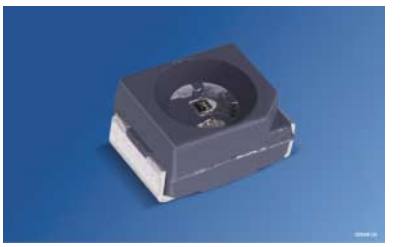
Rote Lumineszenzdiode
Red Emitter
Lead (Pb) Free Product - RoHS Compliant

SFH 4273



Wesentliche Merkmale

- Schwarz eingefärbtes TOPLED-Gehäuse
- Typische Emissionswellenlänge 660nm
- Verbesserte Abbildungseigenschaften durch Absorption der Seitenstrahlung
- Größe der Leuchtquelle 325 µm x 325 µm
- IR Reflow und TTW Löten geeignet
- Feuchte-Empfindlichkeitsstufe 2 nach JEDEDC Standard J-STD-020A

Anwendungen

- Miniaturlichtschranken und Lichtschranken über große Entfernungen
- Industrieelektronik
- „Messen/Steuern/Regeln“
- Sensorik
- Alarm- und Sicherungssysteme
- IR-Freiraumübertragung

Features

- Black colored TOPLED-package
- Typical peak wavelength 660nm
- Improved imaging characteristics due to absorption of side emission
- Size of emitting area 325µm x 325µm
- Suited for IR Reflow and TTW-soldering
- Moisture sensitivity level 2 according to JEDEDC Standard J-STD-020A

Applications

- Miniature and long distance photointerrupters
- Industrial electronics
- For drive and control circuits
- Sensor technology
- Alarm and safety equipment
- IR free air transmission

Typ **Type**	**Bestellnummer** **Ordering Code**	**Strahlstärkegruppierung**[1] (I_F = 50 mA, t_p = 20 ms) **Radiant Intensity Grouping**[1] I_e (mW/sr)
SFH 4273	Q65110A2523	> 0.63 (typ. 1.0)

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

Achtung: Es wird empfohlen, das Bauteil nicht bei extremer Luftfeuchtigkeit zu betreiben. Ist dies dennoch vorgesehen, setzen Sie sich bitte mit OSRAM OS in Verbindung

Attention: It is recommended not to operate the device under extreme humdity. If this is designated though, please contact OSRAM OS.

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
Sperrspannung Reverse voltage	V_R	3	V
Durchlassstrom Forward current	I_F	50	mA
Stoßstrom, τ = 10 µs, D = 0 Surge current	I_{FSM}	1	A
Verlustleistung Power dissipation	P_{tot}	125	mW
Wärmewiderstand Sperrschicht - Umgebung bei Montage auf FR4 Platine, Padgröße je 16 mm² Thermal resistance junction - ambient mounted on PC-board (FR4), padsize 16 mm² each	R_{thJA}	450	K/W
Wärmewiderstand Sperrschicht - Lötstelle bei Montage auf Metall-Block Thermal resistance junction - soldering point, mounted on metal block	R_{thJS}	≈ 200	K/W

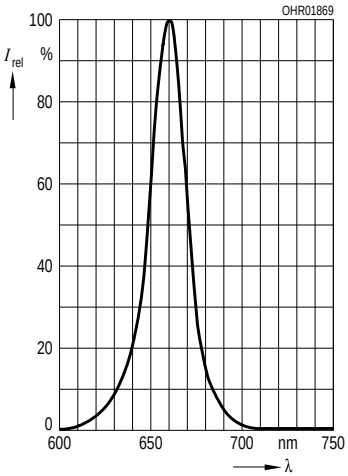
Kennwerte (T_A = 25 °C)
Characteristics

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 Half angle	φ	± 60	Grad deg.
Aktive Chipfläche Active chip area	A	0.106	mm^2
Abmessungen der aktiven Chipfläche Dimensions 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
Kapazität Capacitance V_R = 0 V, f = 1 MHz	C_o	30	pF
Durchlassspannung Forward voltage I_F = 50 mA, t_p = 20 ms	V_F	2.1 (≤ 2.8)	V
Sperrstrom, Reverse curr50mA50 mAent V_R = 5 V	I_R	0.01 (≤ 1)	µA
Gesamtstrahlungsfluss Total radiant flux I_F = 50 mA, t_p = 20 ms	Φ_e	5	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

