GaAlAs-IR-Lumineszenzdiode (880 nm)
GaAlAs Infrared Emitter (880 nm)
Lead (Pb) Free Product - RoHS Compliant

SFH 485 P

Wesentliche Merkmale

- GaAlAs-LED mit sehr hohem Wirkungsgrad
- Hohe Zuverlässigkeit
- Gute spektrale Anpassung an Si-Fotoempfänger
- Gegurtet lieferbar (im Ammo-Pack)
- Gruppiert lieferbar

Features

- Very highly efficient GaAlAs-LED
- High reliability
- Spectral match with silicon photodetectors
- Available on tape and reel (in Ammopack)
- Available in bins

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
SFH 485 P	Q62703Q0516	5-mm-LED-Gehäuse, plan, klares violettes Epoxy-Gießharz, Lötspieße im 2.54-mm-Raster ($^1/_{10}$''), Anodenkennzeichnung: kürzerer Anschluß 5 mm LED package (T 1 $^3/_4$), plane violet-colored transparent epoxy resin, solder tabs lead spacing 2.54 mm ($^1/_{10}$''), anode marking: short lead.

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, $\tau \leq 10$ µs Surge current	I_{FSM}	2.5	A
Verlustleistung Power dissipation	P_{tot}	200	mW
Wärmewiderstand, freie Beinchenlänge max. 10 mm Thermal resistance, lead length between package bottom and PC-board max. 10 mm	R_{thJA}	375	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	λ_{peak}	880	nm
Spektrale Bandbreite bei 50% von I_{max} I_F = 100 mA Spectral bandwidth at 50% of I_{max}	$\Delta\lambda$	80	nm
Abstrahlwinkel Half angle	φ	± 40	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	mm²
Abstand Chipoberfläche bis Gehäusevorderseite Distance chip front to case surface	H	0.5 … 1	mm

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

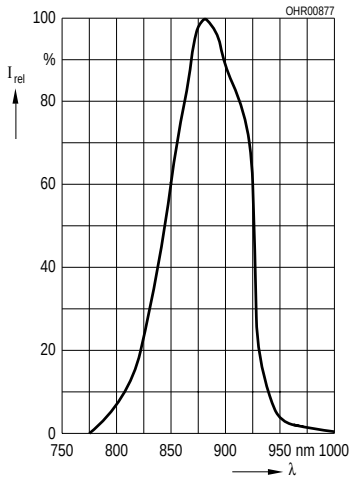
Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Schaltzeiten, I_e von 10% auf 90% und von 90% auf 10%, bei I_F = 50 mA, R_L = 50 Ω Switching times, I_e from 10% to 90% and from 90% to 10%, I_F = 100 mA, R_L = 50 Ω	t_r, t_f	0.6/0.5	µs
Kapazität, V_R = 0 V, f = 1 MHz Capacitance	C_o	15	pF
Durchlaßspannung, Forward voltage I_F = 100 mA, t_p = 20 ms I_F = 1 A, t_p = 100 µs	V_F	 1.5 (< 1.8) 3.0 (< 3.8)	 V
Sperrstrom, Reverse current V_R = 5 V	I_R	0.01 (≤ 1)	µA
Gesamtstrahlungsfluß, Total radiant flux I_F = 100 mA, t_p = 20 ms	Φ_e	25	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	– 0.5	%/K
Temperaturkoeffizient von V_F, I_F = 100 mA Temperature coefficient of V_F, I_F = 100 mA	TC_V	– 2	mV/K
Temperaturkoeffizient von λ, I_F = 100 mA Temperature coefficient of λ, I_F = 100 mA	TC_λ	+ 0.25	nm/K

Strahlstärke I_e in Achsrichtung[1)]
gemessen bei einem Raumwinkel Ω = 0.01 sr
Radiant Intensity I_e in Axial Direction
at a solid angle of Ω = 0.01 sr

Bezeichnung Parameter	Symbol	Werte Values		Einheit Unit
		SFH 485 P-1	SFH 485 P-2	
Strahlstärke Radiant intensity I_F = 100 mA, t_p = 20 ms	 $I_{e\ min}$ $I_{e\ max}$	 3.15 5.5	 4.5 -	 mW/sr
Strahlstärke Radiant intensity I_F = 1 A, t_p = 100 µs	 $I_{e\ typ.}$	 48	 52	 mW/sr

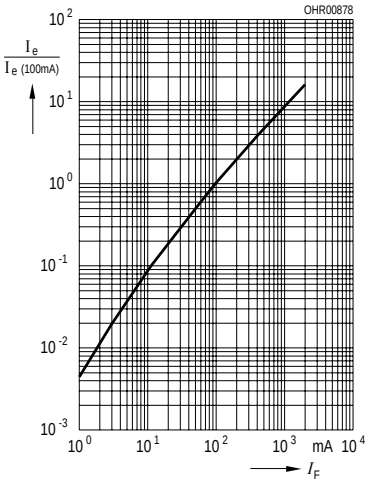
[1)] Nur eine Gruppe in einer Verpackungseinheit (Streuung kleiner als der oben angegebene Bereich / Only one group in one packing unit (variation lower than the above group)

