

GaAlAs-IR-Lumineszenzdiode (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

Anwendungen

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

Features

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

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"), Anodenkennzeichnung: 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 ($T_A = 25\text{ °C}$)**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, $t_p = 10\text{ }\mu\text{s}$, $D = 0$ 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 ($T_A = 25\text{ °C}$)

Characteristics

| Bezeichnung Parameter | Symbol Symbol | Wert Value | Einheit Unit |
|---|------------------------------|--|-----------------|
| Wellenlänge der Strahlung Wavelength at peak emission $I_F = 100\text{ mA}$ | λ_{peak} | 880 | nm |
| Spektrale Bandbreite bei 50% von I_{rel} Spectral bandwidth at 50% of I_{rel} $I_F = 100\text{ mA}$ | $\Delta\lambda$ | 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 $I_F = 100\text{ mA}$, $R_L = 50\ \Omega$ 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 | 0.6/0.5 | μs |
| Kapazität Capacitance $V_R = 0\text{ V}$, $f = 1\text{ MHz}$ | C_o | 15 | pF |
| Durchlaßspannung Forward voltage $I_F = 100\text{ mA}$, $t_p = 20\text{ ms}$ $I_F = 1\text{ A}$, $t_p = 100\ \mu\text{s}$ | V_F V_F | 1.50 (≤ 1.8) 3.00 (≤ 3.8) | V V |
| Sperrstrom, Reverse current $V_R = 5\text{ V}$ | I_R | 0.01 (≤ 1) | μA |
| Gesamtstrahlungsfluß, Total radiant flux $I_F = 100\text{ mA}$, $t_p = 20\text{ ms}$ | Φ_e | 25 | mW |

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

| Bezeichnung Parameter | Symbol Symbol | Wert Value | Einheit Unit |
|---|------------------|---------------|-----------------|
| Temperaturkoeffizient von I_e bzw. Φ_e , $I_F = 100\text{ mA}$ Temperature coefficient of I_e or Φ_e , $I_F = 100\text{ mA}$ | TC_I | - 0.5 | %/K |
| Temperaturkoeffizient von V_F , $I_F = 100\text{ mA}$ Temperature coefficient of V_F , $I_F = 100\text{ mA}$ | TC_V | - 2 | mV/K |
| Temperaturkoeffizient von λ , $I_F = 100\text{ mA}$ Temperature coefficient of λ , $I_F = 100\text{ mA}$ | TC_λ | 0.25 | nm/K |

Gruppierung der Strahlstärke I_e in Achsrichtung

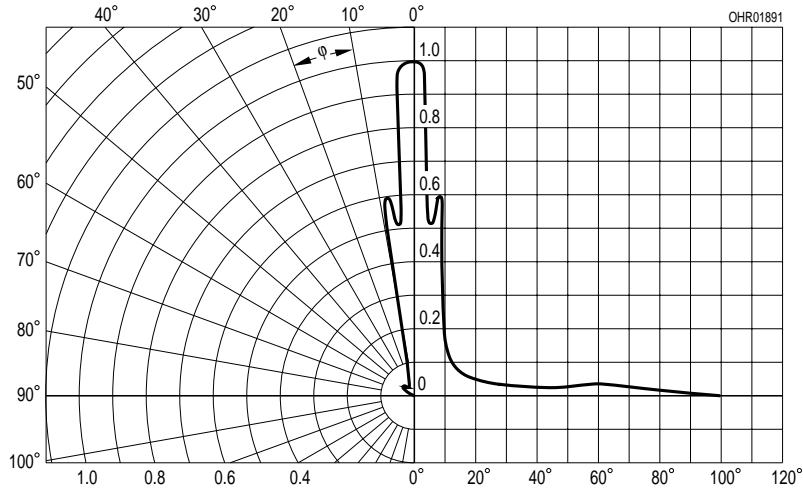
 gemessen bei einem Raumwinkel $\Omega = 0.001\text{ sr}$ bei SFH 484 bzw. $\Omega = 0.01\text{ sr}$ bei SFH 485

