GaAlAs-IR-Lumineszenzdioden (880 nm) in SMR® Gehäuse
GaAlAs Infrared Emitters (880 nm) in SMR® Package
Lead (Pb) Free Product - RoHS Compliant

SFH 4580
SFH 4585



SFH 4580



SFH 4585

Wesentliche Merkmale

- GaAlAs-LED mit sehr hohem Wirkungsgrad
- SMR® (Surface Mount Radial) Gehäuse
- Für Oberflächenmontage geeignet
- Gegurtet lieferbar
- Gehäusegleich mit Fotodiode SFH 2500/ SFH 2505
- Hohe Zuverlässigkeit
- Gute spektrale Anpassung an Si-Fotoempfänger
- UL Version erhältlich

Features

- Very highly efficient GaAlAs-LED
- SMR® (Surface Mount Radial) package
- Suitable for surface mounting (SMT)
- Available on tape and reel
- Same package as photodiode SFH 2500/ SFH 2505
- High reliability
- Spectral match with silicon photodetectors
- UL version available

Anwendungen

- IR-Fernsteuerung von Fernseh- und Rundfunkgeräten, Videorecordern, Lichtdimmern
- Gerätefernsteuerungen für Gleich- und Wechsellichtbetrieb
- Rauchmelder
- Sensorik
- Diskrete Lichtschranken
- Diskrete Optokoppler

Applications

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

Typ **Type**	**Bestellnummer** **Ordering Code**	**Strahlstärkegruppierung**[1] (I_F = 100 mA, t_p = 20 ms) **Radiant Intensity Grouping**[1] I_e (mW/sr)
SFH 4580	Q65110A2632	≥ 25 (typ. 55)
SFH 4585	Q65110A2631	

[1] gemessen bei einem Raumwinkel Ω = 0.01 sr / measured at a solid angle of Ω = 0.01 sr

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 Sperrschicht - Umgebung bei Montage auf FR4 Platine, Padgröße je 20 mm^2 Thermal resistance junction - ambient mounted on PC-board (FR4), padsize 20 mm^2 each	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 m A	$\Delta\lambda$	80	nm
Abstrahlwinkel Half angle	φ	± 15	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 Linsenscheitel Distance chip front to lens top	H	3.9 … 4.5	mm

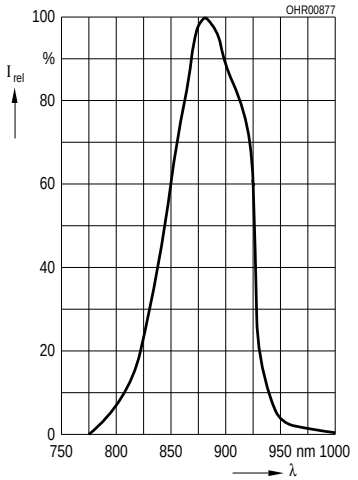
Kennwerte (T_A = 25 °C)
Characteristics (cont'd)

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Schaltzeiten, I_e von 10% auf 90% und von 90% auf 10%, bei I_F = 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
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
gemessen bei einem Raumwinkel Ω = 0.01 sr
Radiant Intensity I_e in Axial Direction
at a solid angle of Ω = 0.01 sr

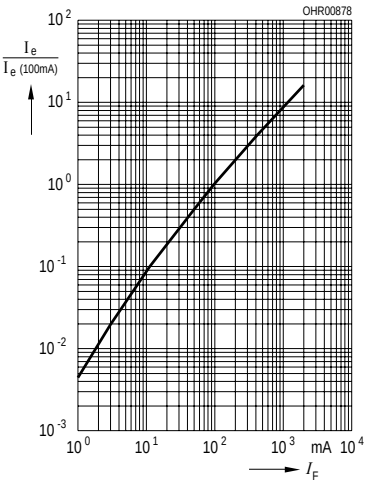
Bezeichnung **Parameter**	**Symbol**	**Wert** **Value**	**Einheit** **Unit**
Strahlstärke Radiant intensity I_F = 100 mA, t_p = 20 ms	$I_{e\ min}$ $I_{e\ typ}$	25 55	mW/sr mW/sr
Strahlstärke Radiant intensity I_F = 1 A, t_p = 100 µs	$I_{e\ typ}$	500	mW/sr

