GaAlAs-Lumineszenzdiode (660 nm)
GaAlAs Light Emitting Diode (660 nm)

SFH 4860

Wesentliche Merkmale

- Hergestellt im Schmezepitaxieverfahren
- 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
- Lichtgitter

Applications

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

Typ Type	Bestellnummer Ordering Code	Gehäuse Package
SFH 4860	Q62702-P5053	18 A3 DIN 41876 (TO-18), Bodenplatte, Plankappe, Anschlüsse im 2.54-mm-Raster ($^{1}/_{10}$''), Anodenkennzeichnung: Nase am Gehäuseboden 18 A3 DIN 870 (TO -18), flat glass cap, lead spacing 2.54 mm ($^{1}/_{10}$''), anode marking: projection at package bottom

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
Sperrschichttemperatur Junction temperature	T_j	125	°C
Sperrspannung Reverse voltage	V_R	3	V
Durchlaßstrom Forward current	I_F	50	mA
Stoßstrom, t_p = 10 µs, D = 0 Surge current	I_{FSM}	1	A
Verlustleistung Power dissipation	P_{tot}	140	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 = 50 mA	λ_{peak}	660	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max} I_F = 50 mA	$\Delta\lambda$	25	nm
Abstrahlwinkel Half angle	φ	± 50	Grad deg.
Aktive Chipfläche Active chip area	A	0.106	mm^2
Abmessungen der aktiven Chipfläche Dimension of the active chip area	$L \times B$ $L \times W$	0.325 × 0.325	mm
Schaltzeiten, I_e von 10% auf 90% und von 90% auf 10%, bei I_F = 50 mA, R_L = 50 Ω Switching times, I_e from 10% to 90% and from 90% to 10%, I_F = 50 mA, R_L = 50 Ω	t_r, t_f	100	ns

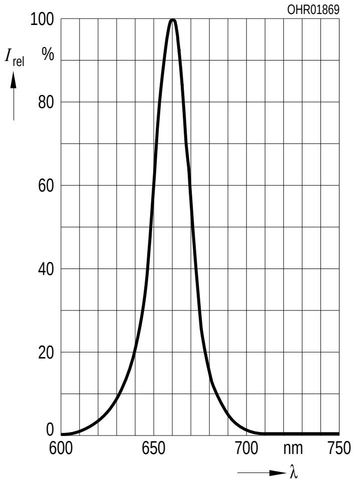
Kennwerte (T_A = 25 °C)
Characteristics (cont'd)

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Kapazität, V_R = 0 V, f = 1 MHz Capacitance	C_o	30	pF
Durchlaßspannung, I_F = 50 mA, t_p = 20 ms Forward voltage	V_F	2 (≤ 2.8)	V
Sperrstrom, V_R = 3 V Reverse current	I_R	0.01 (≤ 10)	µA
Gesamtstrahlungsfluß, I_F = 50 mA, t_p = 20 ms Total radiant flux	Φ_e	3	mW
Temperaturkoeffizient von I_e bzw. Φ_e, I_F = 50 mA Temperature coefficient of I_e or Φ_e, I_F = 50 mA	TC_I	– 0.4	%/K
Temperaturkoeffizient von V_F, I_F = 50 mA Temperature coefficient of V_F, I_F = 50 mA	TC_V	– 3	mV/K
Temperaturkoeffizient von λ, I_F = 50 mA Temperature coefficient of λ, I_F = 50 mA	TC_λ	+ 0.16	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

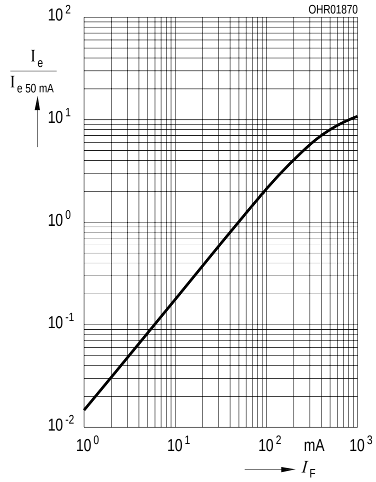
Bezeichnung **Parameter**	**Symbol**	**Werte** **Values**	**Einheit** **Unit**
Strahlstärke Radiant intensity I_F = 50 mA, t_p = 20 ms	$I_{e\ min}$ $I_{e\ typ}$	≥ 0.63 1.3	mW/sr mW/sr
Strahlstärke Radiant intensity I_F = 1 A, t_p = 100 µs	$I_{e\ typ}$	15	mW/sr