Grouping of Radiant Intensity I_e in Axial Direction

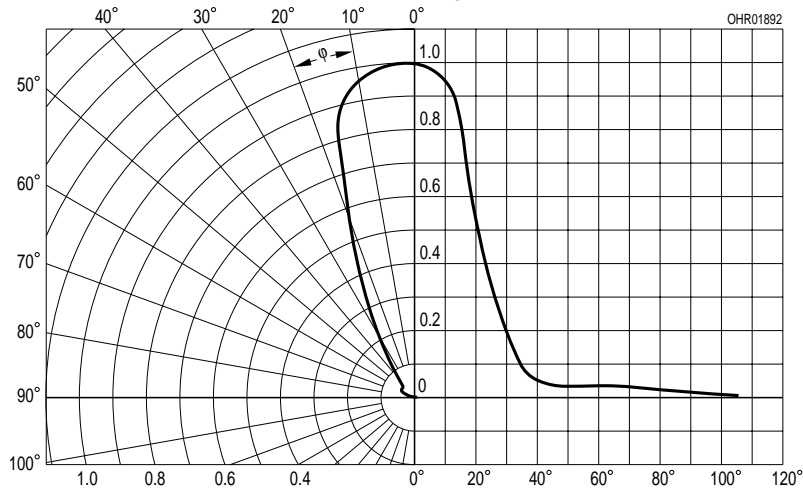
 at a solid angle of $\Omega = 0.001\text{ sr}$ at SFH 484 or $\Omega = 0.01\text{ sr}$ at SFH 485

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

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

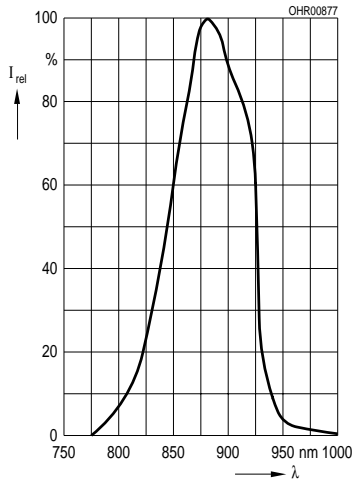


Radiation Characteristics SFH 485 $I_{rel} = f(\varphi)$



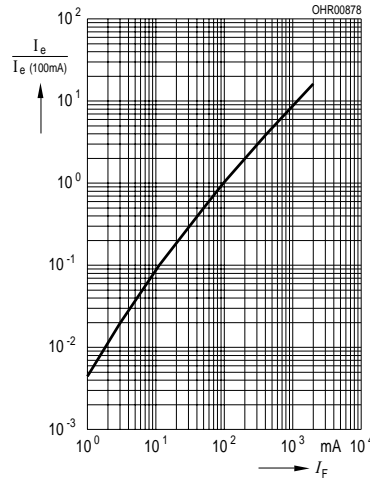
Relative Spectral Emission

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



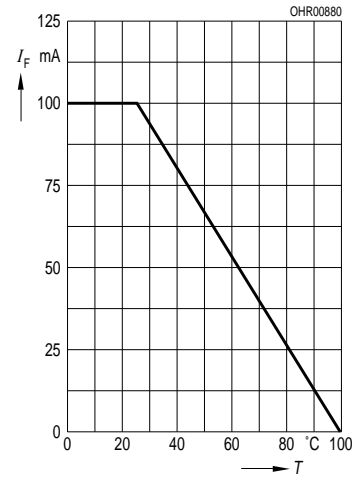
Radiant Intensity $\frac{I_e}{I_e(100\text{mA})} = f(I_F)$

