UV-Lumineszensdiode
UV Light Emitting Diode
Lead (Pb) Free Product - RoHS Compliant

SFH 4840

Vorläufige Daten / Preliminary Data

Wesentliche Merkmale

- UV-LED mit Emissionswellenlänge 395nm
- Enger Abstrahlwinkel
- Hermetisch dichtes Gehäuse
- ESD-Festigkeit Klasse 1 nach MIL-STD-883E

Features

- UV-LED with Peakwavelength 395nm
- Narrow emission angle
- Hermetically sealed package
- ESD-Classification Class 1 according to MIL-STD-883E

Anwendungen

- Kleber- und Lackaushärtung
- Erkennen von Sicherheitsmerkmalen auf Geldscheinen

Applications

- Curing of glue and laquer
- Recognition of safety features of money bills

Sicherheitshinweise

Je nach Betriebsart emittieren diese Bauteile hochkonzentrierte, nicht sichtbare Ultraviolett-Strahlung, die gefährlich für das menschliche Auge sein kann. Produkte, die diese Bauteile enthalten, müssen gemäß den Sicherheits-richtlinien der IEC-Norm 60825-1 behandelt werden.

Safety Advices

Depending on the mode of operation, these devices emit highly concentrated non visible ultraviolet light which can be hazardous to the human eye. Products which incorporate these devices have to follow the safety precautions given in IEC 60825-1 “Safety of laser products”.

Typ **Type**	**Bestellnummer** **Ordering Code**	**Strahlstärkegruppierung** [1] (I_F = 30mA, t_p = 20 ms) **Radiant intensity grouping** [1] I_e (mW/sr)
SFH 4840	on request	typ. 45

[1] gemessen bei einem Raumwinkel Ω = 0.01 sr
measured at a solid angle of Ω = 0.01 sr

Grenzwerte
Maximum Ratings

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebstemperatur Operating temperature range	T_{op}	– 20 … + 80	°C
Lagertemperatur Storage temperature range	T_{stg}	– 30 … + 100	°C
Sperrspannung Reverse voltage	V_R	5	V
Vorwärtsgleichstrom, $T_C \leq 25$ °C Forward current	I_F	30	mA
Stoßstrom, $t_p = 10$ µs, $D = 0$, $T_C = 25$ °C Surge current	I_{FSM}	200	mA
Verlustleistung $T_C = 25$ °C Power dissipation	P_{tot}	120	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 $I_F = 30$ mA	λ_{peak}	395	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max} $I_F = 30$ mA30 mA	$\Delta\lambda$	12	nm
Abstrahlwinkel Half angle	φ	± 3	Grad deg.
Aktive Chipfläche Active chip area	A	0.058	mm^2
Abmessungen der aktiven Chipfläche Dimension of the active chip area	$L \times B$ $L \times W$	0.24 × 0.24	mm
Gesamte Chipfläche Entire chip area	A	0.09	mm^2
Abmessungen der gesamten Chipfläche Dimension of the entire chip area	$L \times B$ $L \times W$	0.3 × 0.3	mm

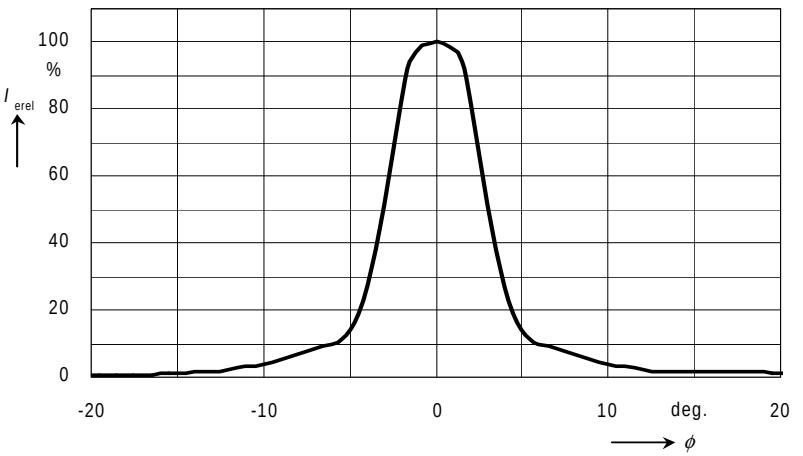
Kennwerte (T_A = 25 °C)
Characteristics (cont'd)

