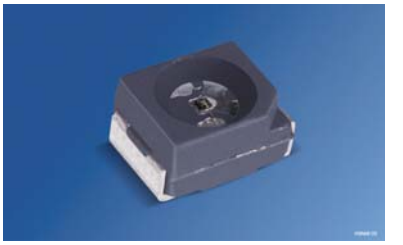
Rote Lumineszenzdiode
Red Emitter
Lead (Pb) Free Product - RoHS Compliant

SFH 4272



Wesentliche Merkmale

- Schwarz eingefärbtes TOPLED-Gehäuse
- Typische Emissionswellenlänge 645nm
- Verbesserte Abbildungseigenschaften durch Absorption der Seitenstrahlung
- Größe der Leuchtquelle 200µm x 200µm
- Feuchte-Empfindlichkeitsstufe 2 nach JEDEC Standard J-STD-020C

Features

- Black coloured TOPLED-package
- Typical Peakwavelength 645nm
- Improved imaging characteristics due to absorption of side emission
- Size of emitting area 200µm x 200µm
- Moisture sensitivity level 2 according to JEDEC Standard J-STD-020C

Anwendungen

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

Applications

- Miniature and long distance photointerrupters
- Industrial electronics
- For drive and control circuits
- Automotive technology
- Sensor technology
- Alarm and safety equipment

Typ **Type**	**Bestellnummer** **Ordering Code**	**Strahlstärkegruppierung**[1] (I_F = 20 mA, t_p = 20 ms) **Radiant Intensity Grouping**[1] I_e (mW/sr)
SFH 4272	Q65110A2522	> 0.16 (typ. 0.35)

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

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	5	V
Durchlassstrom Forward current	I_F	30	mA
Stoßstrom, τ = 10 µs, D = 0 Surge current	I_{FSM}	1	A
Verlustleistung Power dissipation	P_{tot}	80	mW
Wärmewiderstand Sperrschicht - Umgebung bei Montage auf FR4 Platine, Padgröße je 16 mm^2 Thermal resistance junction - ambient mounted on PC-board (FR4), padsize 16 mm^2 each	R_{thJA}	500	K/W
Wärmewiderstand Sperrschicht - Lötstelle bei Montage auf Metall-Block Thermal resistance junction - soldering point, mounted on metal block	R_{thJS}	280	K/W

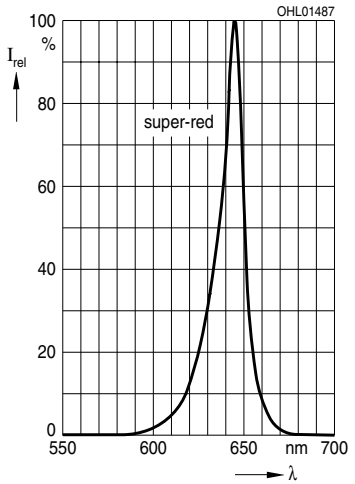
Kennwerte (T_A = 25 °C)
Characteristics

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der Strahlung Wavelength at peak emission I_F = 20 mA, t_p = 20 ms	λ_{peak}	645	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max} I_F = 20 mA	$\Delta\lambda$	16	nm
Abstrahlwinkel Half angle	φ	± 60	Grad deg.
Aktive Chipfläche Active chip area	A	0.04	mm^2
Abmessungen der aktiven Chipfläche Dimensions of the active chip area	$L \times B$ $L \times W$	0.2 × 0.2	mm^2
Durchlassspannung Forward voltage I_F = 20 mA, t_p = 20 ms	V_F	2.0 (≤ 2.5)	V
Sperrstrom Reverse current V_R = 5 V	I_R	0.01 (≤ 10)	µA
Gesamtstrahlungsfluss Total radiant flux I_F = 20 mA, t_p = 20 ms	Φ_e	1	mW
Temperaturkoeffizient von I_e bzw. Φ_e, I_F = 20 mA Temperature coefficient of I_e or Φ_e, I_F = 20 mA	TC_I	– 0.5	%/K
Temperaturkoeffizient von V_F, I_F = 20 mA Temperature coefficient of V_F, I_F = 20 mA	TC_V	– 2	mV/K
Temperaturkoeffizient von λ, I_F = 20 mA Temperature coefficient of λ, I_F = 20 mA	TC_λ	+ 0.14	nm/K

