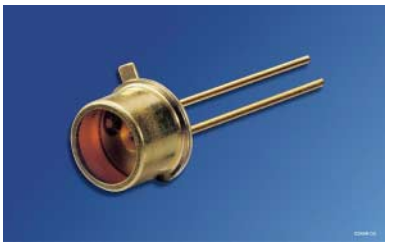
IR-Lumineszenzdiode (950 nm) im TO-46-Gehäuse
Infrared Emitter (950 nm) in TO-46 Package
Lead (Pb) Free Product - RoHS Compliant

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

Features

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

Anwendungen

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

Applications

- Photointerrupters
- IR remote control of various equipmet
- Sensor technology
- Light-grille barrier

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 °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 µs, 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 °C)
Characteristics

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der Strahlung Wavelength at peak emission I_F = 100 mA, t_p = 20 ms	λ_{peak}	950	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max} I_F = 100 mA, t_p = 20 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

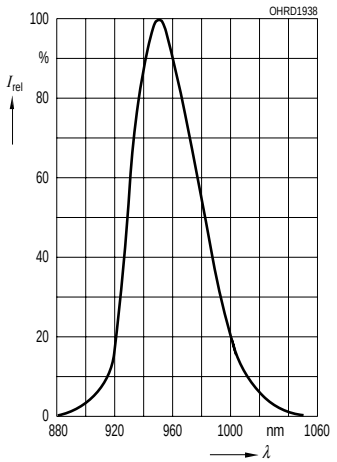
Kennwerte (T_A = 25 °C) (cont'd)
Characteristics

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 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	0.5	µs
Kapazität Capacitance V_R = 0 V, f = 1 MHz	C_o	25	pF
Durchlaßspannung Forward voltage I_F = 100 mA, t_p = 20 ms I_F = 1 A, t_p = 100 µs I_F = 1.5 A, t_p = 100 µs	 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 V	I_R	0.01 (≤ 1)	µA
Gesamtstrahlungsfluß Total radiant flux I_F = 100 mA, t_p = 20 ms	Φ_e	8	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	– 0.55	%/K
Temperaturkoeffizient von V_F, I_F = 100 mA Temperature coefficient of V_F, I_F = 100 mA	TC_V	– 1.5	mV/K
Temperaturkoeffizient von λ, I_F = 100 mA Temperature coefficient of λ, I_F = 100 mA	TC_λ	+ 0.3	nm/K

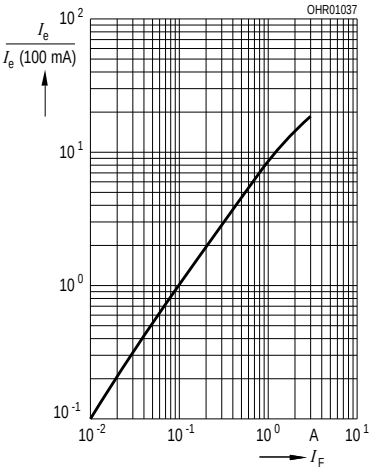
Gruppierung der Strahlstärke I_e in Achsrichtung
gemessen bei einem Raumwinkel Ω = 0.01 sr
Grouping of Radiant Intensity I_e in Axial Direction
at a solid angle of Ω = 0.01 sr

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

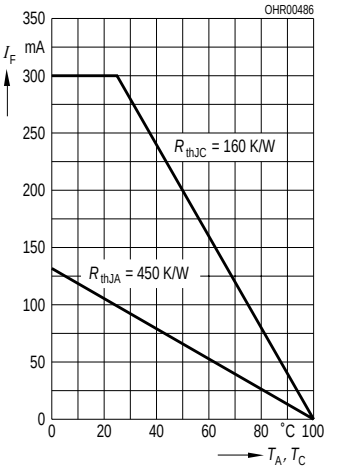
Relative Spectral Emission
$I_{rel} = f(\lambda)$



