

GaAlAs-Lumineszenzdiode (660 nm)
GaAlAs Light Emitting Diode (660 nm)
Lead (Pb) Free Product - RoHS Compliant
SFH 4860



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 equipment
- Sensor technology
- Light-grille barrier

Typ Type	Bestellnummer Ordering Code	Gehäuse Package
SFH 4860	Q62702P5053	18 A3 DIN 41876 (TO-18), Bodenplatte, Plankappe, Anschlüsse im 2.54-mm-Raster ($\frac{1}{10}$ "") Anodenkennzeichnung: Nase am Gehäuseboden 18 A3 DIN 870 (TO-18), flat glass cap, lead spacing 2.54 mm ($\frac{1}{10}$ "") anode making: projection at package bottom

Grenzwerte ($T_A = 25\text{ °C}$)**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
Sperrschichttemperatur Junction temperature	T_j	125	°C
Sperrspannung Reverse voltage	V_R	3	V
Durchlassstrom Forward current	I_F	50	mA
Stoßstrom, $t_p = 10\text{ }\mu\text{s}$, $D = 0$ 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 ($T_A = 25\text{ °C}$)**Characteristics**

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der Strahlung Wavelength at peak emission $I_F = 50\text{ mA}$	λ_{peak}	660	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max} $I_F = 50\text{ mA}$	$\Delta\lambda$	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 ²
Schaltzeiten, I_e von 10% auf 90% und von 90% auf 10%, bei $I_F = 50\text{ mA}$, $R_L = 50\text{ }\Omega$ Switching times, I_e from 10% to 90% and from 90% to 10%, $I_F = 50\text{ mA}$, $R_L = 50\text{ }\Omega$	t_r, t_f	100	ns

Kennwerte ($T_A = 25\text{ °C}$)

Characteristics (cont'd)

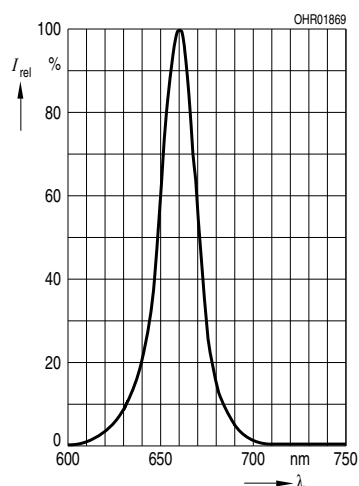
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kapazität, $V_R = 0\text{ V}$, $f = 1\text{ MHz}$ Capacitance	C_o	25	pF
Durchlassspannung, $I_F = 50\text{ mA}$, $t_p = 20\text{ ms}$ Forward voltage	V_F	$2(\leq 2.8)$	V
Sperrstrom, $V_R = 3\text{ V}$ Reverse current	I_R	$0.01 (\leq 10)$	μA
Gesamtstrahlungsfluss, $I_F = 50\text{ mA}$, $t_p = 20\text{ ms}$ Total radiant flux	Φ_e	3	mW
Temperaturkoeffizient von I_e bzw. Φ_e , $I_F = 50\text{ mA}$ Temperature coefficient of I_e or Φ_e , $I_F = 50\text{ mA}$	TC_I	- 0.4	%/K
Temperaturkoeffizient von V_F , $I_F = 50\text{ mA}$ Temperature coefficient of V_F , $I_F = 50\text{ mA}$	TC_V	- 3	mV/K
Temperaturkoeffizient von λ , $I_F = 50\text{ mA}$ Temperature coefficient of λ , $I_F = 50\text{ mA}$	TC_λ	+ 0.16	nm/K

