GaAs-IR-Lumineszenzdiode
GaAs Infrared Emitter

LD 271
LD 271 H
LD 271 L
LD 271 HL

Wesentliche Merkmale

- GaAs-LED mit sehr hohem Wirkungsgrad
- Hohe Zuverlässigkeit
- Gute spektrale Anpassung an Si-Fotoempfänger
- Gehäusegleich mit SFH 300, SFH 203

Features

- Very highly efficient GaAs-LED
- High reliability
- Spectral match with silicon photodetectors
- Same package as SFH 300, SFH 203

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 271	Q62703-Q148	5-mm-LED-Gehäuse (T 1 $^3/_4$), graugetöntes Epoxy-Gießharz, Lötspieße im 2.54-mm-Raster ($^1/_{10}$'') 5 mm LED package (T 1 $^3/_4$), grey colored epoxy resin lens, solder tabs lead spacing 2.54 mm ($^1/_{10}$'')
LD 271 L	Q62703-Q833	
LD 271 H	Q62703-Q256	
LD 271 HL	Q62703-Q838	

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 µs, 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 °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	$\Delta\lambda$	55	nm
Abstrahlwinkel Half angle	φ	± 25	Grad deg.
Aktive Chipfläche Active chip area	A	0.25	mm^2
Abmessungen der aktiven Chipfläche Dimensions of the active chip area	$L \times B$ $L \times W$	0.5 × 0.5	mm
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 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	1	µs

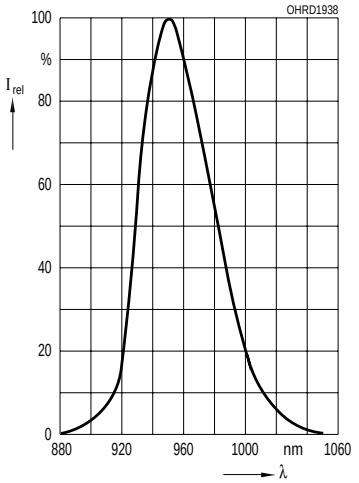
Kennwerte (T_A = 25 °C)
Characteristics (cont'd)

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Kapazität, V_R = 0 V, f = 1 MHz Capacitance	C_o	40	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	18	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

Gruppierung der Strahlstärke I_e in Achsrichtung
gemessen bei einem Raumwinkel Ω = 0.01 sr
Grouping of Radiant Intensity I_e in Axial Direction
at a solid angle of Ω = 0.01 sr

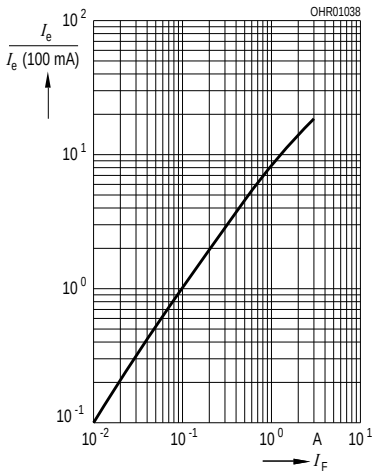
Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**		**Einheit** **Unit**
		LD 271 **LD 271 L**	**LD 271 H** **LD 271 HL**	
Strahlstärke Radiant intensity I_F = 100 mA, t_p = 20 ms I_F = 1 A, t_p = 100 µs	 I_e $I_{e\ typ.}$	 15 (≥ 10) 120	 > 16	 mW/sr mW/sr

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

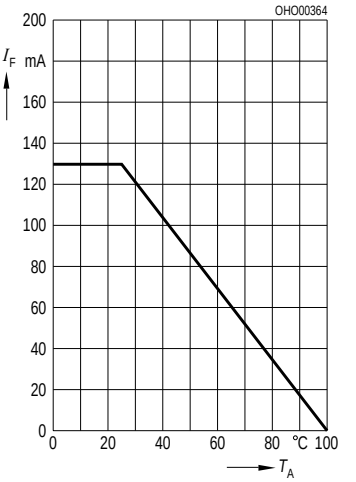


Radiant Intensity $\frac{I_e}{I_e\ 100\ mA} = f(I_F)$

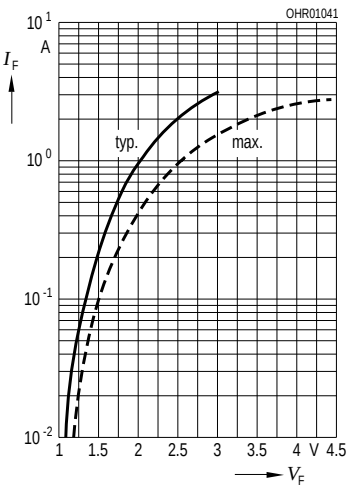
Single pulse, t_p = 20 µs



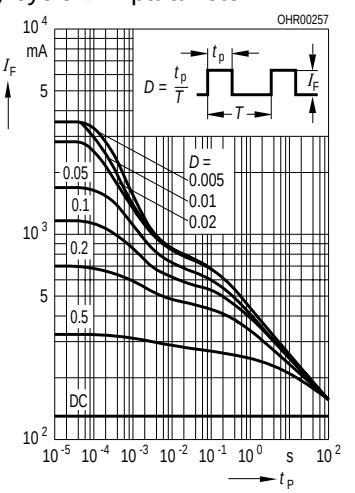
Max. Permissible Forward Current
$I_F = f(T_A)$



