

GaAlAs-IR-Lumineszenzdiode (880 nm) GaAlAs Infrared Emitter (880 nm)

SFH 486



Wesentliche Merkmale

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

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 Ammopack)
- Available in bins

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
SFH 486	Q62703-Q1094

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 Thermal resistance	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	φ	± 11	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 Gehäusevorderseite Distance chip front to case surface	H	5.1 ... 5.7	mm
Schaltzeiten, I_e von 10% auf 90% und von 90% auf 10%, bei $I_F = 100\text{ mA}$, $R_L = 50\text{ }\Omega$ Switching times, I_e from 10% to 90% and from 90% to 10%, $I_F = 100\text{ mA}$, $R_L = 50\text{ }\Omega$	t_r, t_f	0.6/0.5	μs

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

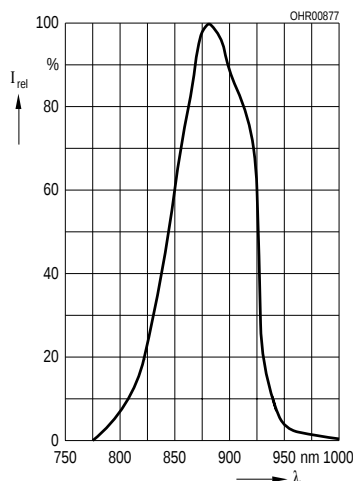
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kapazität Capacitance $V_R = 0\text{ V}, f = 1\text{ MHz}$	C_o	15	pF
Durchlaßspannung Forward voltage $I_F = 100\text{ mA}, t_p = 20\text{ ms}$ $I_F = 1\text{ A}, t_p = 100\text{ }\mu\text{s}$	V_F	1.5 (< 1.8) 3.0 (< 3.8)	V
Sperrstrom Reverse 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
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

Strahlstärke I_e in Achsrichtunggemessen bei einem Raumwinkel $\Omega = 0.001$ sr**Radiant Intensity I_e in Axial Direction**at a solid angle of $\Omega = 0.001$ sr

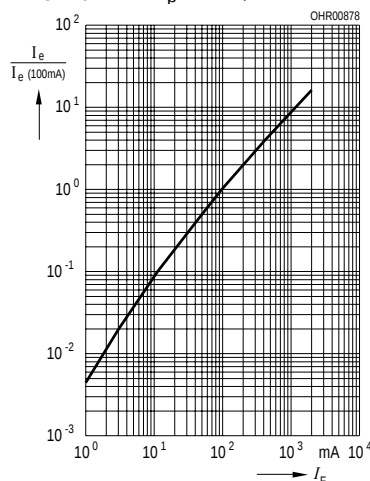
Bezeichnung Parameter	Symbol	Werte Values	Einheit Unit
Strahlstärke Radiant intensity $I_F = 100$ mA, $t_p = 20$ ms	$I_{e \text{ min}}$ $I_{e \text{ max}}$	40 typ. 60	mW/sr
Strahlstärke Radiant intensity $I_F = 1$ A, $t_p = 100$ μ s	$I_{e \text{ typ}}$	600	mW/sr

Relative Spectral Emission

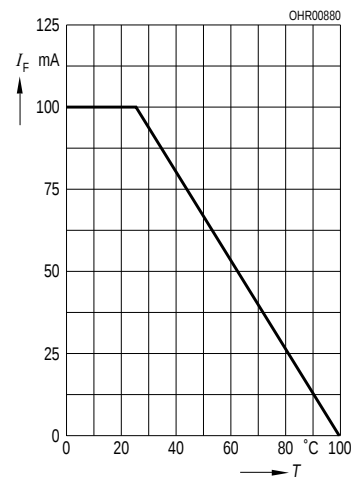
$$I_{\text{rel}} = f(\lambda)$$



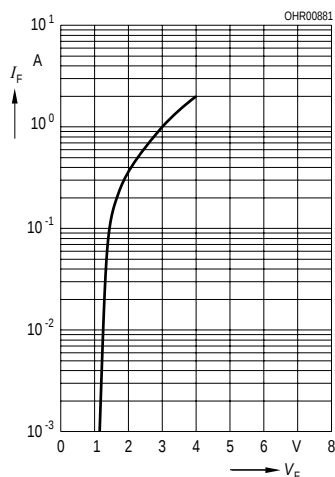
$$\text{Radiant Intensity } \frac{I_e}{I_e(100\text{mA})} = f(I_F)$$

Single pulse, $t_p = 20\ \mu\text{s}$ **Max. Permissible Forward Current**

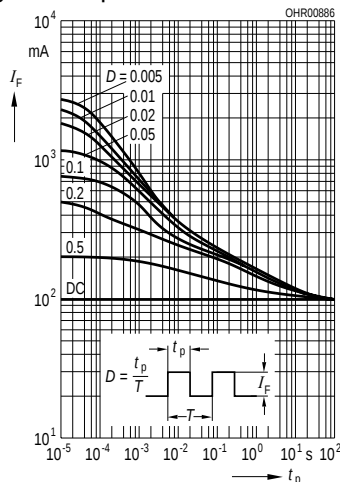
$$I_F = f(T_A)$$

**Forward Current**

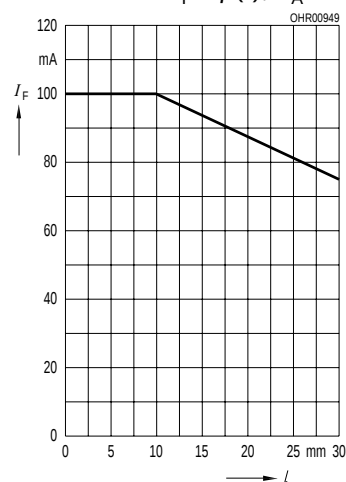
$$I_F = f(V_F), \text{ single pulse, } t_p = 20\ \mu\text{s}$$