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**	**Einheit** **Unit**
Schaltzeiten, I_e von 10% auf 90% und von 90% auf 10%, bei I_F = 30 mA, R_L = 50 Ω Switching times, I_e from 10% to 90% and from 90% to 10%, I_F = 30 mA, R_L = 50 Ω	t_r, t_f	30	ns
Durchlaßspannung Forward voltage I_F = 30 mA, t_p = 20 ms	V_F	3.7 (< 4.3)	V
Sperrstrom Reverse current V_R = 5 V	I_R	≤ 100	µA
ESD-Festigkeit (Human Body Model) ESD Threshold (Human Body Model)	V_{ESD}	1000	V
Gesamtstrahlungsfluß Total radiant flux I_F = 30 mA, t_p = 20 ms	Φ_e	2.5	mW

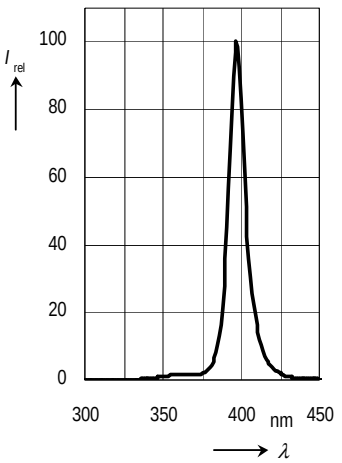
Strahlstärke I_e in Achsrichtung
gemessen bei einem Raumwinkel Ω = 0.01 sr
Radiant Intensity I_e in Axial Direction
at a solid angle of Ω = 0.01 sr

Bezeichnung Parameter	Symbol	Werte Values	Einheit Unit
Strahlstärke Radiant intensity I_F = 30 mA, t_p = 20 ms	$I_{e\ typ}$	45	mW/sr

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

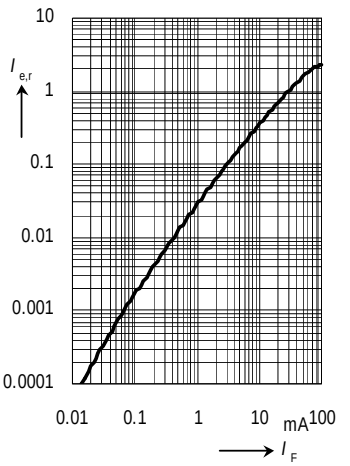


Relative Spectral Emission
$I_{rel} = f(\lambda)$

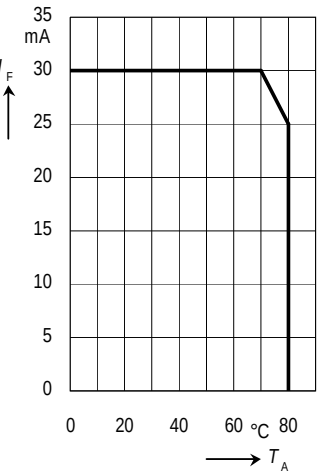


Radiant Intensity $\frac{I_e}{I_e\ 100\ mA} = f(I_F)$

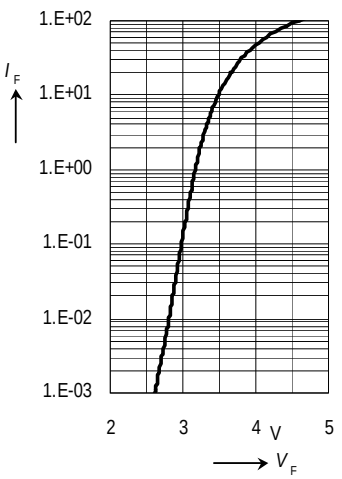
Single pulse, t_p = 20 µs



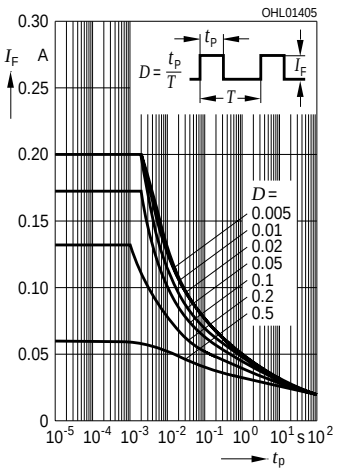
Max. Permissible Forward Current
$I_F = f(T_A)$, R_{thJA} = 450 K/W



