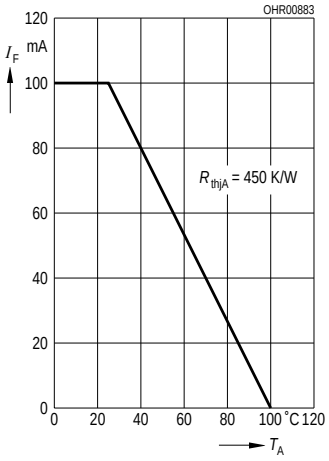


Radiant Intensity $\frac{I_e}{I_e\ 100\ mA} = f(I_F)$

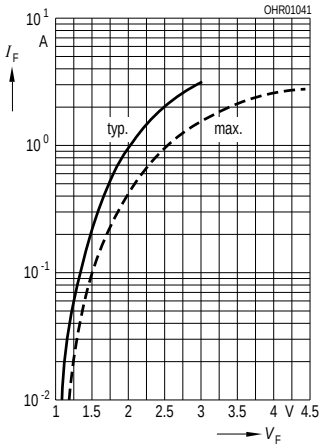
Single pulse, t_p = 20 µs



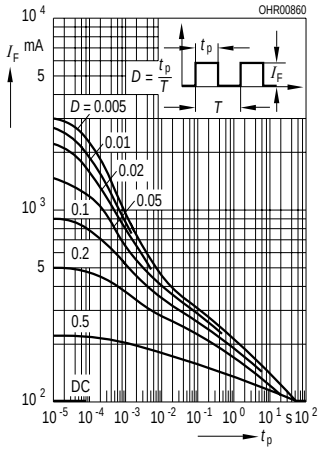
Max. Permissible Forward Current
$I_F = f(T_A)$



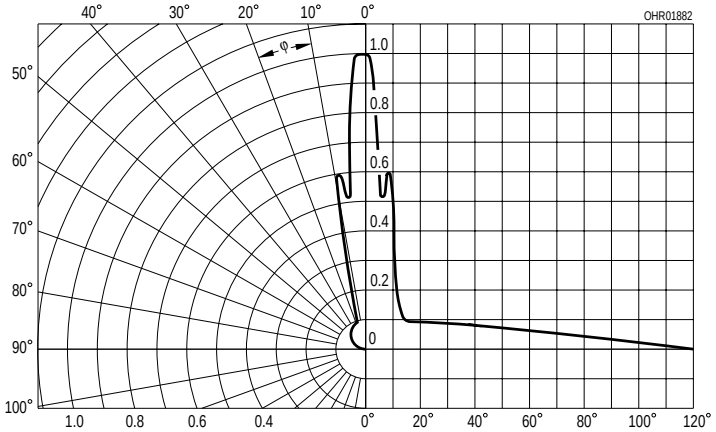
Forward Current
$I_F = f(V_F)$, single pulse, t_p = 20 µs



Permissible Pulse Handling Capability $I_F = f(\tau)$, $T_C \leq 25$ °C, duty cycle D = parameter



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



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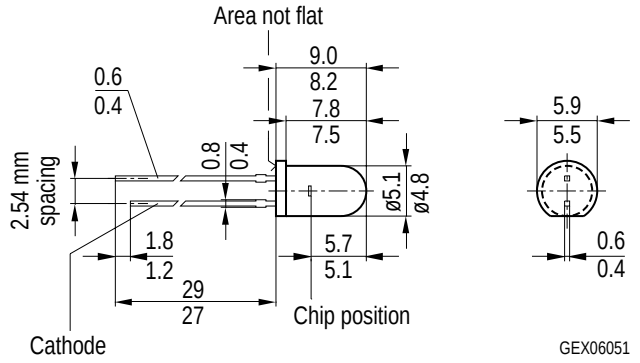
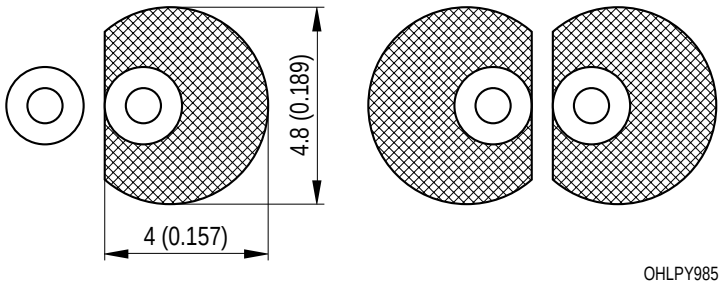
Maßzeichnung
Package Outlines



