

IR-Lumineszenzdiode (880 nm) im TO-46-Gehäuse
Infrared Emitter (880 nm) in TO-46 Package
Lead (Pb) Free Product - RoHS Compliant

SFH 4881
SFH 4883



SFH 4881



SFH 4883

Wesentliche Merkmale

- Hergestellt im Schmelzepitaxieverfahren
- Anode 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

Features

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

Applications

- Photointerrupters
- IR remote control
- Sensor technology

Typ Type	Bestellnummer Ordering Code	Strahlstärke ($I_F = 100 \text{ mA}$, $t_p = 20 \text{ ms}$) Radiant Intensity) I_e (mW/sr)
SFH 4881	Q62702P5302	≥ 40 (typ. 72)
SFH 4883	Q62702P5303	≥ 4 (typ. 8)

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	200	mA
Stoßstrom Surge current $t_p = 10\ \mu\text{s}, D = 0.01$	I_{FSM}	2.5	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 of peak emission	λ_{peak}	880	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max}	$\Delta\lambda$	80	nm
Abstrahlwinkel Half angle SFH 4881 SFH 4883	φ φ	± 5 ± 35	Grad deg.
Aktive Chipfläche Active chip area	A	0.16	mm ²
Abmessungen der aktiven Chipfläche Dimension of the active chip area	$L \times B$ $L \times W$	0.4×0.4	mm ²

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

Characteristics

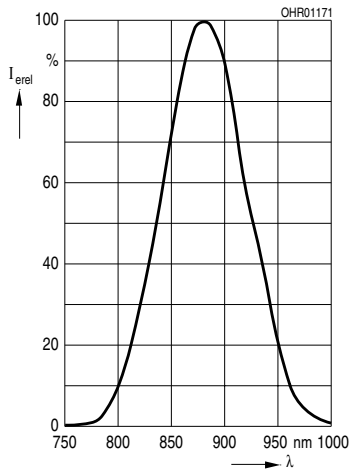
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Schaltzeiten, I_e von 10% auf 90% und von 90% auf 10% Switching times, I_e from 10% to 90% and from 90% to 10% $I_F = 100\text{ mA}$, $R_L = 50\ \Omega$	t_r , t_f	500	ns
Kapazität Capacitance $V_R = 0\text{ V}$, $f = 1\text{ MHz}$	C_o	25	pF
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	1.5 (≤ 1.8) 2.4 (≤ 3.0) 2.9 (≤ 3.4)	V V V
Sperrstrom Reverse current $V_R = 5\text{ V}$	I_R	0.01 (≤ 10)	μA
Gesamtstrahlungsfluß Total radiant flux $I_F = 100\text{ mA}$, $t_p = 20\text{ ms}$ SFH 4881 SFH 4883	Φ_e Φ_e	12 15	mW mW

Strahlstärke I_e in Achsrichtunggemessen bei einem Raumwinkel von $\Omega = 0.01\text{ sr}$ Radiant Intensity I_e in Axial Directionmeasured at a solid angle of $\Omega = 0.01\text{ sr}$

Bezeichnung Parameter	Symbol Symbol	Wert Value		Einheit Unit
		SFH 4881	SFH 4883	
Strahlstärke Radiant intensity $I_F = 100\text{ mA}$, $t_p = 20\text{ ms}$	$I_{e\text{ min}}$	40	4	mW/sr
	$I_{e\text{ typ}}$	72	8	mW/sr
Strahlstärke Radiant intensity $I_F = 1\text{ A}$, $t_p = 100\ \mu\text{s}$	$I_{e\text{ typ}}$	630	70	mW/sr