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

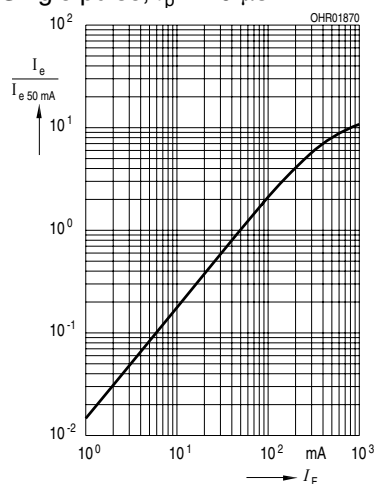
Bezeichnung Parameter	Symbol	Werte Values	Einheit Unit
Strahlstärke Radiant intensity $I_F = 50\text{ mA}$, $t_p = 20\text{ ms}$	$I_{e\text{ min}}$ $I_{e\text{ typ}}$	≥ 0.63 1.3	mW/sr mW/sr
Strahlstärke Radiant intensity $I_F = 1\text{ A}$, $t_p = 100\text{ }\mu\text{s}$	$I_{e\text{ typ}}$	15	mW/sr

Relative Spectral Emission

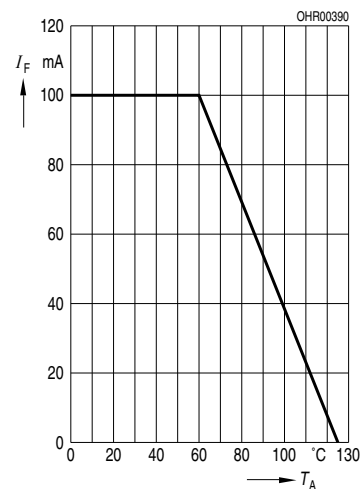
$$I_{\text{rel}} = f(\lambda)$$



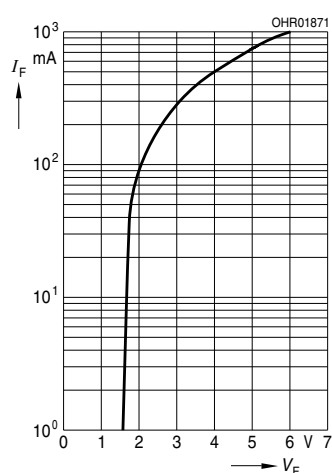
$$\text{Radiant Intensity } \frac{I_e}{I_{e \ 50 \text{ mA}}} = f(I_F)$$

Single pulse, $t_p = 20 \mu\text{s}$ **Max. Permissible Forward Current**

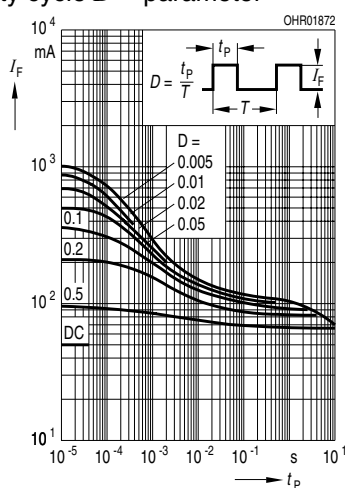
$$I_F = f(T_C), R_{\text{thJC}} = 160 \text{ K/W}$$

**Forward Current**

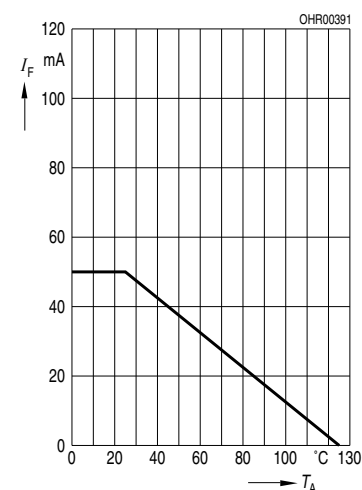
$$I_F = f(V_F), \text{ single pulse, } t_p = 20 \mu\text{s}$$