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



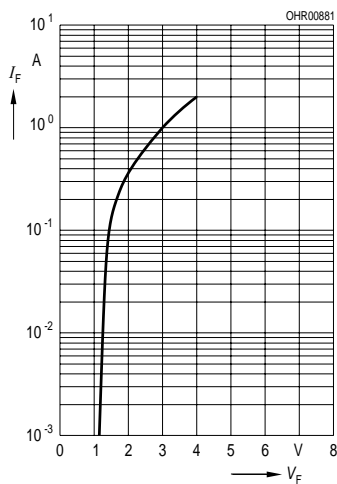
Max. Permissible Forward Current

$I_F = f(T_A)$

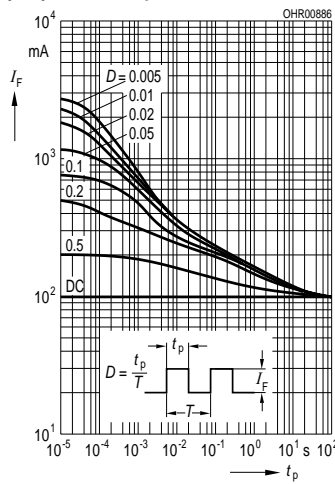


Forward Current

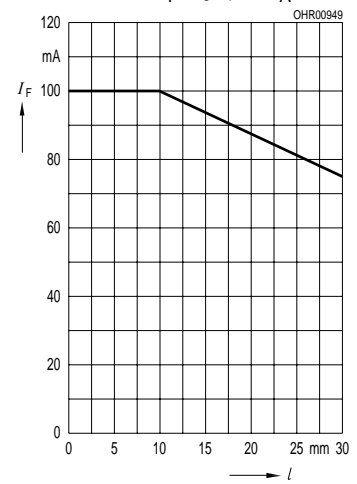
$I_F = f(V_F)$, single pulse, $t_p = 20 \mu\text{s}$