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

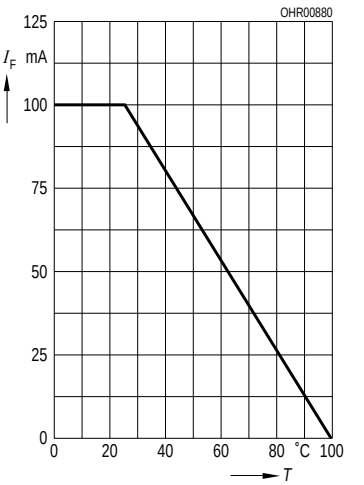


Radiant Intensity $\frac{I_e}{I_e\ 100\ mA} = f(I_F)$

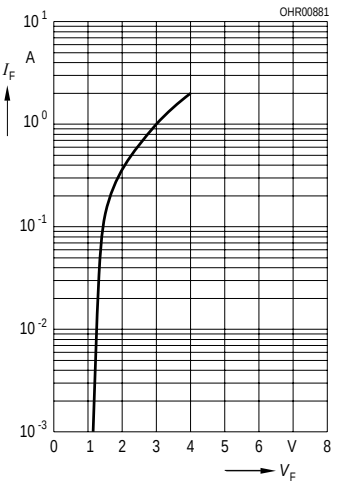
Single pulse, t_p = 20 µs



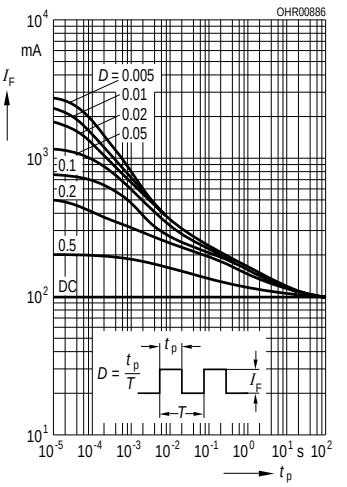
Max. Permissible Forward Current
$I_F = f(T_A)$



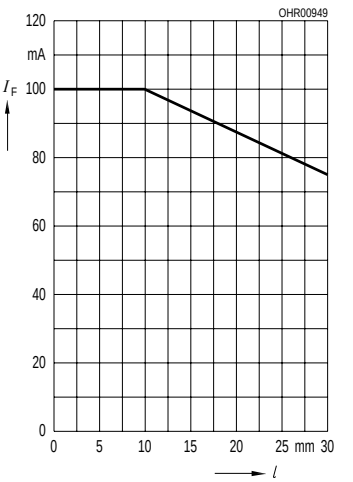
Forward Current
$I_F = f(V_F)$, Single pulse, t_p = 20 µs



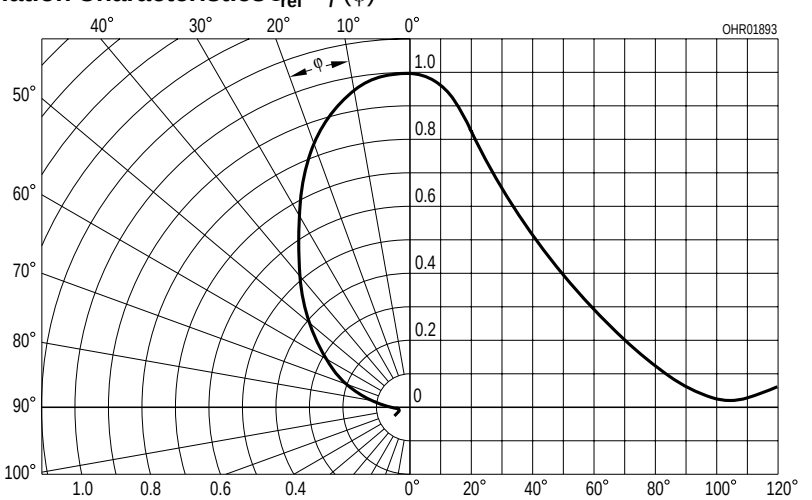
Permissible Pulse Handling Capability $I_F = f(\tau)$, T_A = 25 °C,duty cycle D = parameter



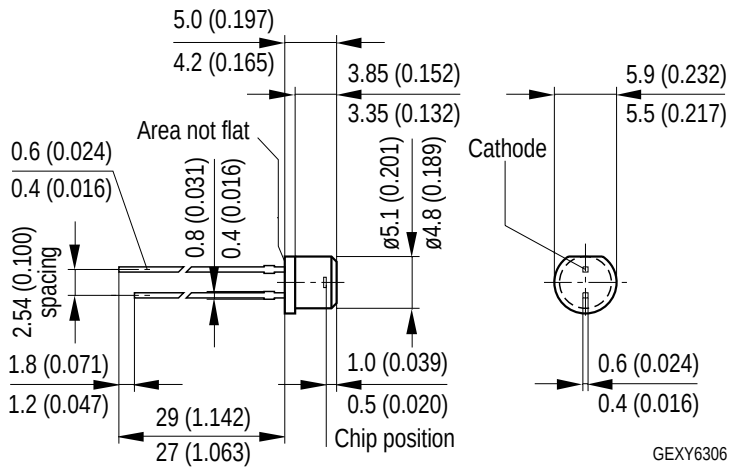
Forward Current vs. Lead Length Between the Package Bottom and the PC-Board $I_F = f(l)$, T_A = 25 °C



