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

SFH 464

Wesentliche Merkmale

- Strahlung im sichtbaren Rotbereich ohne IR-Anteil
- Kathode galvanisch mit dem Gehäuseboden verbunden
- Hohe Zuverlässigkeit
- Kurze Schaltzeiten
- Gehäusegleich mit BP 103, LD 242
- Anwendungsklassen nach DIN 40 040 GQG

Features

- Radiation without IR in the visible red range
- Cathode is electrically connected to the case
- High reliability
- Short switching times
- Same package as BP 103, LD 242
- DIN humidity category in acc. with DIN 40 040 GQG

Anwendungen

- Lichtschranken für Gleich- und Wechsellichtbetrieb
- Sensorik
- Lichtgitter
- LWL

Applications

- Photointerrupters
- Sensor technology
- Light curtains
- Fiber optic transmision

Typ Type	Bestellnummer Ordering Code	Gehäuse Package
SFH 464 E7800	Q62702P1745	18 A3 DIN 41876 (TO-18), Bodenplatte, klares Epoxy-Gießharz, Anschlüsse im 2.54-mm-Raster ($^1/_{10}$”), Anodenkennzeichnung: Nase am Gehäuseboden 18 A3 DIN 870 (TO -18), clear epoxy resin, lead spacing 2.54 mm ($^1/_{10}$”), anode marking: projection at package bottom

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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 … + 80	°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, t_p = 20 ms	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[1)] Half angle[1)]	φ	± 23	Grad deg.
Aktive Chipfläche Active chip area	A	0.106	mm²
Abmessungen der aktiven Chipfläche Dimension of the active chip area	$L \times B$ $L \times W$	0.325 × 0.325	mm²
Abstand Chipoberfläche bis Gehäuseoberfläche Distance chip front to case surface	H	0.3 … 0.7	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

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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	2.1 (≤ 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	11	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

[1] Fußnote siehe **Seite 4**.

[1] Footnote see **Page 4**.

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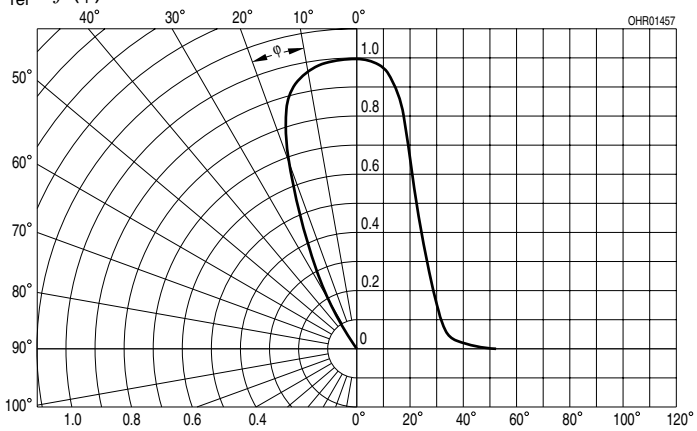
Strahlstärke I_e in Achsrichtung[1)]
gemessen bei einem Raumwinkel Ω = 0.01 sr
Radiant Intensity I_e in Axial Direction[1)]
at a solid angle of Ω = 0.01 sr

Bezeichnung Parameter	Symbol	Werte Values	Einheit Unit
Strahlstärke[1)] Radiant intensity[1)] I_F = 50 mA, t_p = 20 ms	I_e	≥ 1	mW/sr

[1)] Die Messung der Strahlstärke und des Halbwinkels erfolgt mit einer Lochblende vor dem Bauteil (Durchmesser der Lochblende: 1.1 mm; Abstand Lochblende zu Gehäuserückseite: 4 mm). Dadurch wird sichergestellt, daβ bei der Strahlstärkemessung nur diejenige Strahlung in Achsrichtung bewertet wird, die direkt von der Chipoberfläche austritt. Von der Bodenplatte reflektierte Strahlung (vagabundierende Strahlung) wird dagegen nicht bewertet. Diese Reflexionen sind besonders bei Abbildungen der Chipoberfläche über Zusatzoptiken störend (z.B. Lichtschranken groβer Reichweite). In der Anwendung werden im allgemeinen diese Reflexionen ebenfalls durch Blenden unterdrückt. Durch dieses, der Anwendung entsprechende Meβverfahren ergibt sich für den Anwender eine besser verwertbare Größe. Diese Lochblendenmessung ist gekennzeichnet durch den Eintrag „E 7800“, der an die Typenbezeichnung angehängt ist.