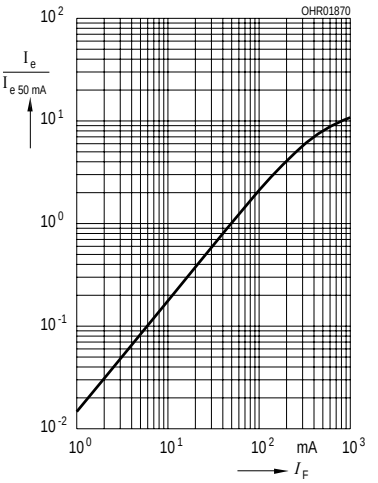
Strahlstärke I_e in Achsrichtung
gemessen bei einem Raumwinkel Ω = 0.01 sr
Radiant Intensity I_e in Axial Direction
at a solid angle of Ω = 0.01 sr

Bezeichnung **Parameter**	**Symbol**	**Werte** **Values**	**Einheit** **Unit**
Strahlstärke Radiant intensity I_F = 50 mA, t_p = 20 ms	I_e	> 0.63 (typ. 1.0)	mW/sr

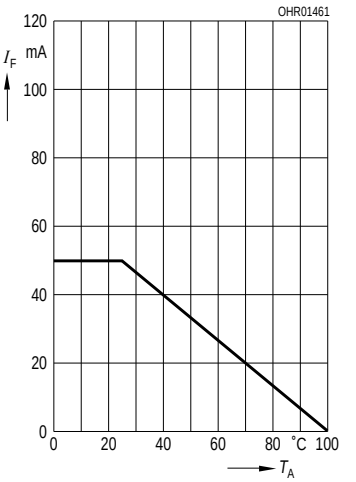
Relative Spectral Emission
$I_{rel} = f(\lambda)$



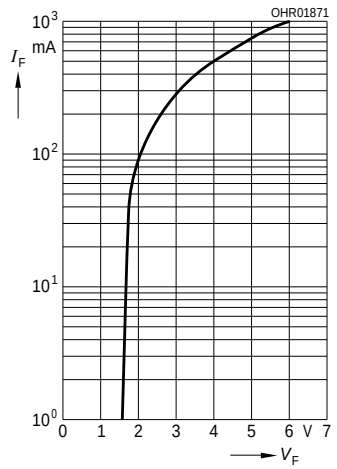
Radiant Intensity
$I_e/I_{e(50mA)} = f(I_F)$
Single pulse, t_p = 20 µs



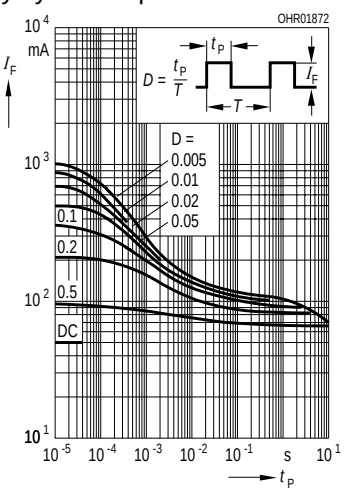
Max. Permissible Forward Current
$I_F = f(T_A)$



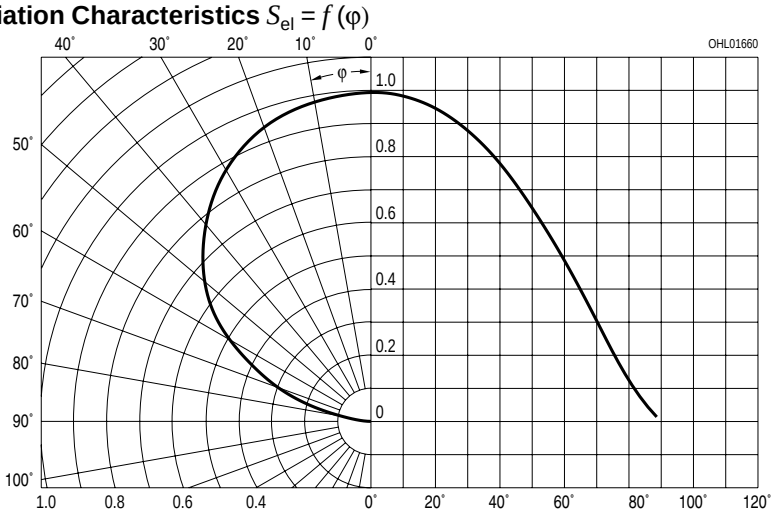
Forward Current
$I_F = f(V_F)$ single pulse, t_p = 20 µs



