GaAlAs-IR-Lumineszenzdioden (880 nm)
GaAlAs Infrared Emitters (880 nm)

SFH 484
SFH 485

SFH 484

SFH 485

Wesentliche Merkmale

- GaAlAs-LED mit sehr hohem Wirkungsgrad
- Hohe Zuverlässigkeit
- Gute spektrale Anpassung an Si-Fotoempfänger
- Gegurtet lieferbar (im Ammo-Pack)
- Gruppiert lieferbar
- SFH 484: Gehäusegleich mit LD 274
- SFH 485: Gehäusegleich mit SFH 300, SFH 203

Features

- Very highly efficient GaAlAs-LED
- High reliability
- Spectral match with silicon photodetectors
- Available on tape and reel (in Ammopack)
- Available in bins
- SFH 484: Same package as LD 274
- SFH 485: Same package as SFH 300, SFH 203

Anwendungen

- IR-Fernsteuerung von Fernseh- und Rundfunkgeräten, Videorecordern, Lichtdimmern
- Gerätefernsteuerungen für Gleich- und Wechsellichtbetrieb
- Rauchmelder (UL-Freigabe)
- Sensorik
- Diskrete Lichtschranken

Applications

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

Typ Type	Bestellnummer Ordering Code	Gehäuse Package
SFH 484	Q62703-Q1092	5-mm-LED-Gehäuse (T 1 $^3/_4$), klares violettes Epoxy-Gießharz, Anschlüsse im 2.54-mm-Raster ($^1/_{10}$''), Anodenkennzeichung: kürzerer Anschluß 5 mm LED package (T 1 $^3/_4$), violet-colored epoxy resin, solder tabs lead spacing 2.54 mm ($^1/_{10}$''), anode marking: short lead
SFH 484-2	Q62703-Q1756	
SFH 485	Q62703-Q1093	
SFH 485-2	Q62703-Q1547	

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}	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_{rel} Spectral bandwidth at 50% of I_{rel} I_F = 100 mA	$\Delta\lambda$	80	nm
Abstrahlwinkel Half angle SFH 484 SFH 485	 φ φ	 ± 8 ± 20	 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	mm
Abstand Chipoberfläche bis Linsenscheitel Distance chip front to lens top SFH 484 SFH 485	 H H	 5.1 … 5.7 4.2 … 4.8	 mm 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	0.6/0.5	µs
Kapazität Capacitance V_R = 0 V, f = 1 MHz	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 V_F	 1.50 (≤ 1.8) 3.00 (≤ 3.8)	 V 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

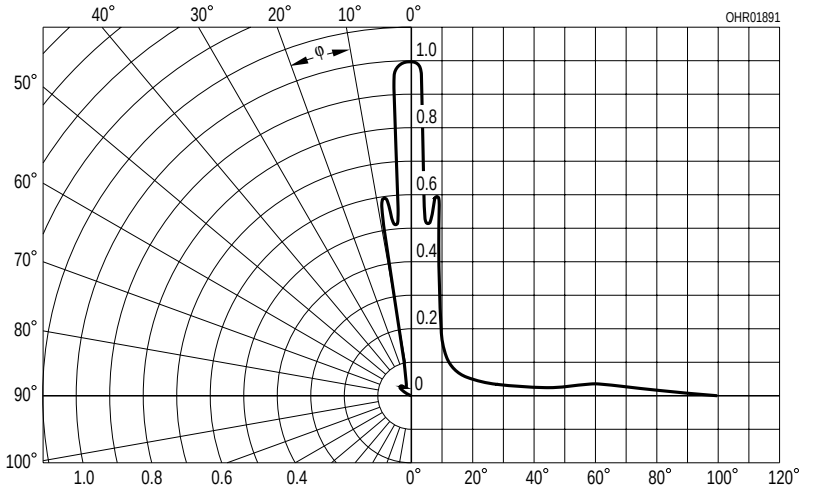
Kennwerte (T_A = 25 °C)
Characteristics (cont'd)

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
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