**Permissible Pulse Handling Capability**

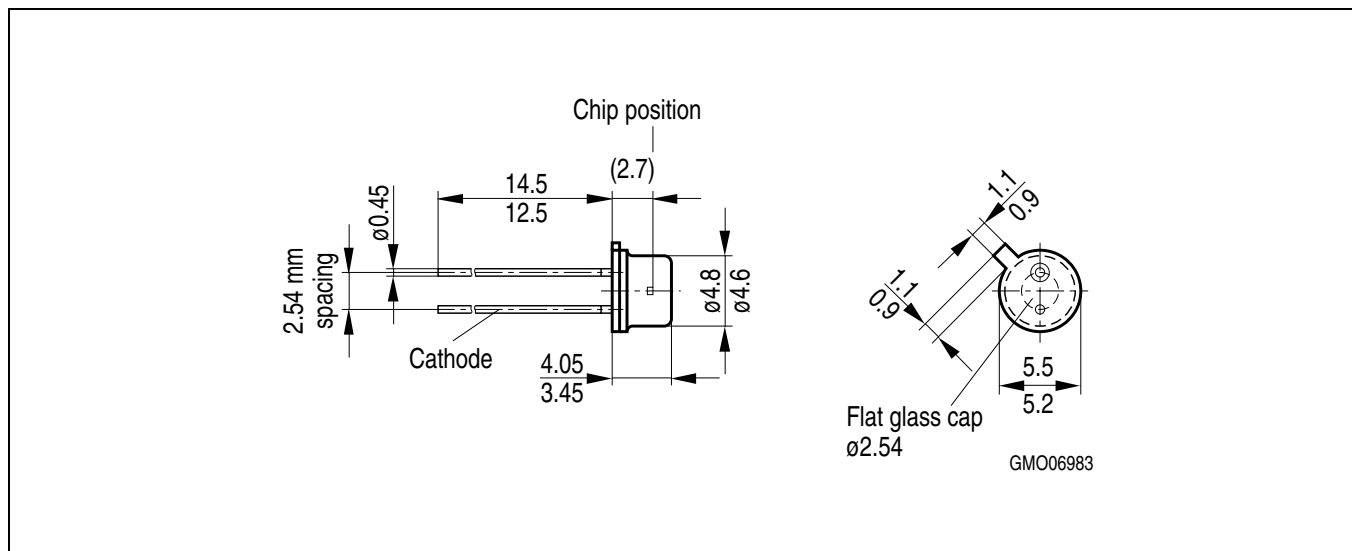
$$I_F = f(\tau), T_A = 25^\circ\text{C}, \text{ duty cycle } D = \text{parameter}$$