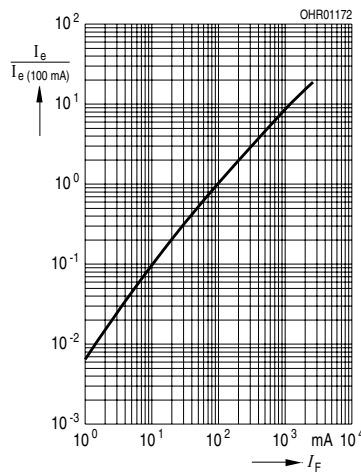
Relative Spectral Emission

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



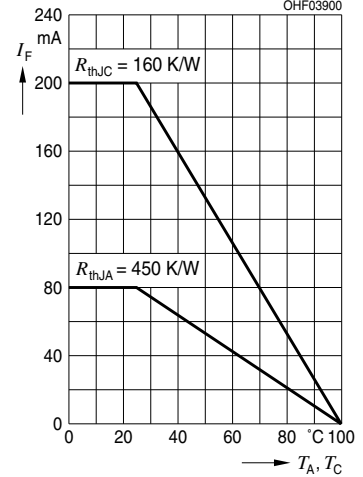
Radiant Intensity

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



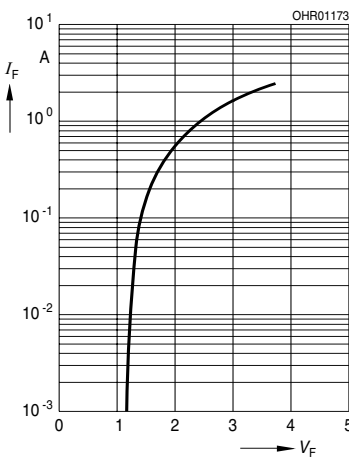
Max. Permissible Forward Current

$I_F = f(T_A, T_C)$



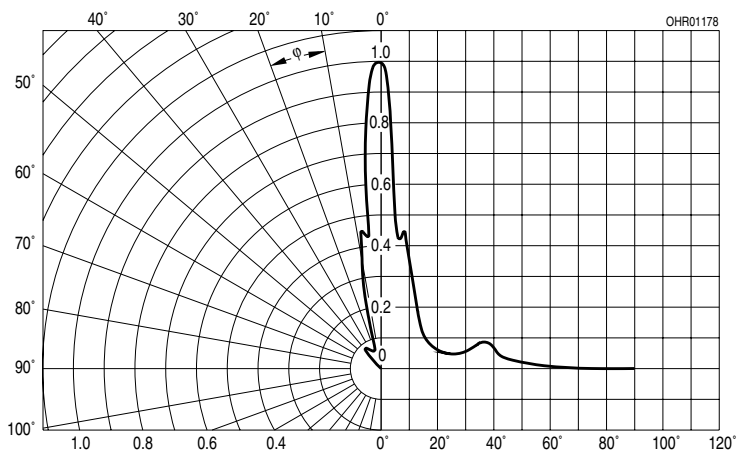
Forward Current

$I_F = f(V_F)$

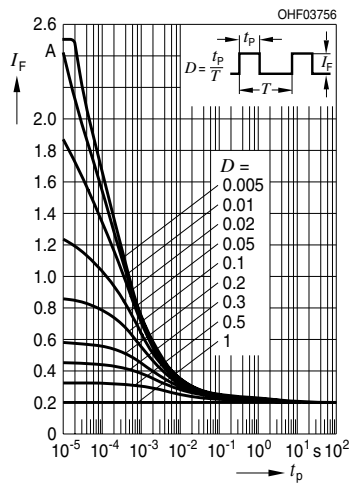


Radiation Characteristics

SFH 4881, $I_{\text{erel}} = f(\varphi)$

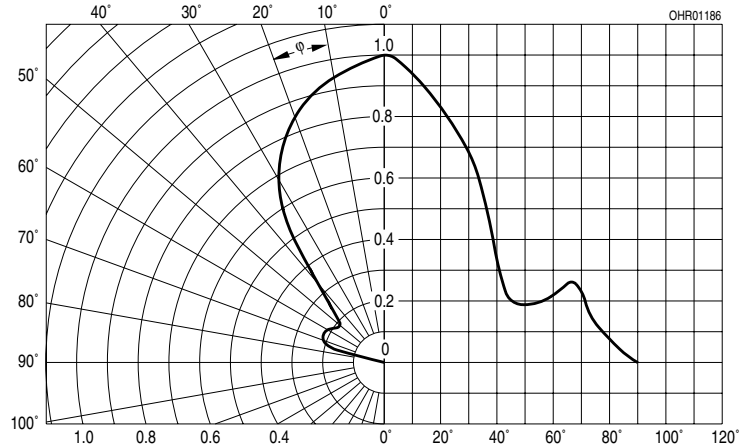


Permissible Pulse Handling Capability
 $I_F = f(\tau), T_C = 25^\circ\text{C}$,
 $R_{\text{thJC}} = 160 \text{ K/W}$, duty cycle $D =$
 parameter