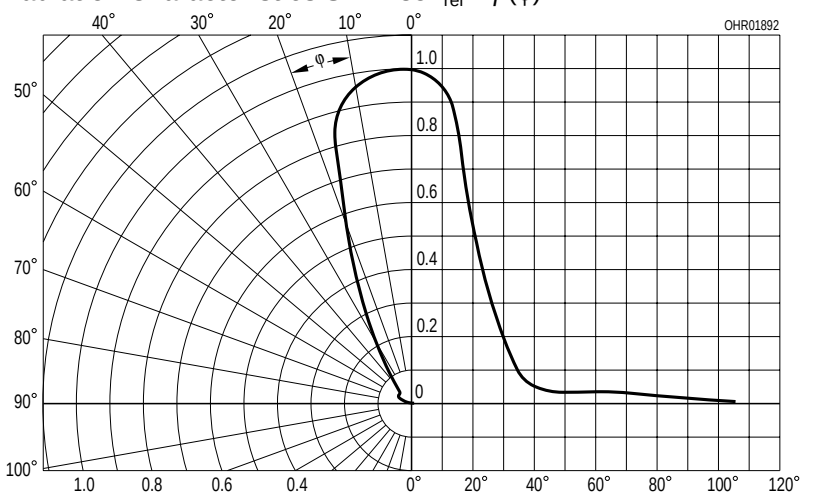
Gruppierung der Strahlstärke I_e in Achsrichtung
gemessen bei einem Raumwinkel Ω = 0.001 sr bei SFH 484 bzw. Ω = 0.01 sr bei SFH 485
Grouping of Radiant Intensity I_e in Axial Direction
at a solid angle of Ω = 0.001 sr at SFH 484 or Ω = 0.01 sr at SFH 485

Bezeichnung **Parameter**	**Symbol**	**Wert** **Value**					**Einheit** **Unit**
		SFH 484	**SFH 484-1**	**SFH 484-2**	**SFH 485**	**SFH 485-2**	
Strahlstärke Radiant intensity I_F = 100 mA, t_p = 20 ms	 $I_{e\ min}$ $I_{e\ max}$	 50 160	 50 100	 > 80 –	 16 80	 > 25 –	 mW/sr mW/sr
Strahlstärke Radiant intensity I_F = 1 A, t_p = 100 µs	 $I_{e\ typ.}$	 800	 700	 900	 300	 340	 mW/sr

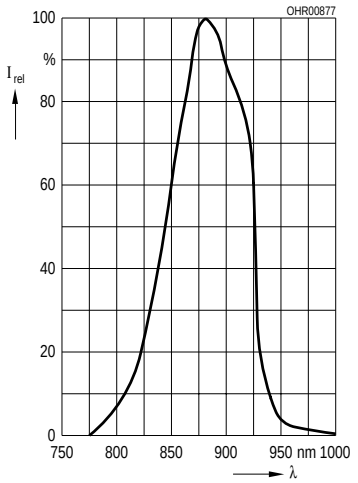
Radiation Characteristics, SFH 484 $I_{rel} = f(\varphi)$



