

IR-Lumineszenzdiode (950 nm) im TO-46-Gehäuse
Infrared Emitter (950 nm) in TO-46 Package
Lead (Pb) Free Product - RoHS Compliant

SFH 4811
SFH 4813



SFH 4811



SFH 4813

Wesentliche Merkmale

- Hergestellt im Schmelzepitaxieverfahren
- Kathode galvanisch mit dem Gehäuseboden verbunden
- Hohe Zuverlässigkeit
- Gute spektrale Anpassung an Si-Fotoempfänger
- Hermetisch dichtes Metallgehäuse

Anwendungen

- Lichtschranken für Gleich- und Wechsellichtbetrieb
- IR-Gerätefernsteuerungen
- Sensorik
- Lichtgitter

Features

- Fabricated in a liquid phase epitaxy process
- Cathode is electrically connected to the case
- High reliability
- Matches all Si-Photodetectors
- Hermetically sealed package

Applications

- Photointerrupters
- IR remote control
- Sensor technology
- Light curtains

Typ Type	Bestellnummer Ordering Code	Gehäuse Package
SFH 4811	Q62702P5300	TO-46-Metallgehäuse, Glaslinse, hermetisch dicht, Anschlüsse im 2.54-mm-Raster ($1/10''$) TO-46-metal-package, glass lens, hermetically sealed, solder tabs lead spacing 2.54 mm ($1/10''$)
SFH 4813	Q62702P5301	

Grenzwerte ($T_C = 25\text{ °C}$)**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	300	mA
Stoßstrom, $t_p = 10\text{ }\mu\text{s}$, $D = 0$ Surge current	I_{FSM}	3	A
Verlustleistung Power dissipation	P_{tot}	470	mW
Wärmewiderstand Thermal resistance	R_{thJA} R_{thJC}	450 160	K/W K/W

Kennwerte ($T_A = 25\text{ °C}$)**Characteristics**

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der Strahlung Wavelength at peak emission $I_F = 100\text{ mA}$, $t_p = 20\text{ ms}$	λ_{peak}	950	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max} $I_F = 100\text{ mA}$, $t_p = 20\text{ ms}$	$\Delta\lambda$	55	nm
Abstrahlwinkel Half angle SFH 4811 SFH 4813	φ φ	± 5 ± 35	Grad deg.
Aktive Chipfläche Active chip area	A	0.09	mm ²
Abmessungen der aktiven Chipfläche Dimensions of the active chip area	$L \times B$ $L \times W$	0.3×0.3	mm ²

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

Characteristics

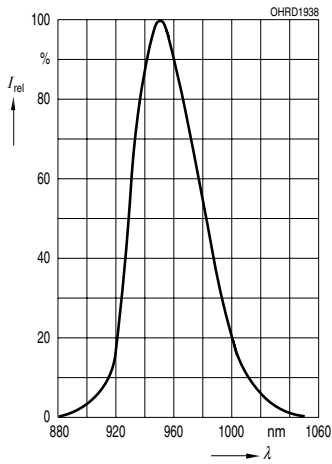
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Abstand Chipoberfläche bis Linsenscheitel Distance chip front to lens top SFH 4811 SFH 4813	H H	4.7 2.6	mm mm
Schaltzeiten, I_e von 10% auf 90% und von 90% auf 10%, bei $I_F = 100\text{ mA}$, $R_L = 50\ \Omega$ Switching times, I_e from 10% to 90% and from 90% to 10%, $I_F = 100\text{ mA}$, $R_L = 50\ \Omega$	t_r , t_f	0.5	μs
Kapazität Capacitance $V_R = 0\text{ V}$, $f = 1\text{ MHz}$	C_o	25	pF
Durchlaßspannung Forward voltage $I_F = 100\text{ mA}$, $t_p = 20\text{ ms}$ $I_F = 1\text{ A}$, $t_p = 100\ \mu\text{s}$ $I_F = 1.5\text{ A}$, $t_p = 100\ \mu\text{s}$	V_F V_F V_F	1.30 (≤ 1.5) 1.90 (≤ 2.5) 2.30 (≤ 3.0)	V 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	8	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	- 0.55	%/K
Temperaturkoeffizient von V_F , $I_F = 100\text{ mA}$ Temperature coefficient of V_F , $I_F = 100\text{ mA}$	TC_V	- 1.5	mV/K
Temperaturkoeffizient von λ , $I_F = 100\text{ mA}$ Temperature coefficient of λ , $I_F = 100\text{ mA}$	TC_λ	+ 0.3	nm/K

Gruppierung der Strahlstärke I_e in Achsrichtunggemessen bei einem Raumwinkel $\Omega = 0.01$ sr**Grouping of Radiant Intensity I_e in Axial Direction**at a solid angle of $\Omega = 0.01$ sr