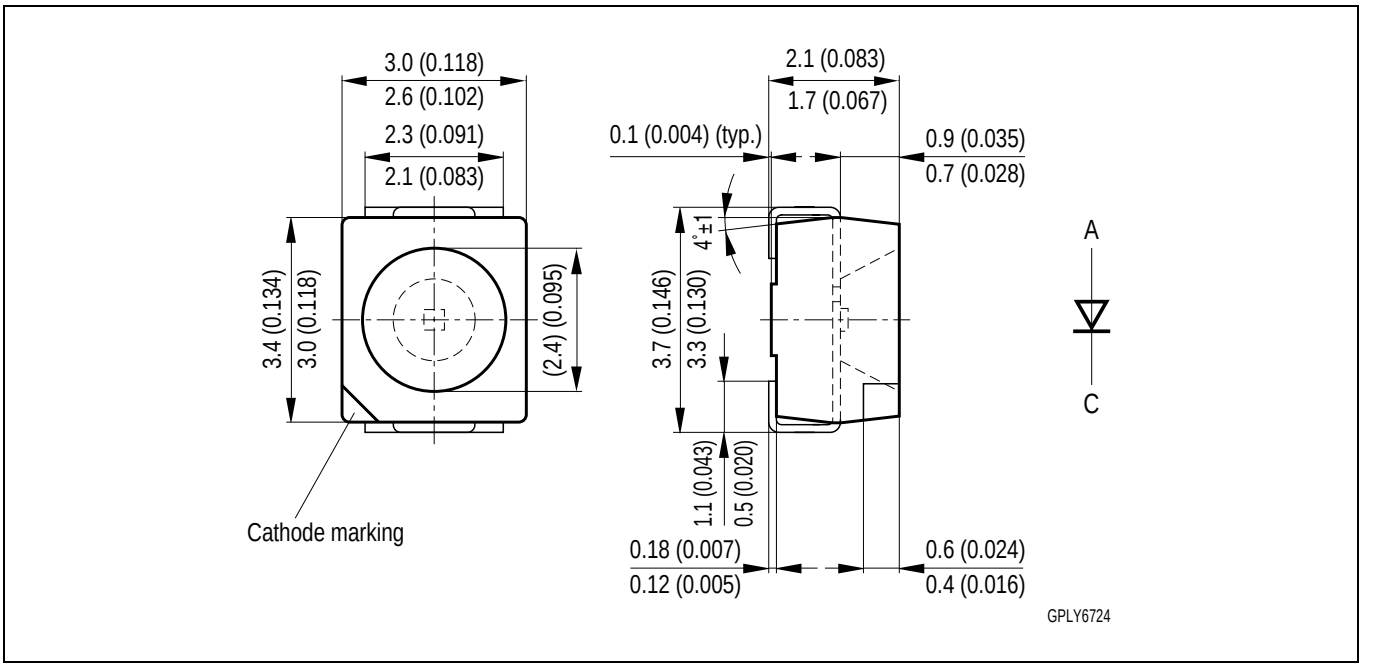
Permissible Pulse Handling Capability $I_F = f(t_p)$, T_A = 25 °C
duty cycle D = parameter