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

Empfohlenes Lötpaddesign Wellenlöten (TTW)
Recommended Solder Pad TTW Soldering



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

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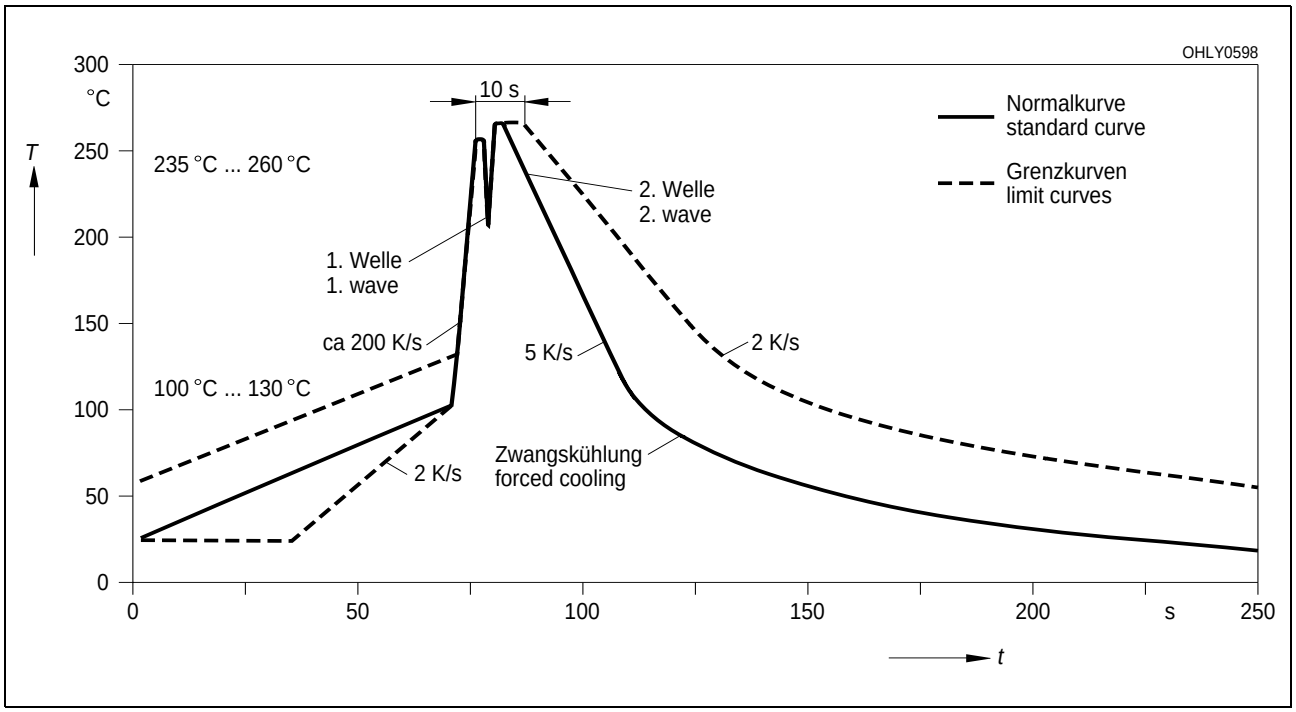
Lötbedingungen
Soldering Conditions
Wellenlöten (TTW) (nach CECC 00802)
TTW Soldering (acc. to CECC 00802)



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