Bezeichnung Parameter	Symbol Symbol	Wert Value		Einheit Unit
		SFH 4811	SFH 4813	
Strahlstärke Radiant intensity $I_F = 100$ mA, $t_p = 20$ ms	$I_{e \text{ min.}}$ $I_{e \text{ typ.}}$	25 40	2.5 4.5	mW/sr mW/sr
Strahlstärke Radiant intensity $I_F = 1$ A, $t_p = 100$ μ s	$I_{e \text{ typ.}}$	250	30	mW/sr

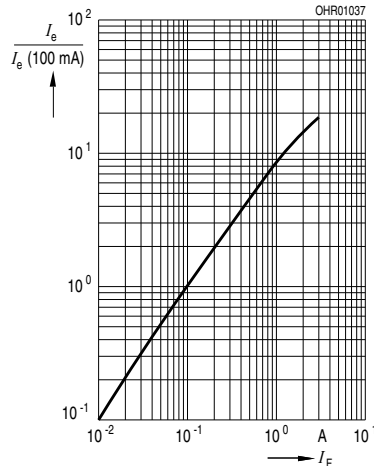
Relative Spectral Emission

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

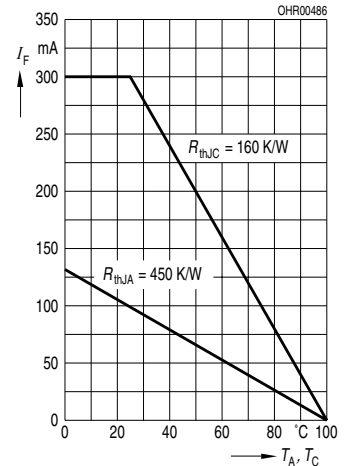


Radiant Intensity $I_e/I_e(100\text{ mA}) = f(I_F)$

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

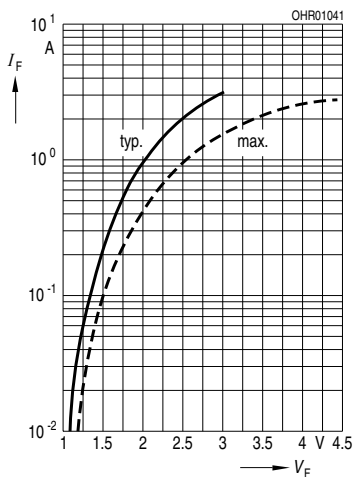


Max. Permissible Forward Current $I_F = f(T_A, T_C)$



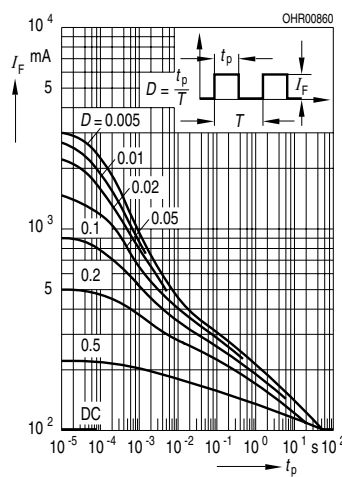
Forward Current $I_F = f(V_F)$

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

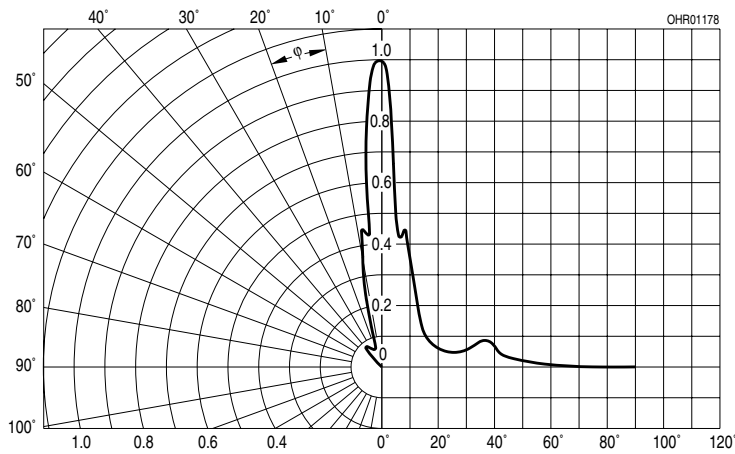