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

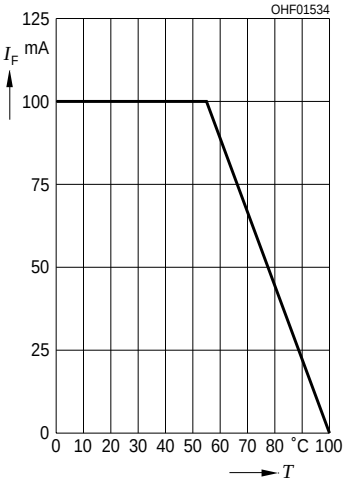


Radiant Intensity $\frac{I_e}{I_e\ 100\ mA} = f(I_F)$

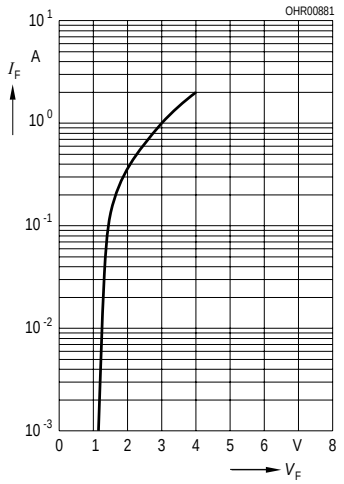
Single pulse, $t_p = 20\ \mu s$



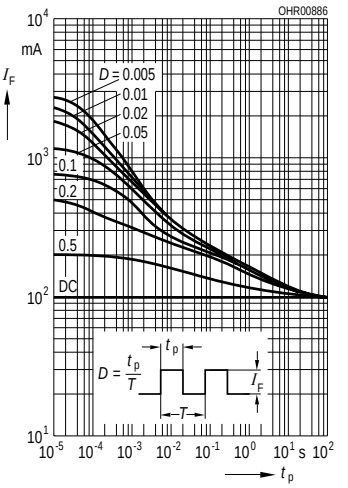
Max. Permissible Forward Current
$I_F = f(T_A)$



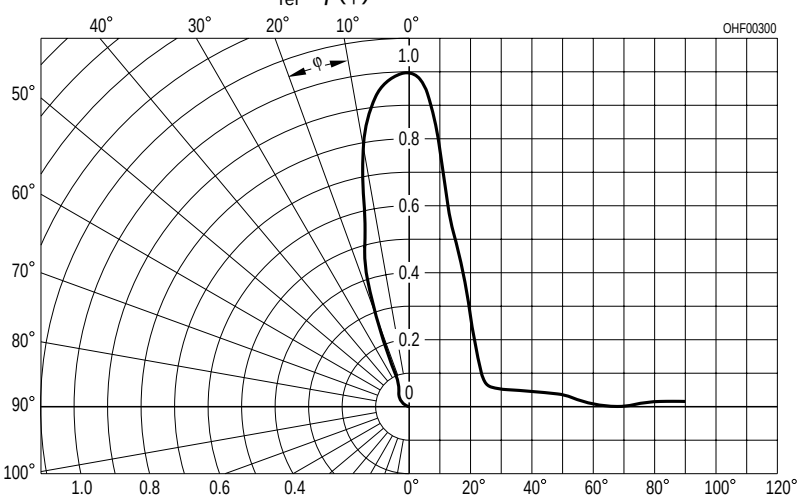
Forward Current
$I_F = f(V_F)$, single pulse, $t_p = 20\ \mu s$