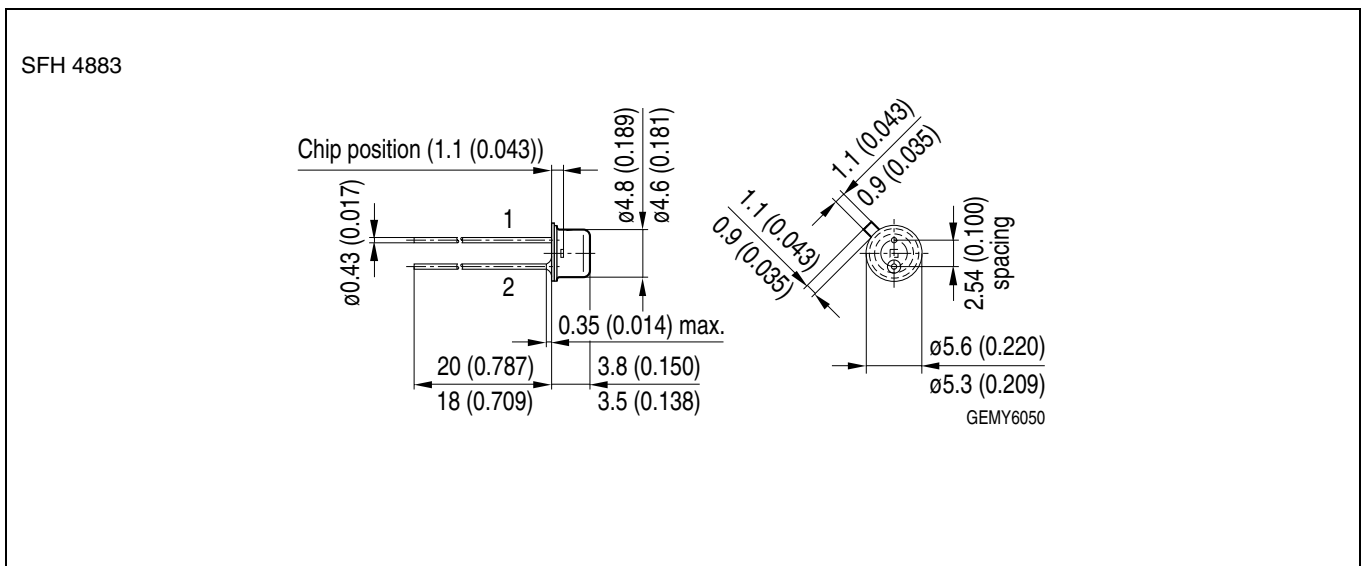
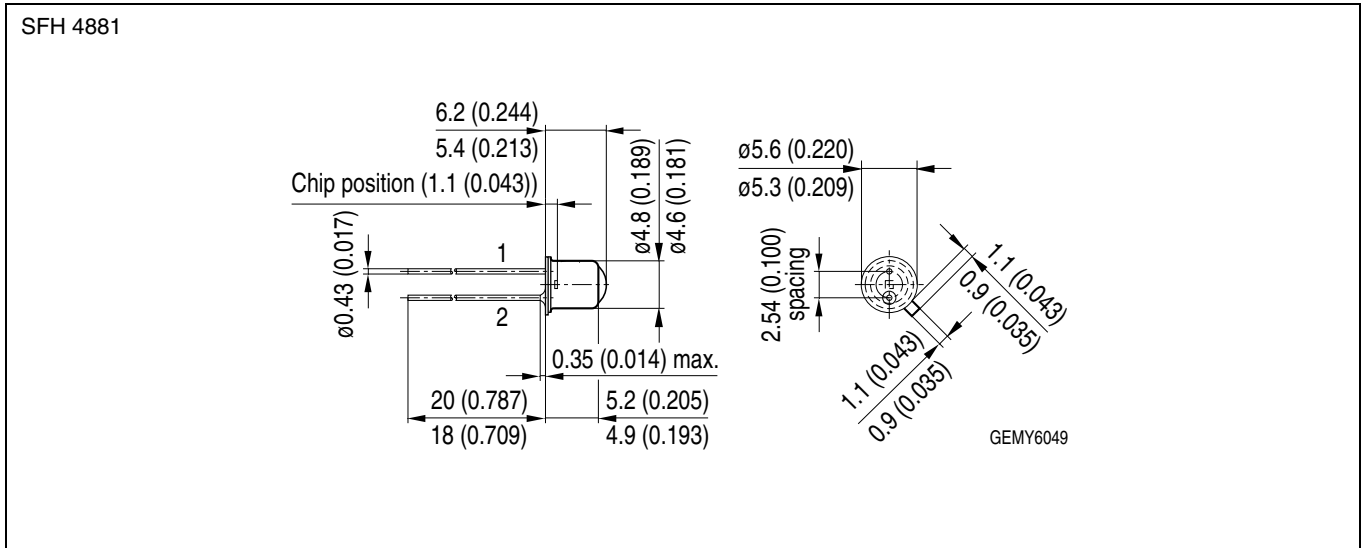