Permissible Pulse Handling Capability $I_F = f(\tau), T_C = 25\ ^\circ\text{C}$

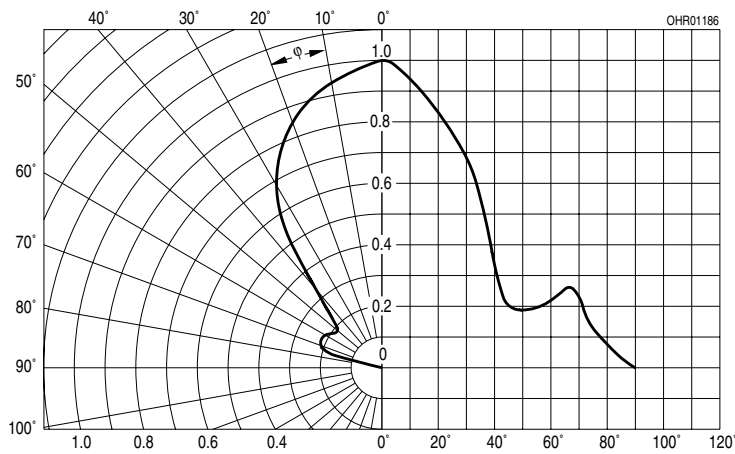
$R_{thJC} = 160\ \text{K/W}$, duty cycle $D = \text{parameter}$



Radiation Characteristics, SFH 4811 $I_{rel} = f(\varphi)$



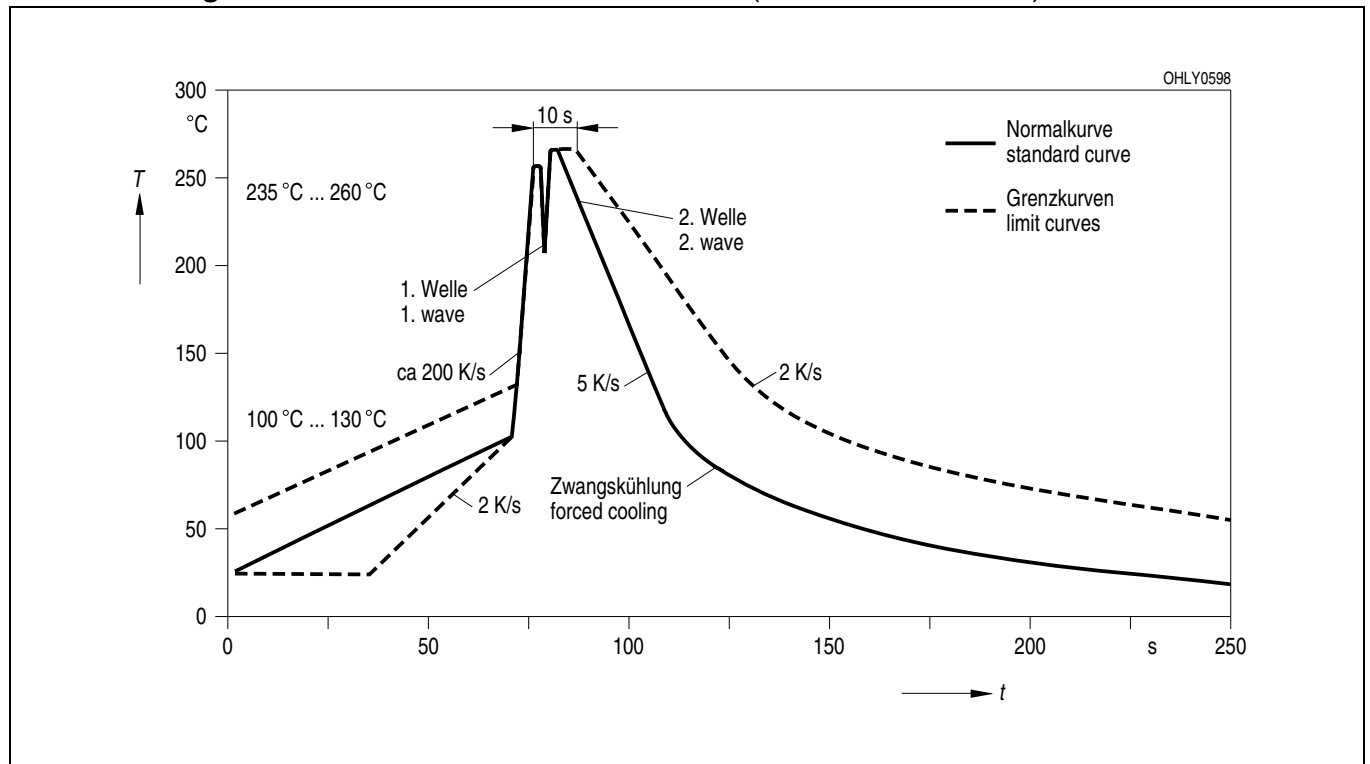
Radiation Characteristics, SFH 4813 $I_{rel} = f(\varphi)$



Lötbedingungen
Soldering Conditions
Wellenlöten (TTW)
TTW Soldering

(nach CECC 00802)

(acc. to CECC 00802)



Published by
OSRAM Opto Semiconductors GmbH
 Wernerwerkstrasse 2, D-93049 Regensburg
www.osram-os.com

© All Rights Reserved.

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 components¹, may only be used in life-support devices or systems² with the express written approval of OSRAM OS.

¹ A critical component is a component used in 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.

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。