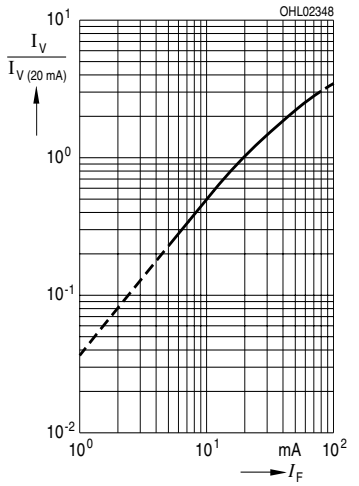
Strahlstärke I_e in Achsrichtung (gemessen bei einem Raumwinkel Ω = 0.01 sr)
Radiant Intensity I_e in Axial Direction (at a solid angle of Ω = 0.01 sr)

Bezeichnung Parameter	Symbol	Werte Values	Einheit Unit
Strahlstärke Radiant intensity I_F = 20 mA, t_p = 20 ms	I_e	> 0.16 (typ. 0.35)	mW/sr

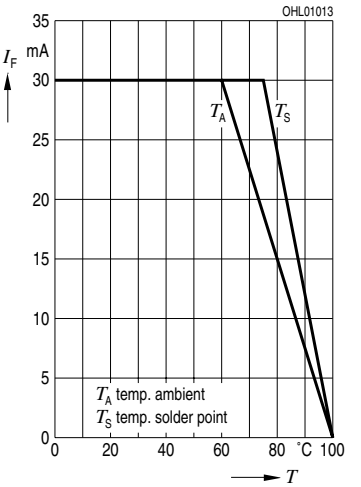
Relative Spectral Emission
$I_{rel} = f(\lambda)$



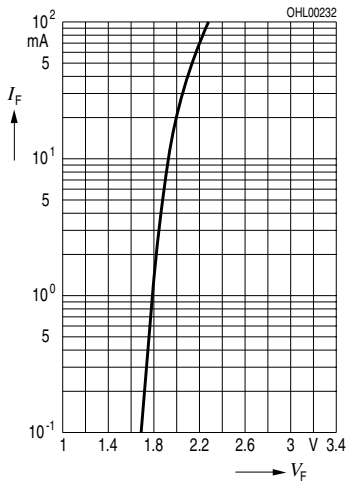
Radiant Intensity
$I_e/I_{e(20\ mA)} = f(I_F)$



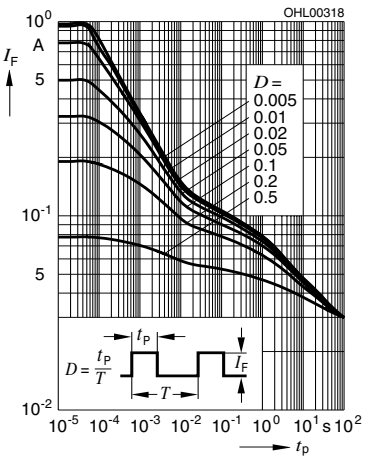
Max. Permissible Forward Current
$I_F = f(T_A)$



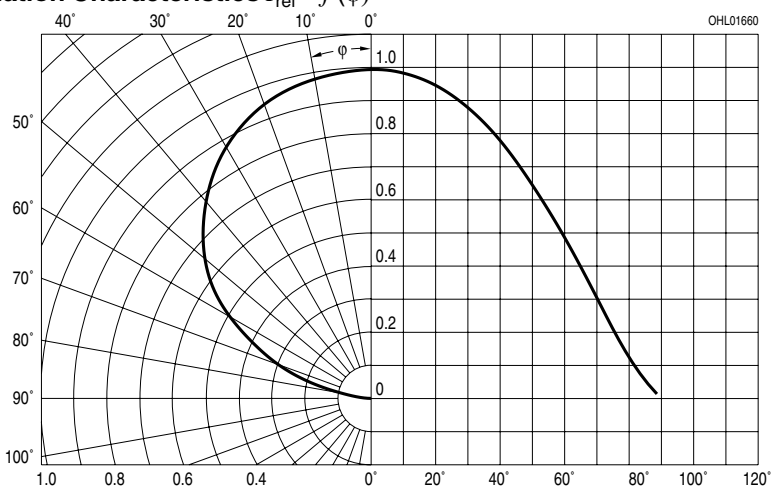
Forward Current
$I_F = f(V_F)$ single pulse, t_p = 20 µs