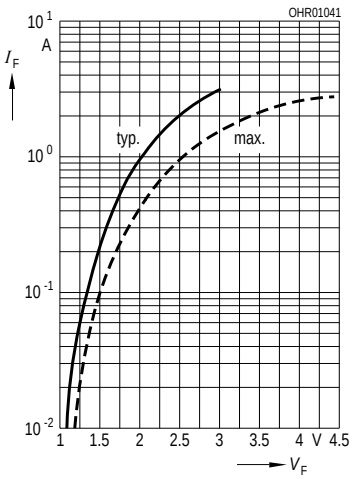
Radiant Intensity $I_e/I_{e\ (100\ mA)} = f(I_F)$
Single pulse, t_p = 20 µs



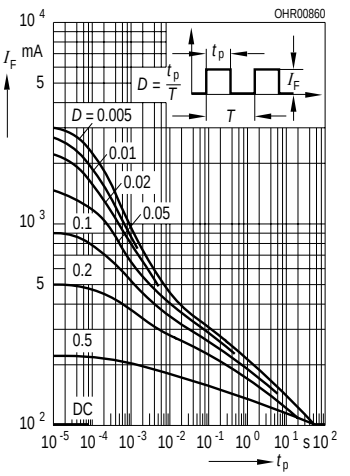
Max. Permissible Forward Current
$I_F = f(T_A, T_C)$



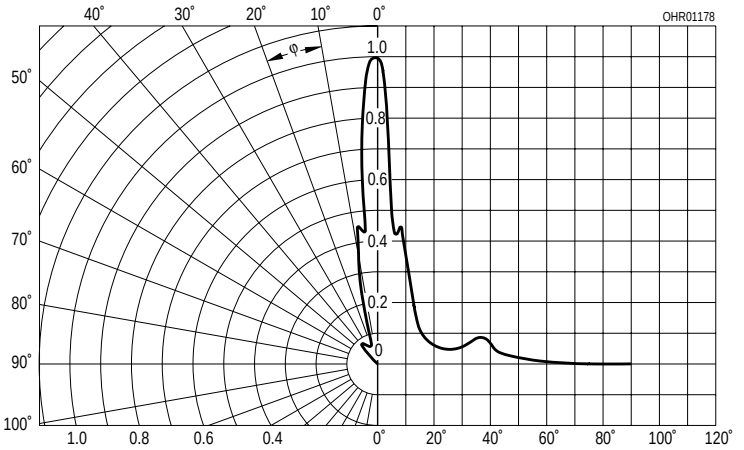
Forward Current
$I_F = f(V_F)$
Single pulse, t_p = 20 µs



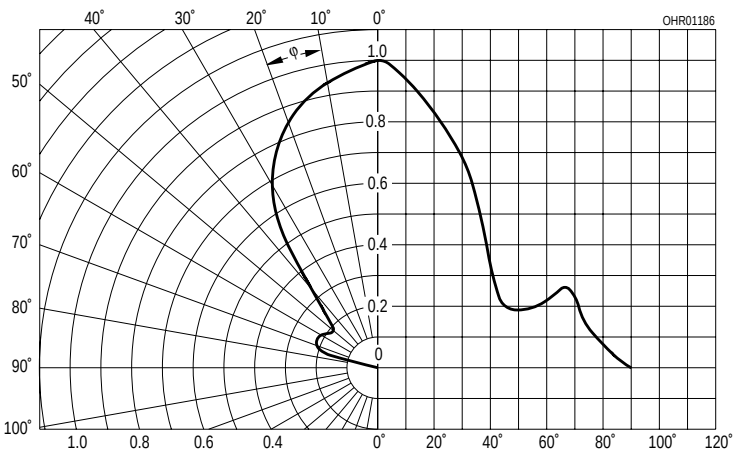
Permissible Pulse Handling Capability $I_F = f(\tau)$, T_C = 25 °C, R_{thJC} = 160 K/W, duty cycle D = parameter