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

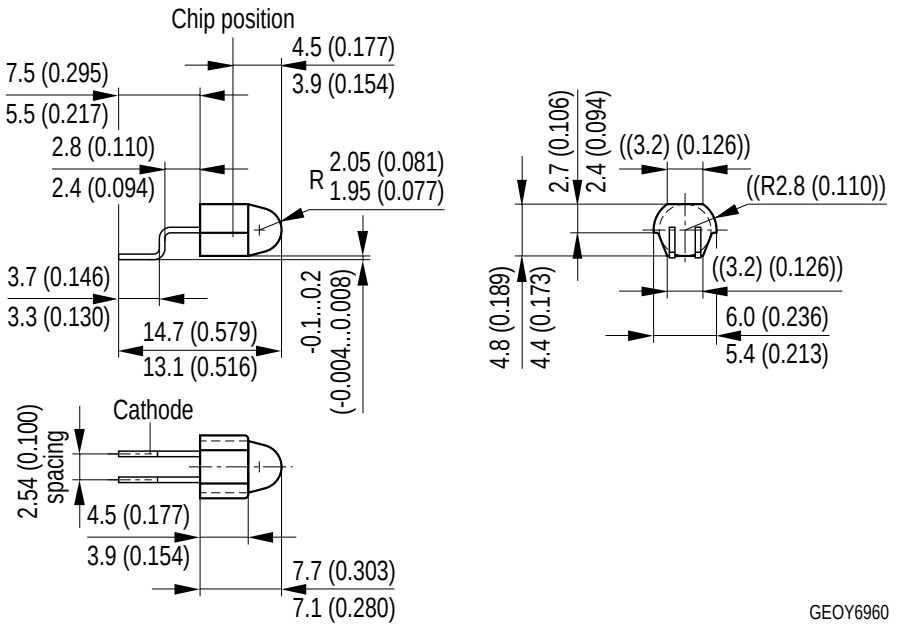


Radiation Characteristics $I_{rel} = f(\varphi)$

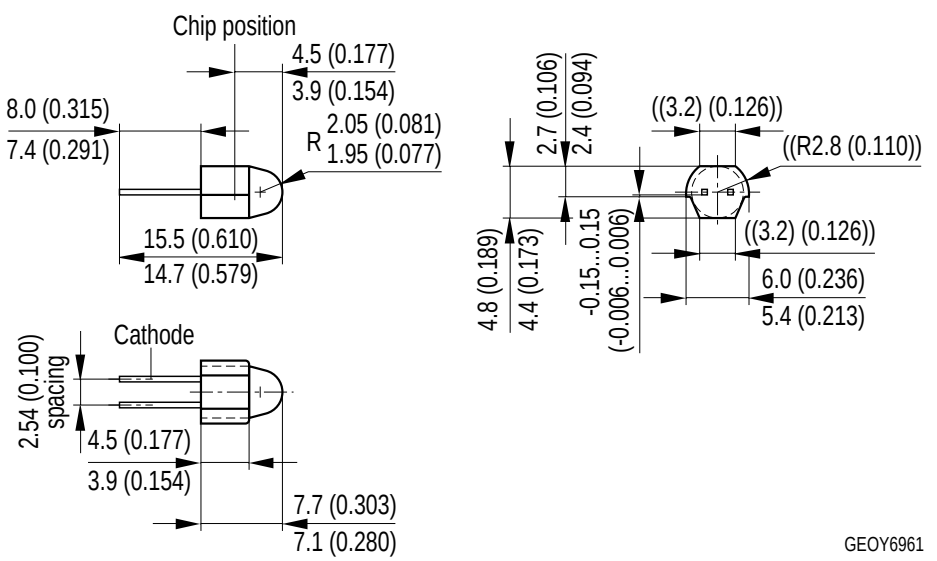


Maßzeichnung
Package Outlines

SFH 4580



SFH 4585

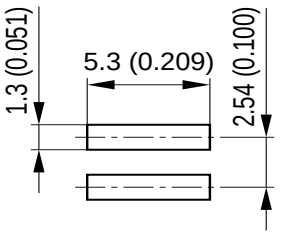


Maße in mm (inch) / Dimensions in mm (inch).