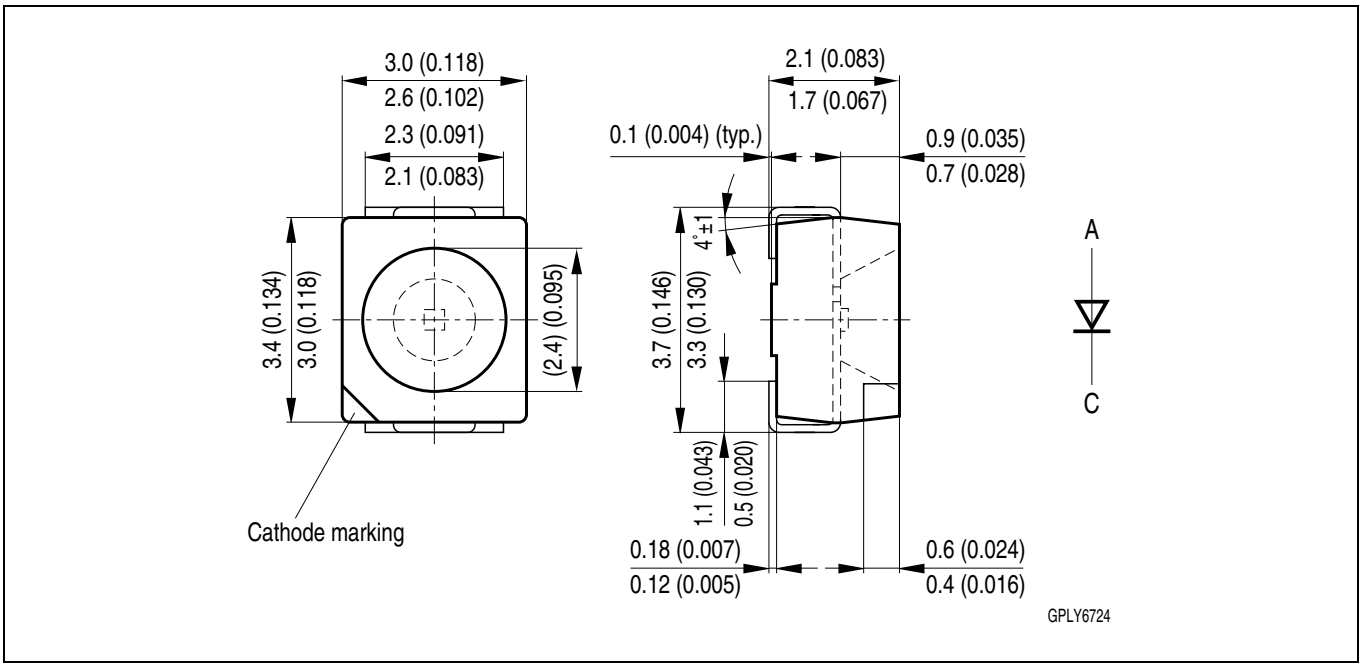
Permissible Pulse Handling Capability $I_F = f(t_p)$, T_A = 25 °C
duty cycle D = parameter