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

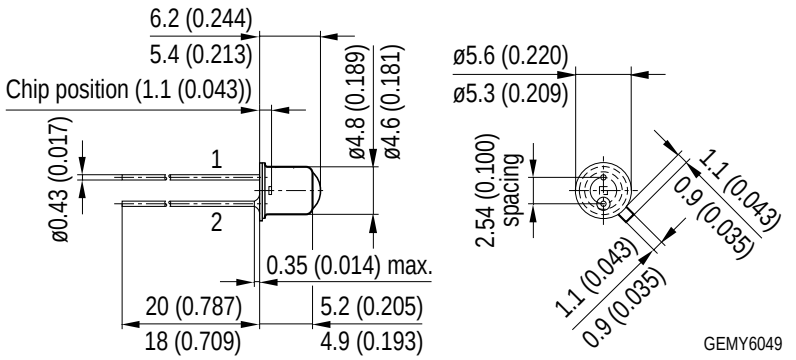


Radiation Characteristics, SFH 4813 $I_{rel} = f(\varphi)$

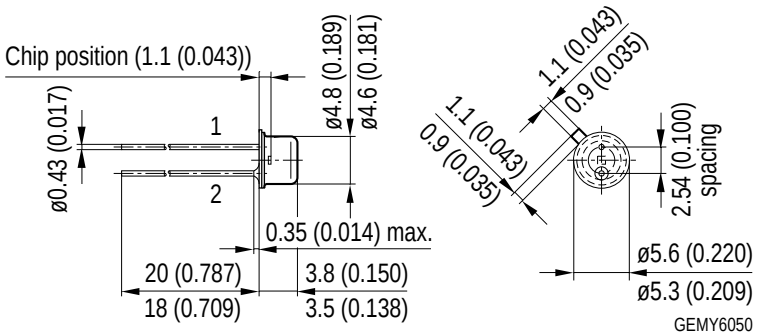


Maßzeichnung
Package Outlines

SFH 4811

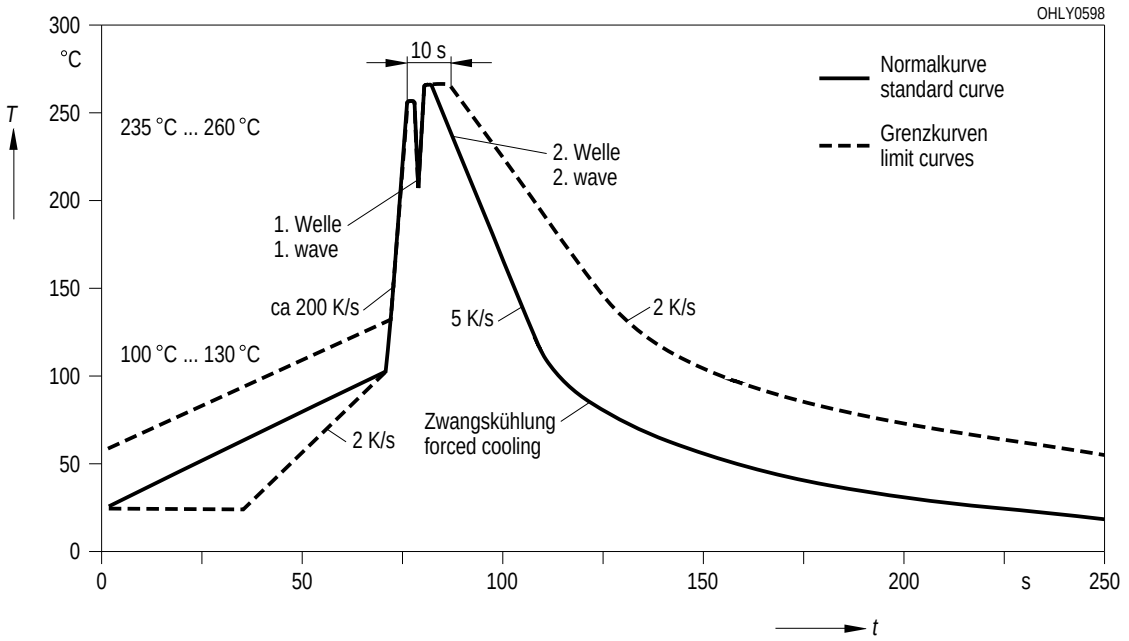


SFH 4813



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

Lötbedingungen
Soldering Conditions
Wellenlöten (TTW) (nach CECC 00802)
TTW Soldering (acc. to CECC 00802)



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