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

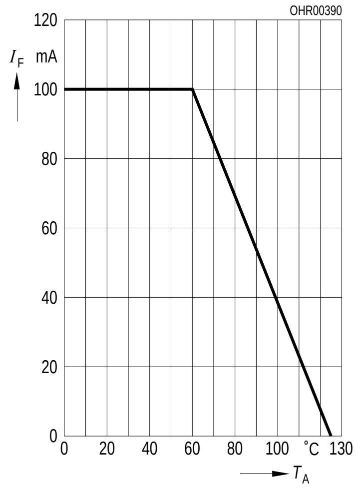


Radiant Intensity $\frac{I_e}{I_{e\,50\,mA}} = f(I_F)$

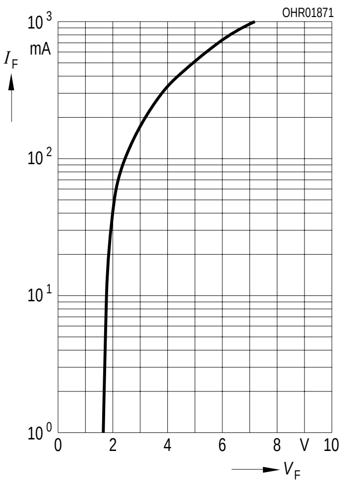
Single pulse, t_p = 20 µs



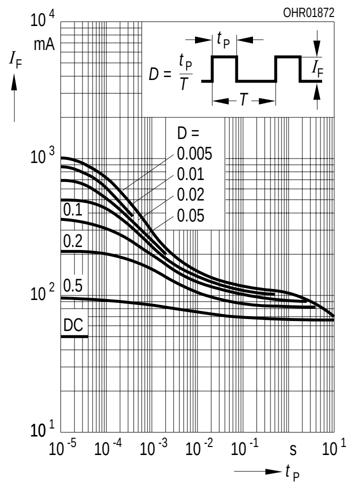
Max. Permissible Forward Current
$I_F = f(T_C)$, R_{thJC} = 160 K/W



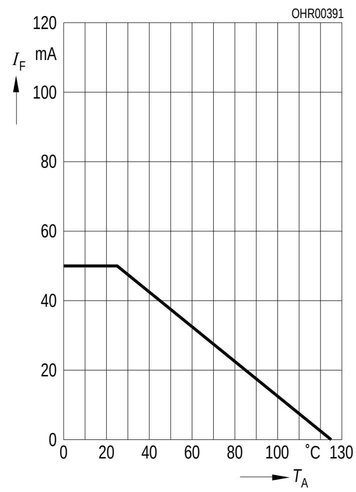
Forward Current
$I_F = f(V_F)$, single pulse, t_p = 20 µs



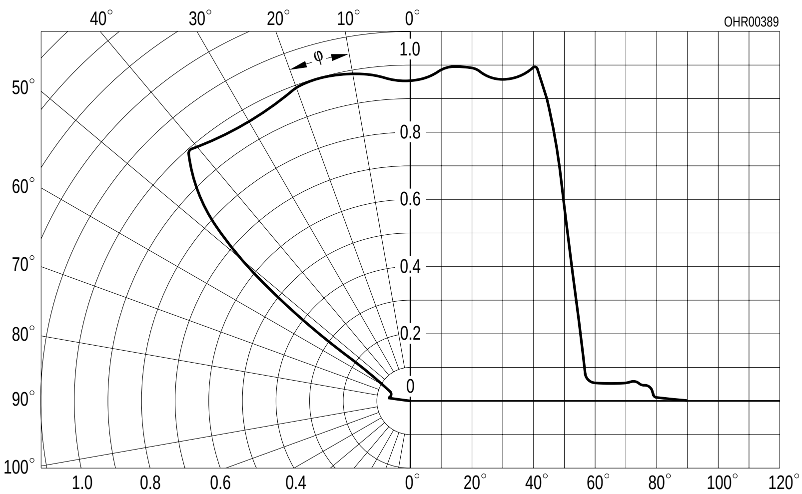
Permissible Pulse Handling Capability $I_F = f(\tau)$, T_A = 25 °C, duty cycle D = parameter



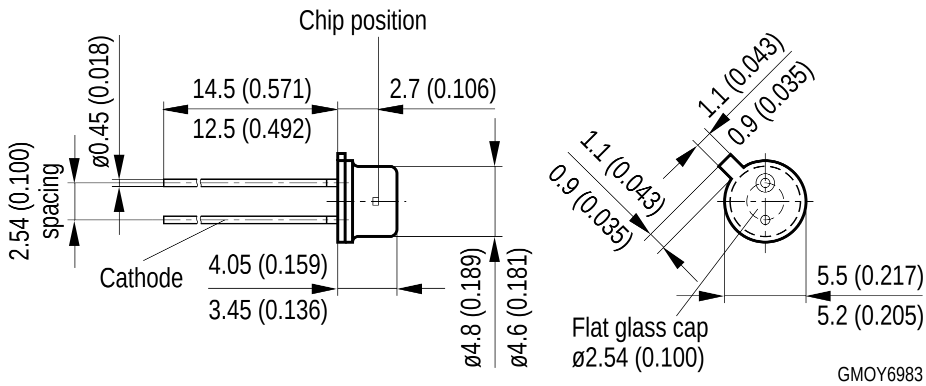
Max. Permissible Forward Current
$I_F = f(T_A)$, R_{thJA} = 450 K/W



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



Maßzeichnung
Package Outlines



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

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