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



Maßzeichnung
Package Outlines

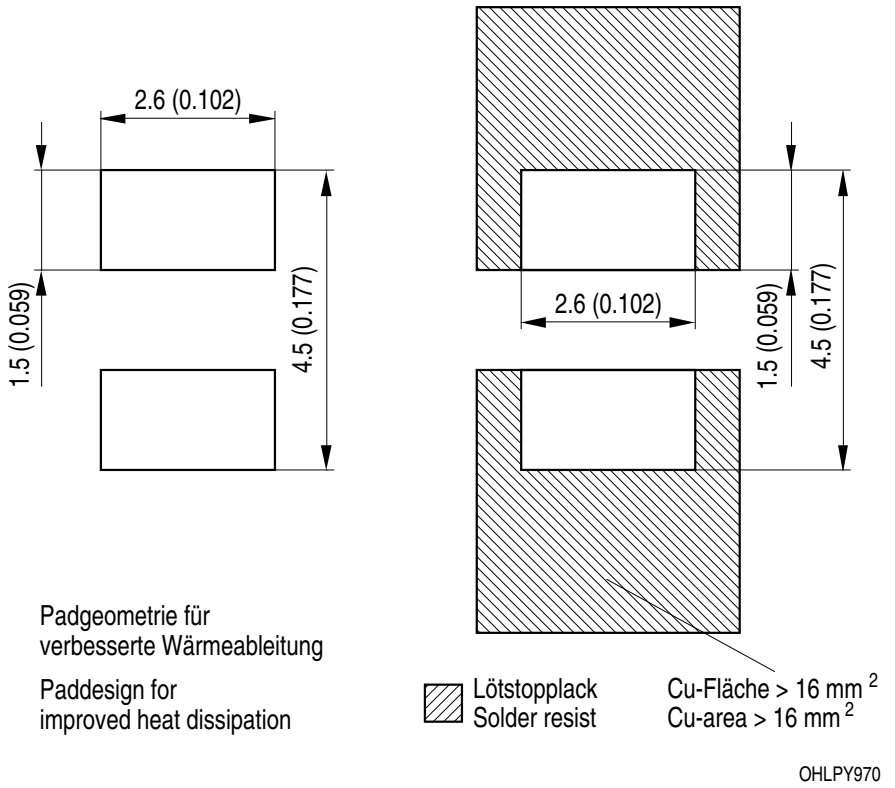


Maße in mm (inch) / Dimensions in mm (inch).