[1)] An aperture is used in front of the component for measurement of the radiant intensity and the half angle (diameter of the aperture: 1.1 mm; distance of aperture to case back side: 4 mm). This ensures that solely the radiation in axial direction emitting directly from the chip surface will be evaluated during measurement of the radiant intensity. Radiation reflected by the bottom plate (stray radiation) will not be evaluated. These reflections impair the projection of the chip surface by additional optics (e.g. long-range light reflection switches). In respect of the application of the component, these reflections are generally suppressed by apertures as well. This measuring procedure corresponding with the application provides more useful values. This aperture measurement is denoted by “E 7800” added to the type designation.

Radiation Characteristics
$I_{rel} = f(\varphi)$[1)]



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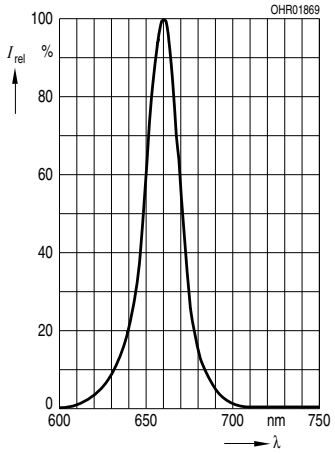
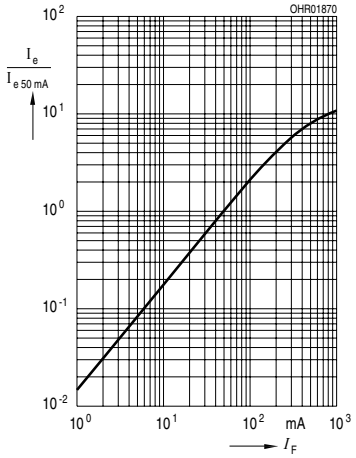
Relative Spectral Emission
$I_{rel} = f(\lambda)$

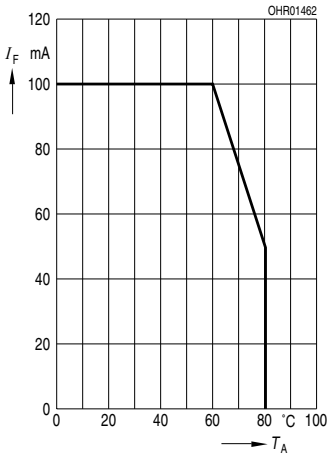


Radiant Intensity $\frac{I_e}{I_{e\,50\,mA}} = f(I_F)$

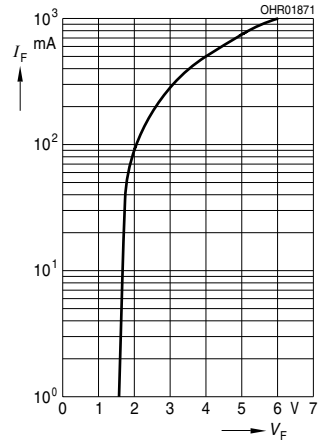
Single pulse, t_p = 20 µs



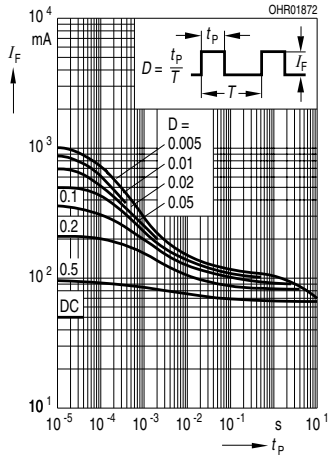
Max. Permissible Forward Current
$I_F = f(T_C)$, R_{thJC} = 160 K/W