**Max. Permissible Forward Current**

$$I_F = f(T_A), R_{\text{thJA}} = 450 \text{ K/W}$$



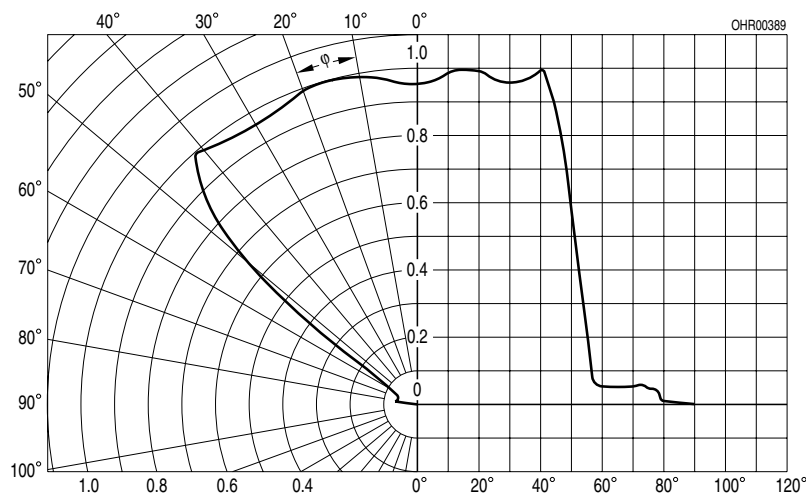
Maßzeichnung Package Outlines



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

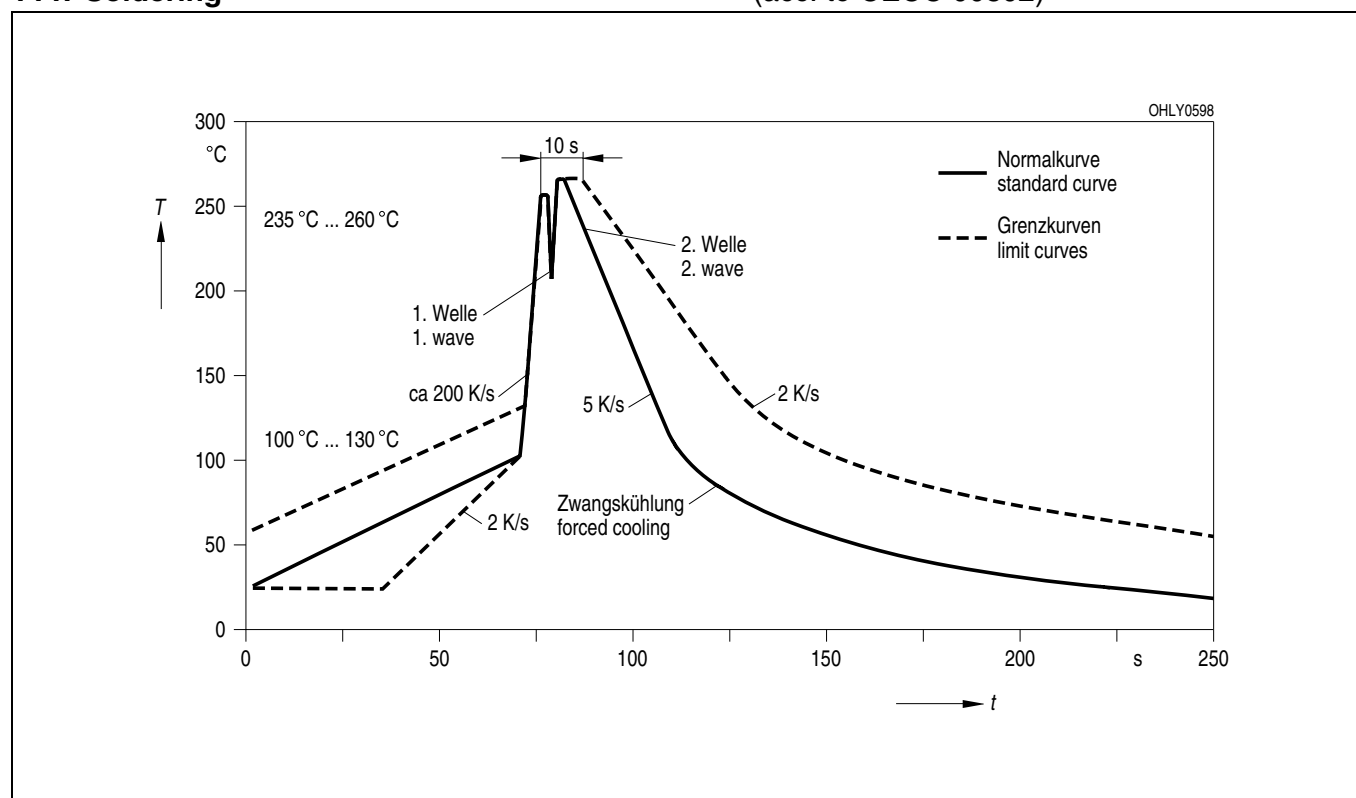
Radiation Characteristics

$$I_{\text{rel}} = f(\varphi)$$



Lötbedingungen
Soldering Conditions
Wellenlöten (TTW)
TTW Soldering

(nach CECC 00802)
(acc. to CECC 00802)



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