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

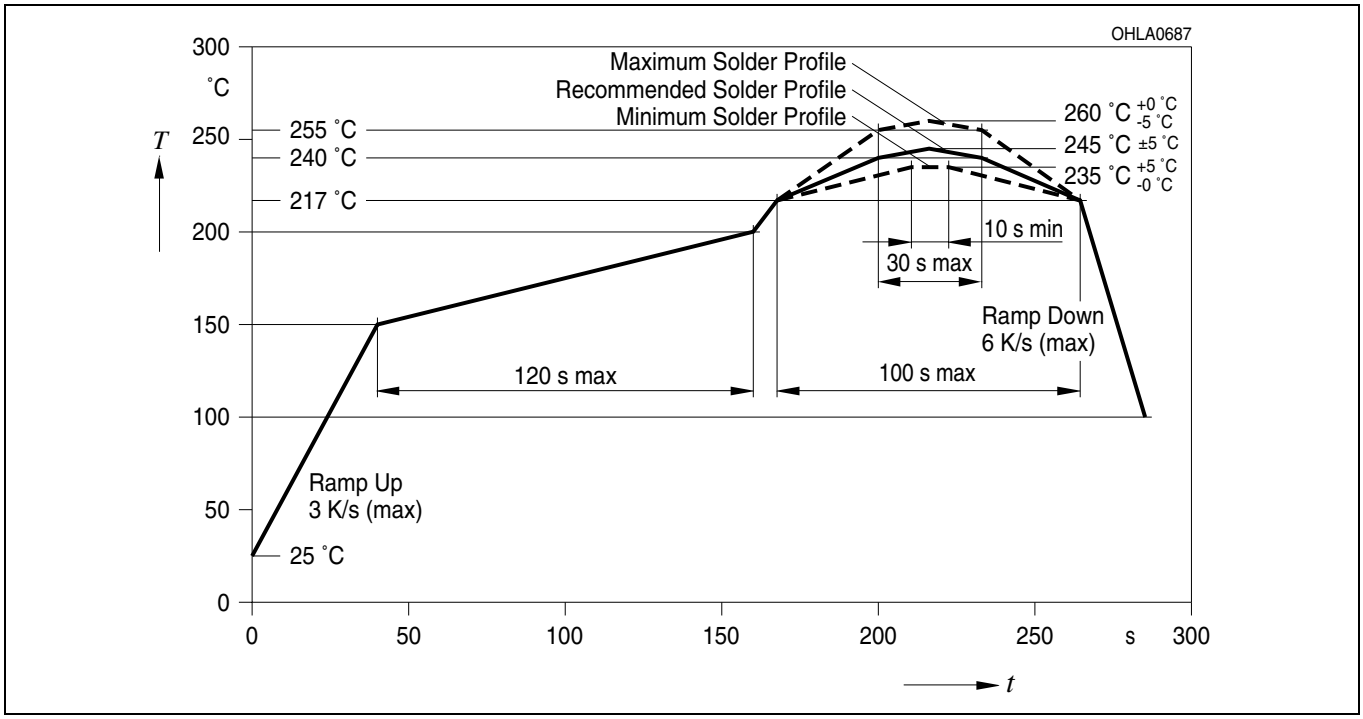
Reflow Löten
Reflow Soldering



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

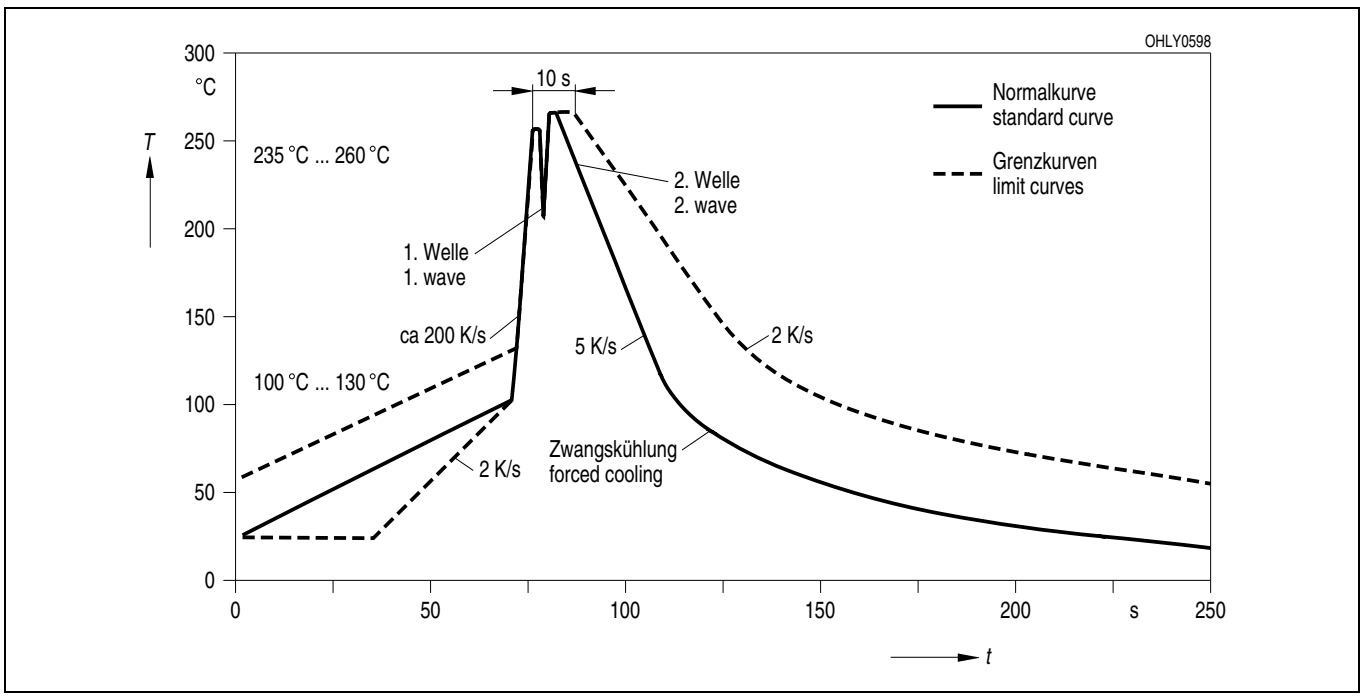
Lötbedingungen
Soldering Conditions
Reflow Lötprofil für bleifreies Löten
Reflow Soldering Profile for lead free soldering

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



Wellenlöten (TTW)
TTW Soldering

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



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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.

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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.