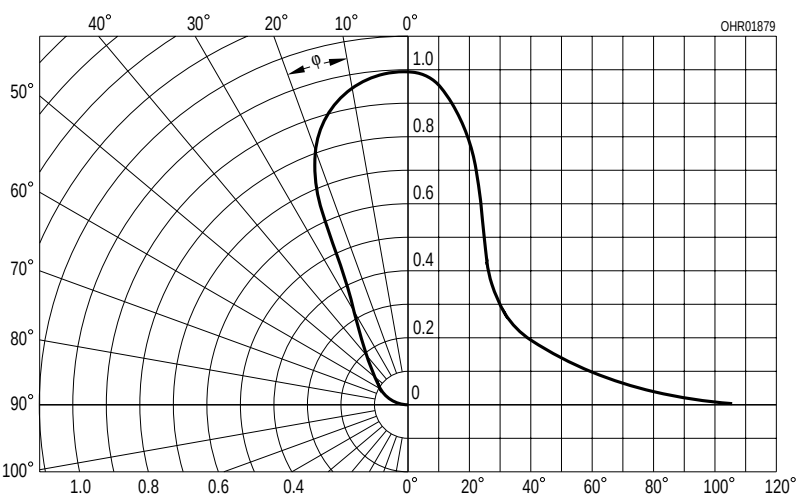
Forward Current
$I_F = f(V_F)$, single pulse, t_p = 20 µs



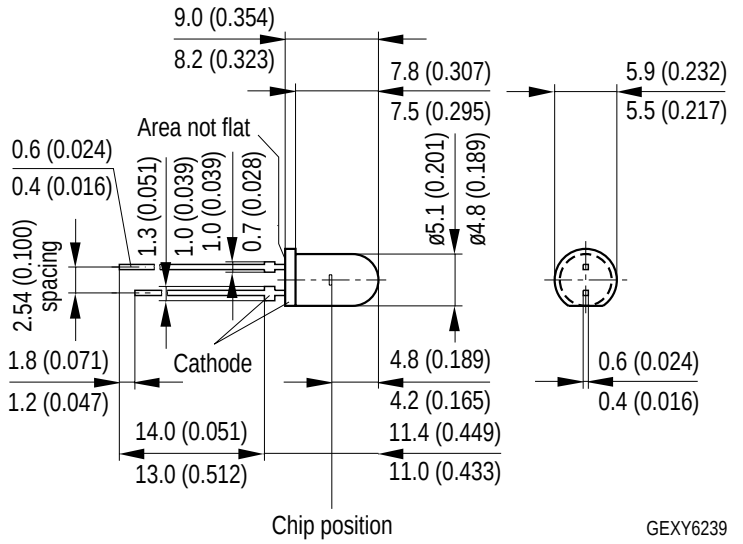
Permissible Pulse Handling Capability $I_F = f(\tau)$, T_C = 25 °C, duty cycle D = parameter

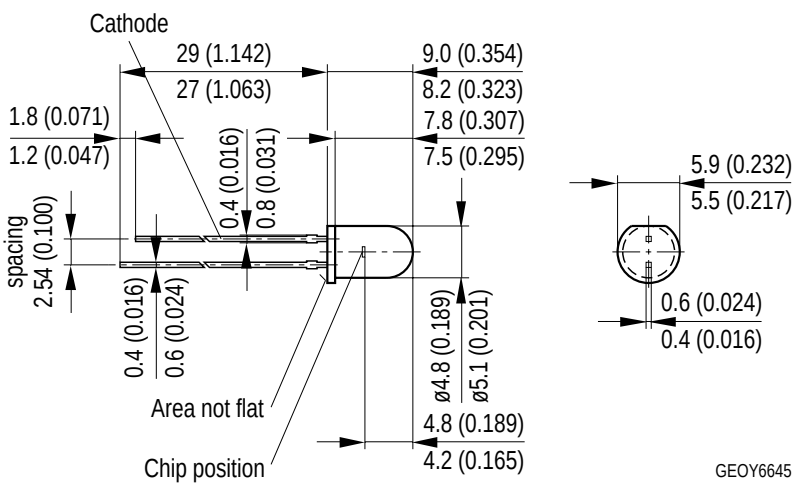


Radiation Characteristics $I_{rel} = f(\varphi)$



Maßzeichnung
Package Outlines





Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

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