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

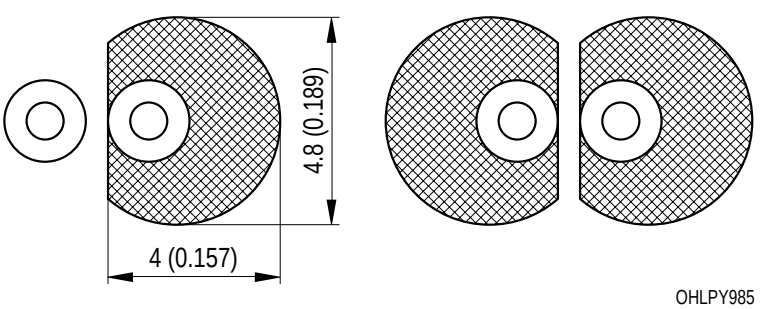


Maßzeichnung
Package Outlines



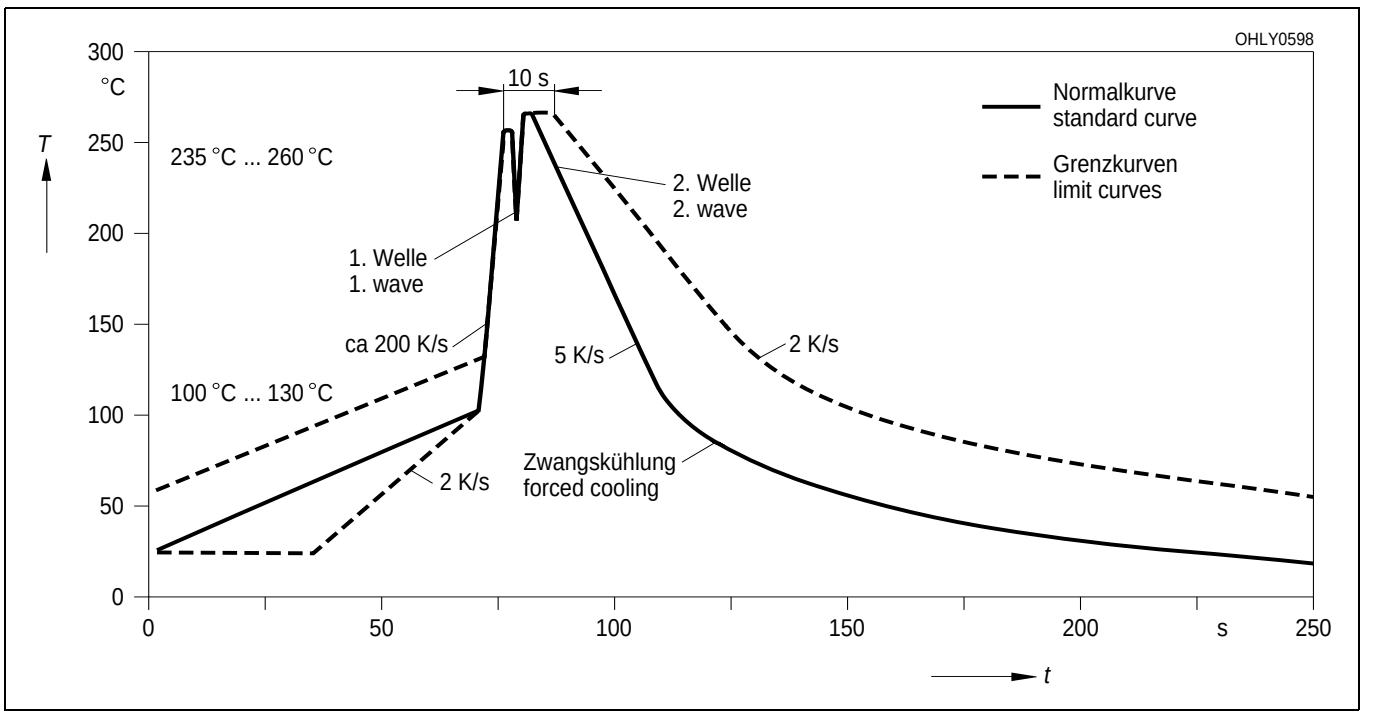
Maße in mm (inch) / Dimensions in mm (inch).

Empfohlenes Lötpaddesign Wellenlöten (TTW)
Recommended Solder Pad TTW Soldering



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

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



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