Radiation Characteristics SFH 485 $I_{rel} = f(\varphi)$

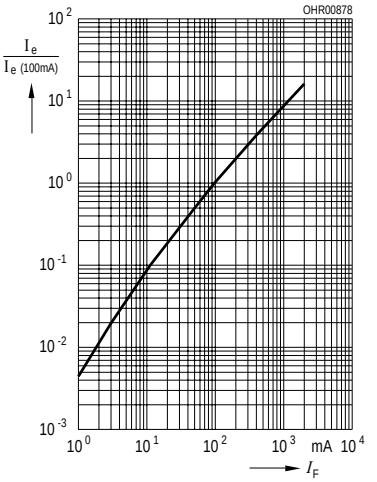


Relative Spectral Emission
$I_{rel} = f(\lambda)$

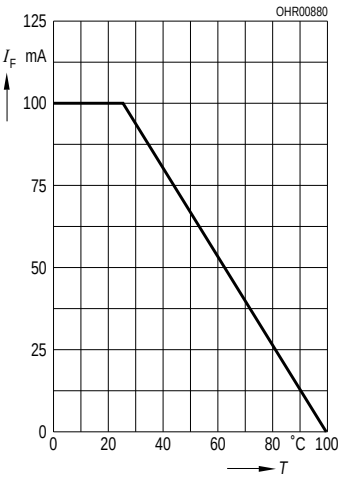


Radiant Intensity $\frac{I_e}{I_e\ 100\ mA} = f(I_F)$

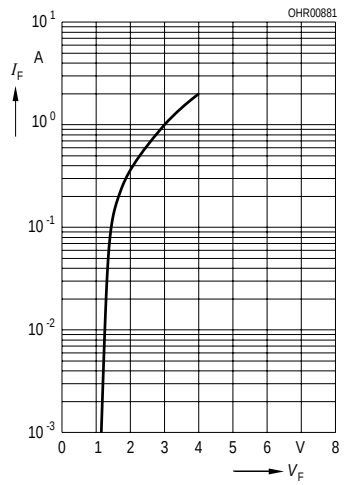
Single pulse, t_p = 20 µs



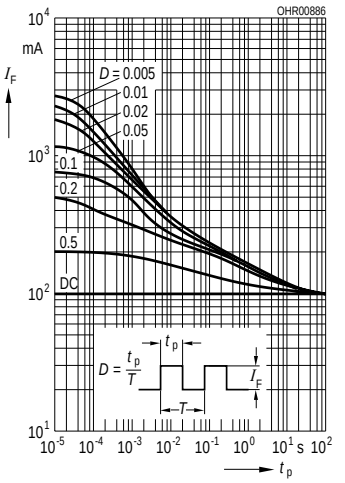
Max. Permissible Forward Current
$I_F = f(T_A)$



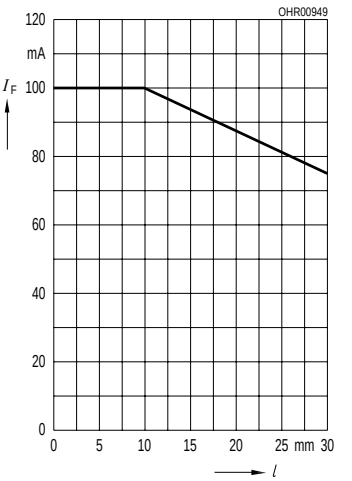
Forward Current
$I_F = f(V_F)$, single pulse, t_p = 20 µs



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

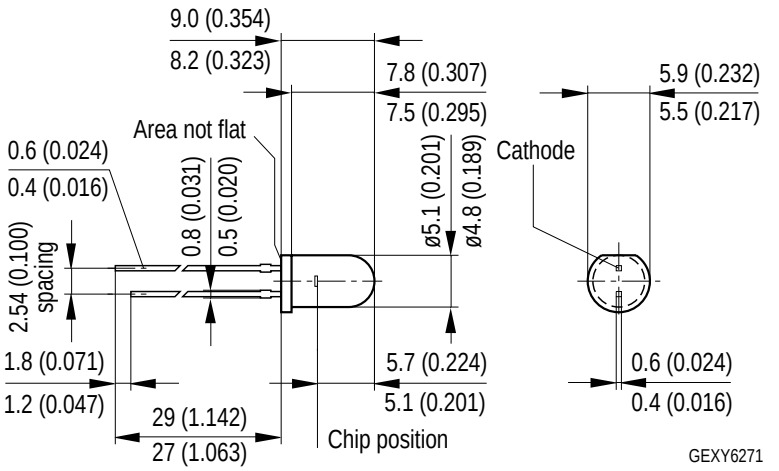


Forward Current vs. Lead Length between the Package Bottom and the PC-Board $I_F = f(l)$, T_A = 25 °×C

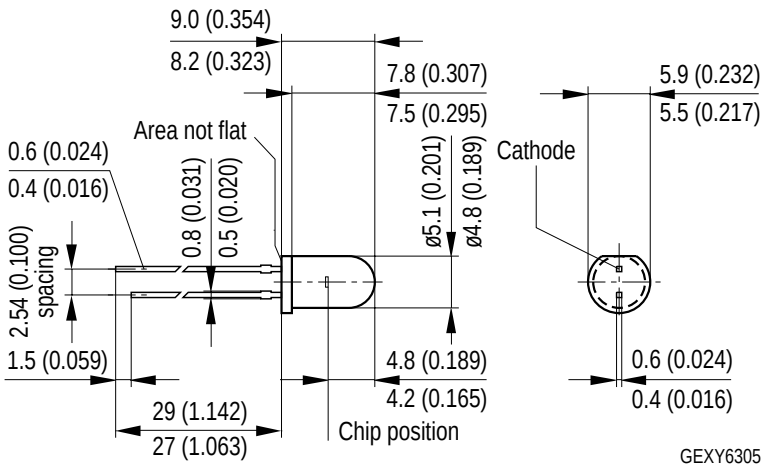


Maßzeichnung
Package Outlines

SFH 484



SFH 485



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

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