Radiation Characteristics

SFH 4883, $I_{\text{erel}} = f(\varphi)$



Maßzeichnungen
Package Outlines

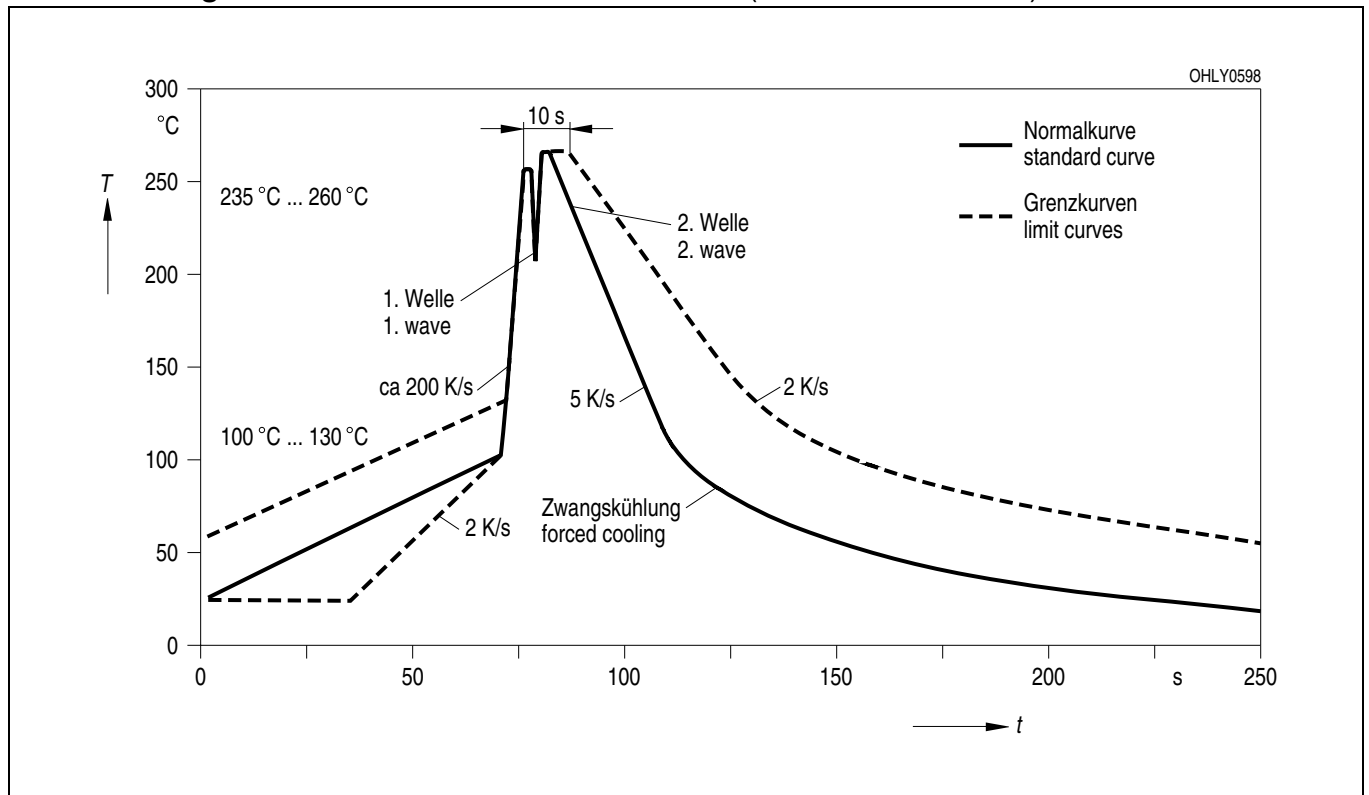


Maße in mm (inch) / Dimensions in mm (inch).

Gehäuse Package	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 ($1/10''$)
Anschlussbelegung Pin configuration	Anschluss 2: Kathode Pin 2 : cathode

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
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