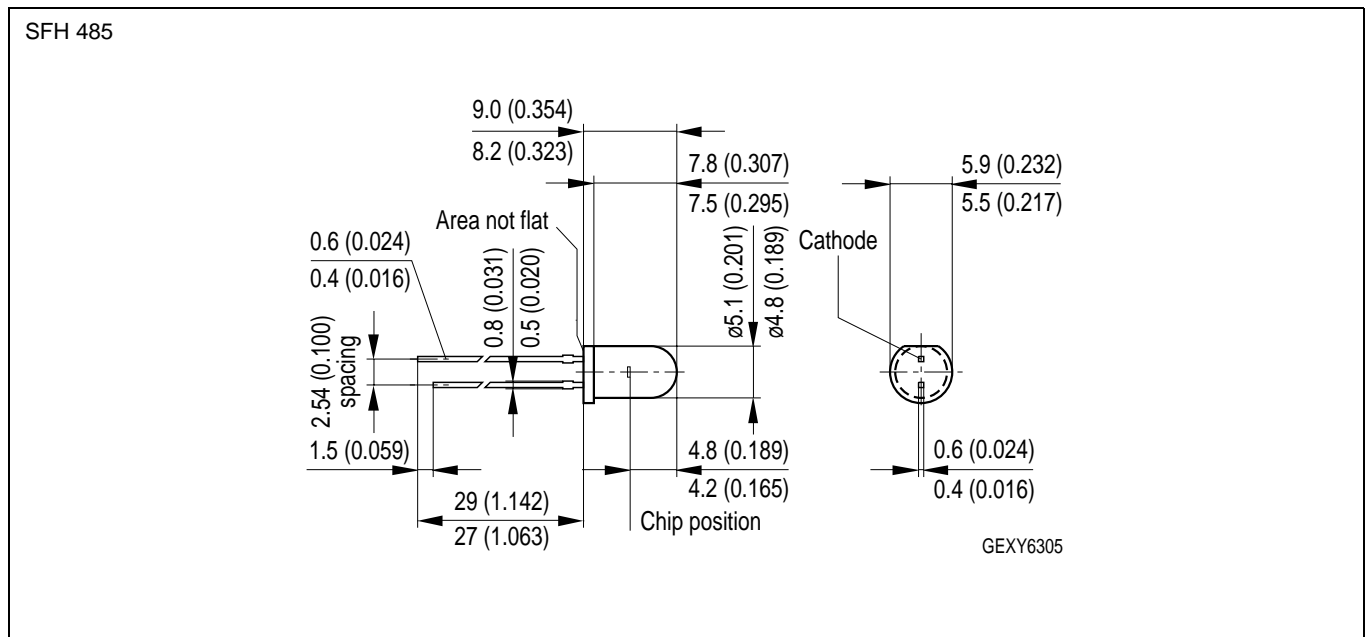
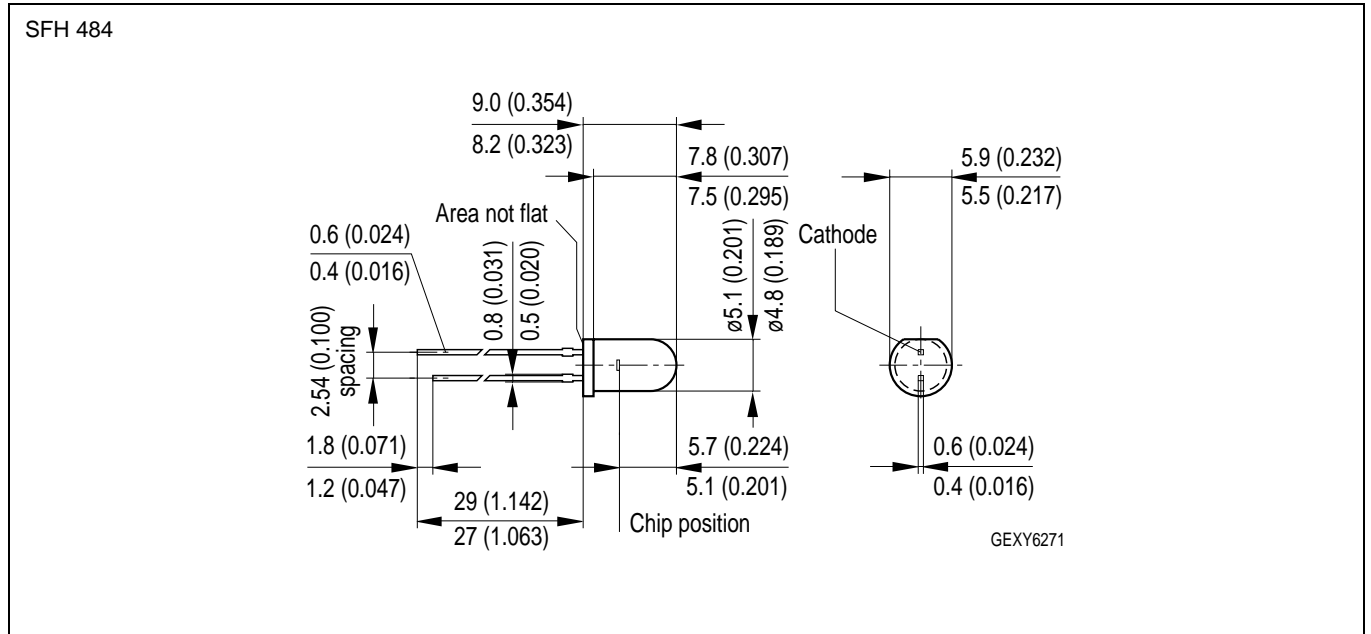
Permissible Pulse Handling Capability $I_F = f(\tau)$, $T_A = 25 \text{ }^\circ\text{C}$, duty cycle $D =$ parameter



Forward Current vs. Lead Length between the Package Bottom and the PC-Board $I_F = f(l)$, $T_A = 25 \text{ }^\circ\text{C}$



Maßzeichnung
Package Outlines



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

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