Empfohlenes Lötpaddesign
Recommended Solder Pad

Reflow Löten
Reflow Soldering

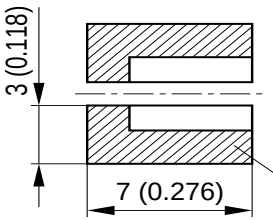
SFH 4580



Padgeometrie für
verbesserte Wärmeableitung

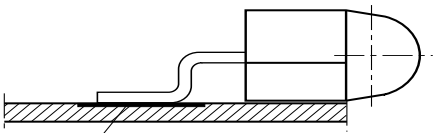
Paddesign for
improved heat dissipation

Lötstopplack
Solder resist

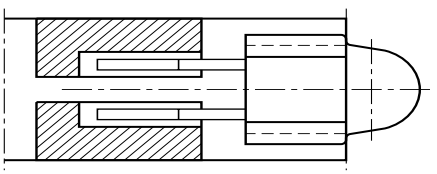


Cu-Fläche > 20 mm²
Cu-area > 20 mm²

Bauteil positioniert
Component Location on Pad

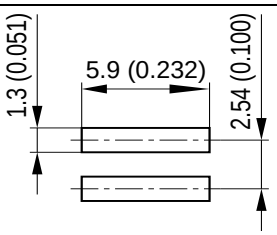


Lötpad



OHFY2449

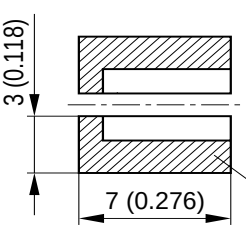
SFH 4585



Padgeometrie für
verbesserte Wärmeableitung

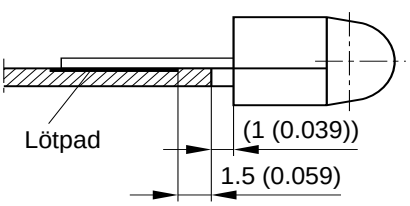
Paddesign for
improved heat dissipation

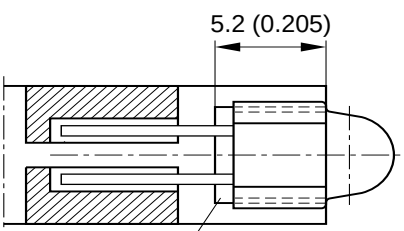
Lötstopplack
Solder resist



Cu-Fläche > 20 mm²
Cu-area > 20 mm²

Bauteil positioniert
Component Location on Pad





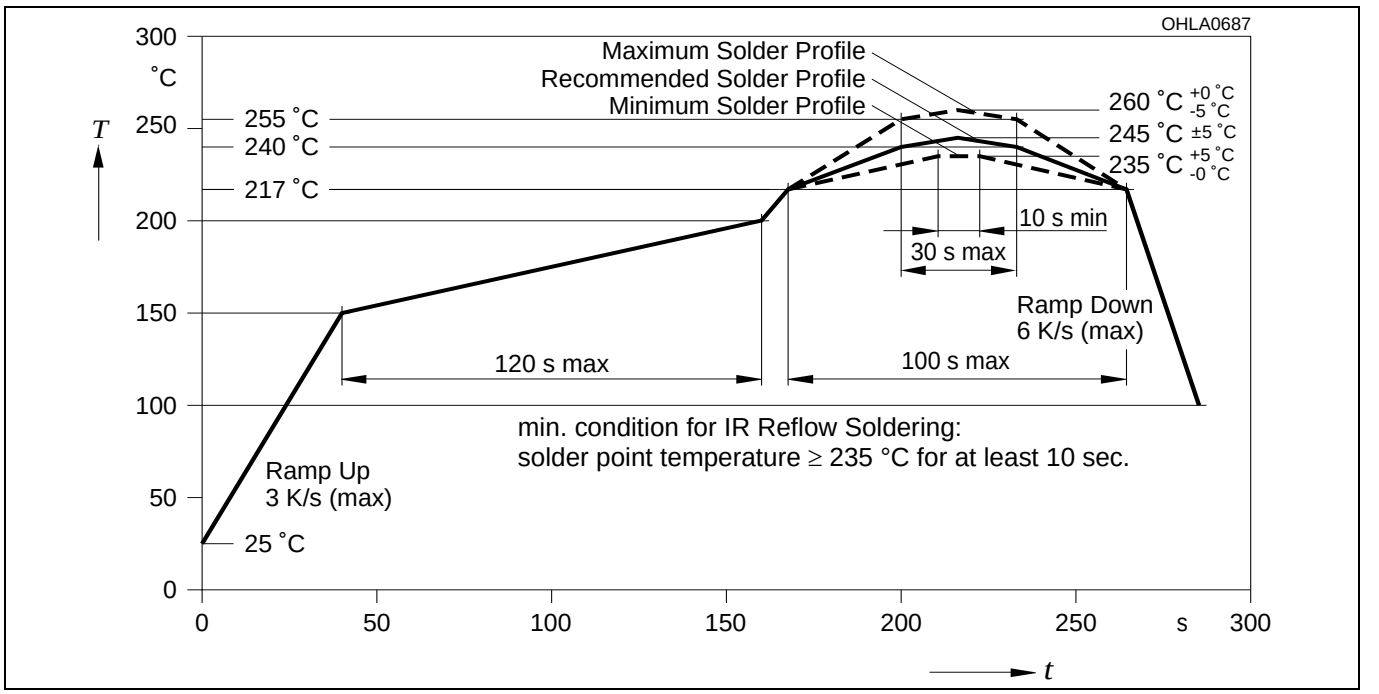
Aussparung 4.85 (0.191) ±0.05 (0.002)

OHF02450

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

Lötbedingungen
Soldering Conditions
Reflow Lötprofil für bleifreies Löten
Reflow Soldering Profile for lead free soldering

Vorbehandlung nach JEDEC Level 3
Preconditioning acc. to JEDEC Level 3
(nach J-STD-020C)
(acc. to J-STD-020C)



Published by
OSRAM Opto Semiconductors GmbH
Leibnizstrasse 4, D-93055 Regensburg
www.osram-os.com
© All Rights Reserved.

EU RoHS and China RoHS compliant product
此产品符合欧盟 RoHS 指令的要求；
按照中国的相关法规和标准，不含有毒有害物质或元素。

The information describes the type of component and shall not be considered as assured characteristics.
Terms of delivery and rights to change design reserved. Due to technical requirements components may contain dangerous substances. For information on the types in question please contact our Sales Organization.

Packing

Please use the recycling operators known to you. We can also help you – get in touch with your nearest sales office. By agreement we will take packing material back, if it is sorted. You must bear the costs of transport. For packing material that is returned to us unsorted or which we are not obliged to accept, we shall have to invoice you for any costs incurred.

Components used in life-support devices or systems must be expressly authorized for such purpose! Critical components [1] , may only be used in life-support devices or systems [2] with the express written approval of OSRAM OS.
[1] A critical component is a component usedin a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or effectiveness of that device or system.
[2] Life support devices or systems are intended (a) to be implanted in the human body, or (b) to support and/or maintain and sustain human life. If they fail, it is reasonable to assume that the health of the user may be endangered.

Mouser Electronics

Related Product Links

720-SFH4580 - Osram Opto Semiconductor SFH 4580
720-SFH4585-Z - Osram Opto Semiconductor SFH 4585-Z