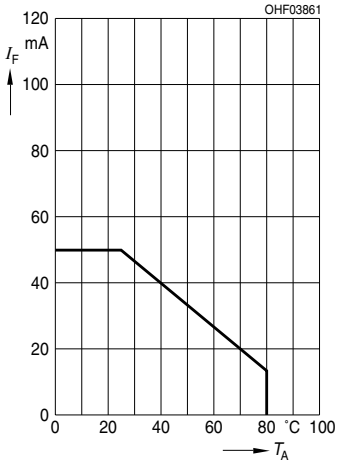
Forward Current
$I_F = f(V_F)$, single pulse, t_p = 20 µs



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



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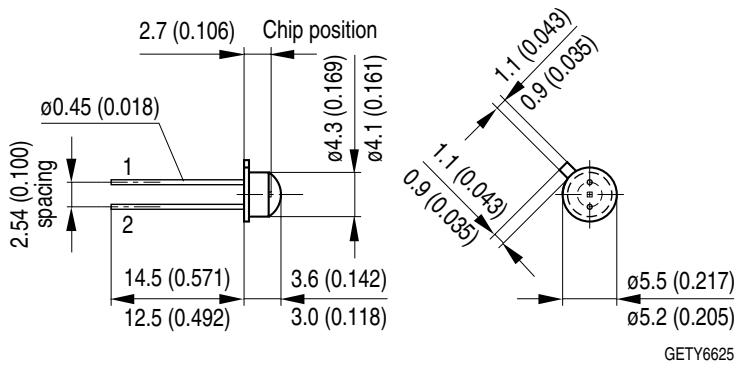
Maßzeichnung
Package Outlines



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

Anschlussbelegung Pin configuration	1 = Anode / anode 2 = Kathode / cathode

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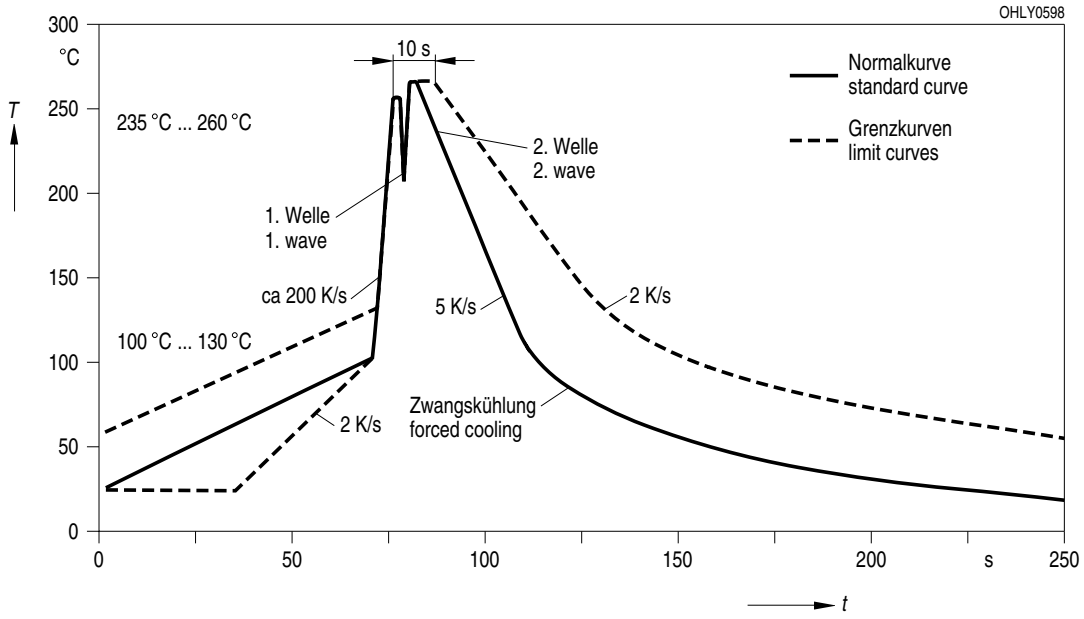
Lötbedingungen
Soldering Conditions
Wellenlöten (TTW) (nach CECC 00802)
TTW Soldering (acc. to CECC 00802)



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