Radiation Characteristics $S_{el} = f(\varphi)$



Maßzeichnung
Package Outlines

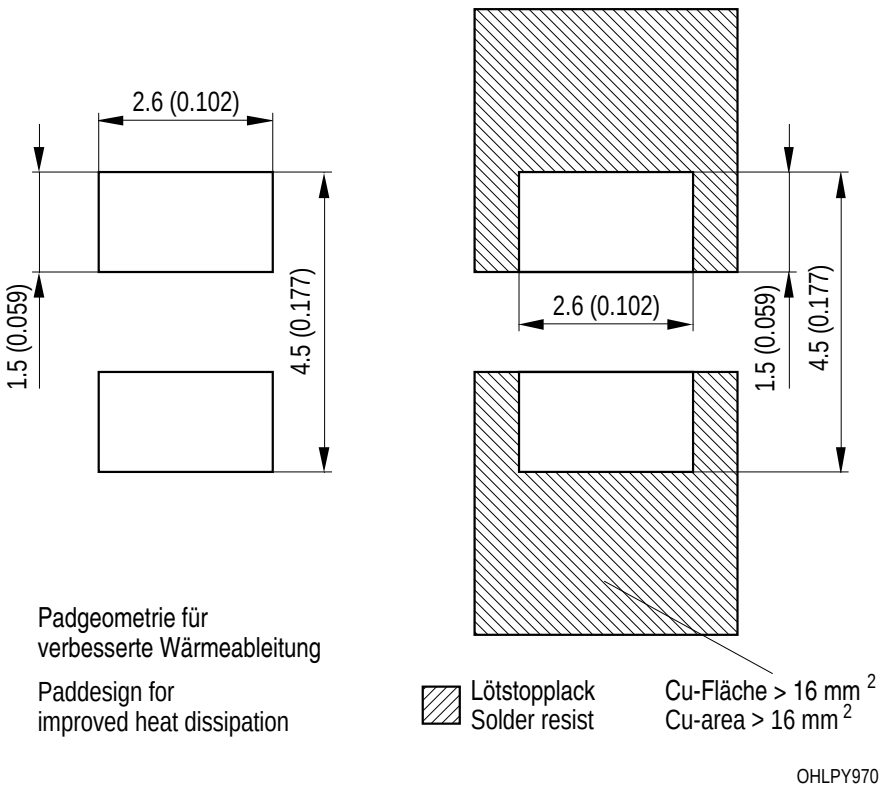


Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

Gehäuse / Package	TOPLED®, klarer Verguss / TOPLED®, clear resin
Anschlussbelegung Pin configuration	abgeschrägte Ecke: Kathode beveled edge: Cathode
Farbe Color	schwarz black
Brechungsindex Verguss Refractive index resin	1.53 1.53