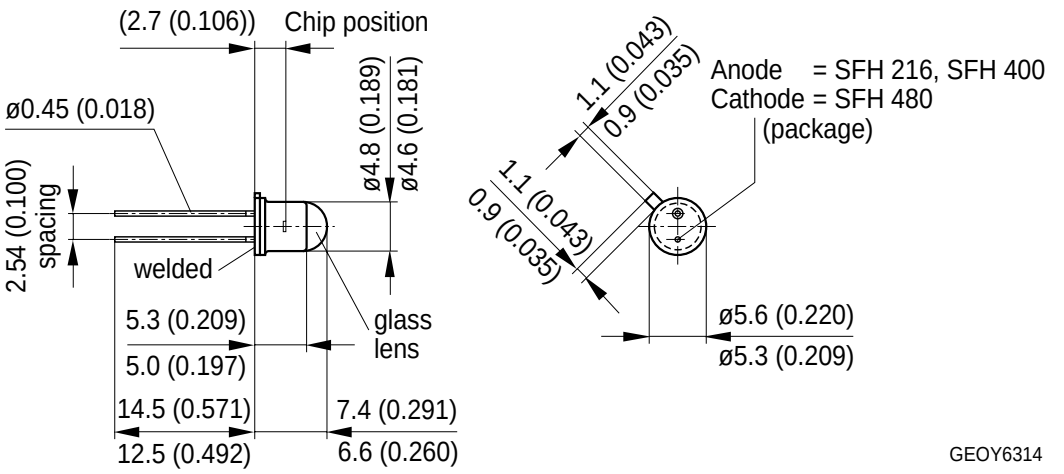
Forward Current $I_F = f(V_F)$
Single pulse, t_p = 20 µs



Permissible Pulse Handling Capability $I_F = f(t_p)$, T_C = 25 °C, duty cycle D = parameter



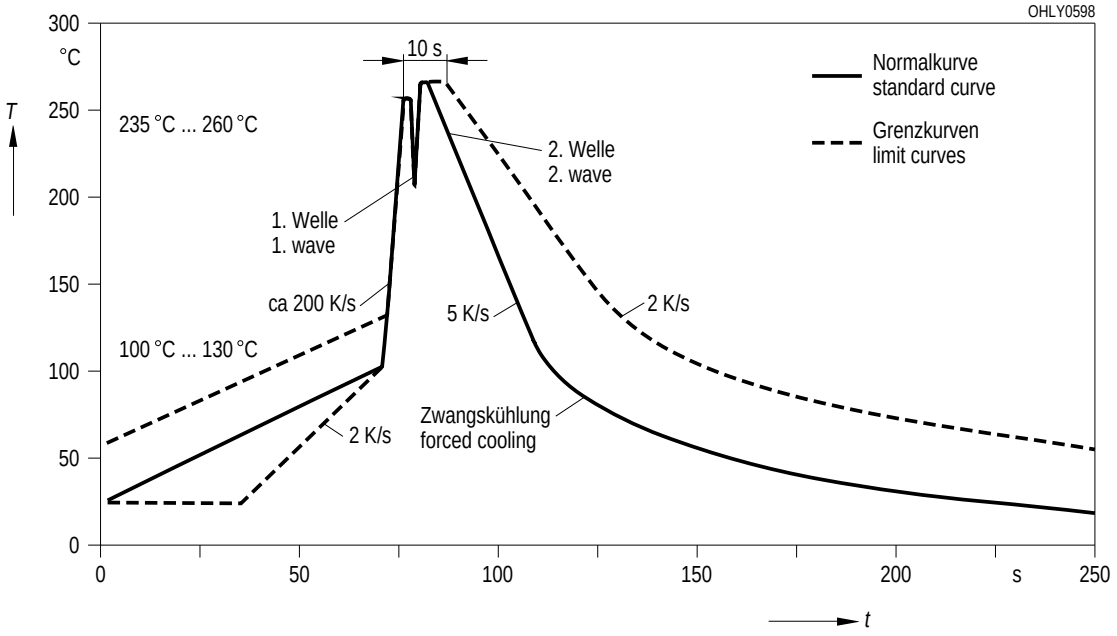
Maßzeichnung
Package Outlines



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

Anode marking: flag at package

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



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The information describes the type of component and shall not be considered as assured characteristics.
Terms of delivery and rights to change design reserved. Due to technical requirements components may contain dangerous substances. For information on the types in question please contact our Sales Organization.

Packing

Please use the recycling operators known to you. We can also help you – get in touch with your nearest sales office. By agreement we will take packing material back, if it is sorted. You must bear the costs of transport. For packing material that is returned to us unsorted or which we are not obliged to accept, we shall have to invoice you for any costs incurred.

Components used in life-support devices or systems must be expressly authorized for such purpose! Critical components [1] , may only be used in life-support devices or systems [2] with the express written approval of OSRAM OS.

[1] A critical component is a component usedin a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or effectiveness of that device or system.

[2] Life support devices or systems are intended (a) to be implanted in the human body, or (b) to support and/or maintain and sustain human life. If they fail, it is reasonable to assume that the health of the user may be endangered.