**Permissible Pulse Handling**

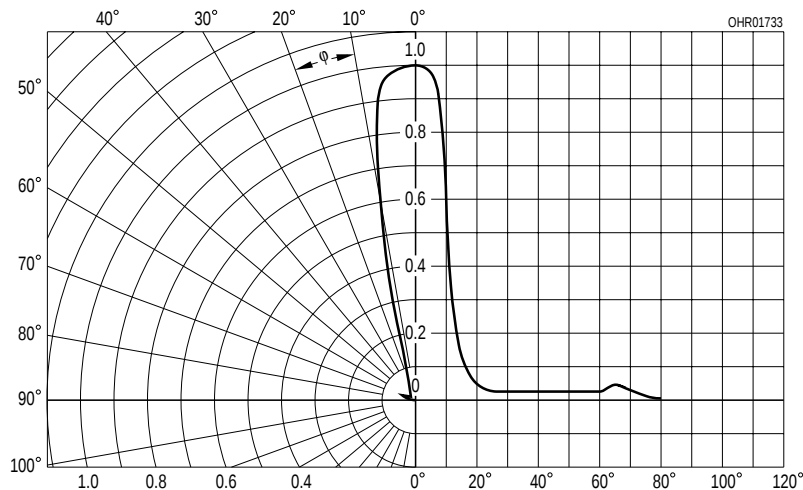
$$I_F = f(\tau), T_A = 25\ ^\circ\text{C}, \text{ duty cycle } D = \text{parameter}$$

**Forward Current vs. Lead Length Between the Package Bottom and the PC-Board**

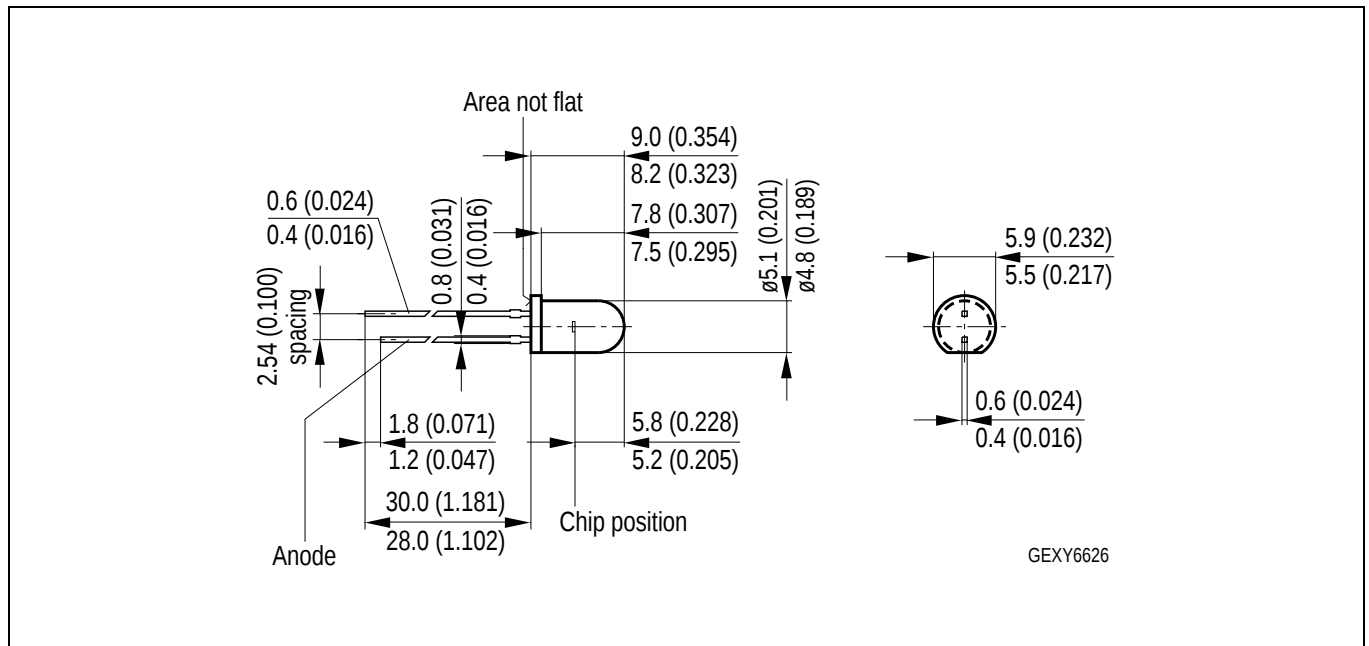
$$I_F = f(l), T_A = 25\ ^\circ\text{C}$$

**Radiation Characteristics**

$$I_{\text{rel}} = f(\varphi)$$



Maßzeichnung Package Outlines



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

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