Empfohlenes Lötpaddesign
Recommended Solder Pad

IR-Reflow Löten
IR Reflow Soldering

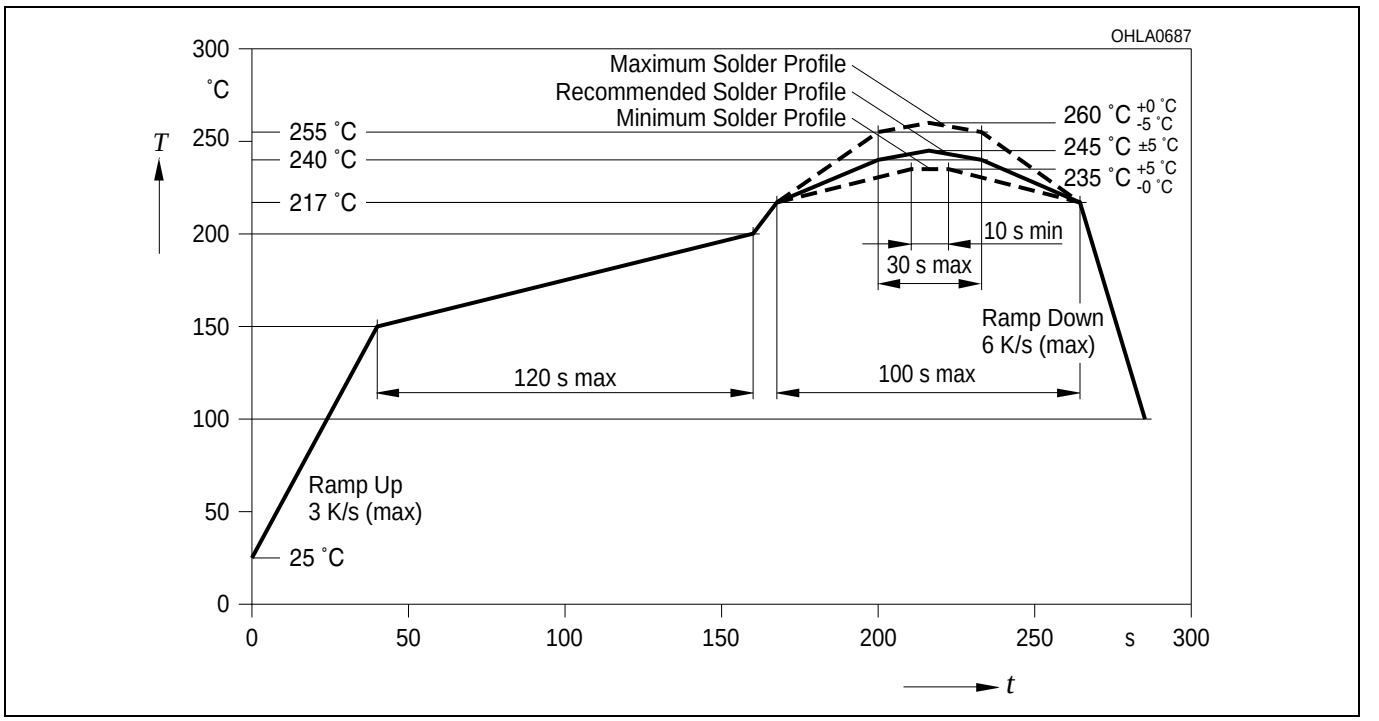


Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch)
Gehäuse für Wellenlöten (TTW) geeignet / Package suitable for TTW-soldering

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

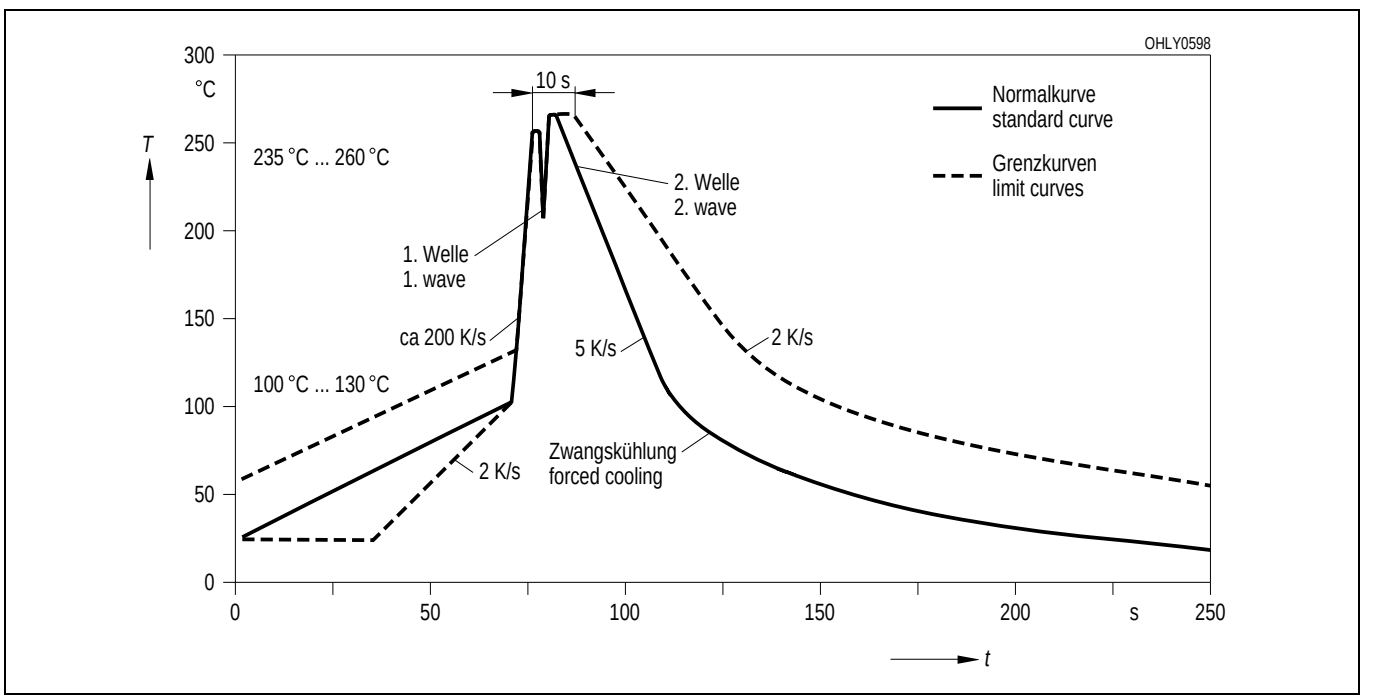
Lötbedingungen
Soldering Conditions
IR-Reflow Lötprofil für bleifreies Löten
IR Reflow Soldering Profile for lead free soldering

Vorbehandlung nach JEDEC Level 2
Preconditioning acc. to JEDEC Level 2
(nach J-STD-020B)
(acc. to J-STD-020B)



Wellenlöten (TTW)
TTW Soldering

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



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[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.