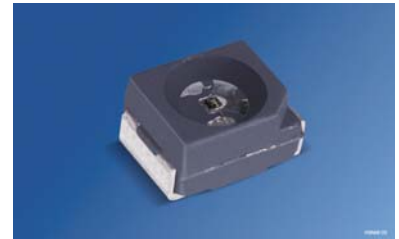


Rote Lumineszenzdiode
Red Emitter
Lead (Pb) Free Product - RoHS Compliant

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⁾ ($I_F = 20 \text{ mA}$, $t_p = 20 \text{ ms}$) Radiant Intensity Grouping ¹⁾ $I_e \text{ (mW/sr)}$
SFH 4272	Q65110A2522	> 0.16 (typ. 0.35)

¹⁾ gemessen bei einem Raumwinkel $\Omega = 0.01 \text{ sr}$ / measured at a solid angle of $\Omega = 0.01 \text{ sr}$

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
Sperrspannung Reverse voltage	V_R	5	V
Durchlassstrom Forward current	I_F	30	mA
Stoßstrom, $\tau = 10\text{ }\mu\text{s}$, $D = 0$ 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 ($T_A = 25\text{ °C}$)**Characteristics**

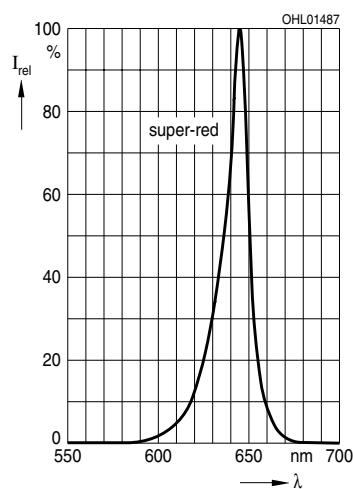
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der Strahlung Wavelength at peak emission $I_F = 20\text{ mA}$, $t_p = 20\text{ ms}$	λ_{peak}	645	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max} $I_F = 20\text{ mA}$	$\Delta\lambda$	16	nm
Abstrahlwinkel 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 $I_F = 20\text{ mA}$, $t_p = 20\text{ ms}$	V_F	$2.0 (\leq 2.5)$	V
Sperrstrom Reverse current $V_R = 5\text{ V}$	I_R	$0.01 (\leq 10)$	μA
Gesamtstrahlungsfluss Total radiant flux $I_F = 20\text{ mA}$, $t_p = 20\text{ ms}$	Φ_e	1	mW
Temperaturkoeffizient von I_e bzw. Φ_e , $I_F = 20\text{ mA}$ Temperature coefficient of I_e or Φ_e , $I_F = 20\text{ mA}$	TC_I	-0.5	%/K
Temperaturkoeffizient von V_F , $I_F = 20\text{ mA}$ Temperature coefficient of V_F , $I_F = 20\text{ mA}$	TC_V	-2	mV/K
Temperaturkoeffizient von λ , $I_F = 20\text{ mA}$ Temperature coefficient of λ , $I_F = 20\text{ mA}$	TC_λ	$+0.14$	nm/K

Strahlstärke I_e in Achsrichtung (gemessen bei einem Raumwinkel $\Omega = 0.01\text{ sr}$)**Radiant Intensity I_e in Axial Direction** (at a solid angle of $\Omega = 0.01\text{ sr}$)

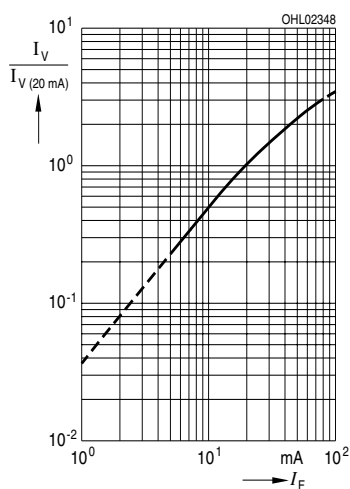
Bezeichnung Parameter	Symbol	Werte Values	Einheit Unit
Strahlstärke Radiant intensity $I_F = 20\text{ mA}$, $t_p = 20\text{ ms}$	I_e	> 0.16 (typ. 0.35)	mW/sr

Relative Spectral Emission

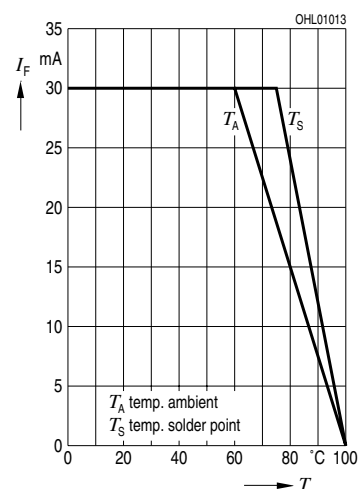
$$I_{\text{rel}} = f(\lambda)$$

**Radiant Intensity**

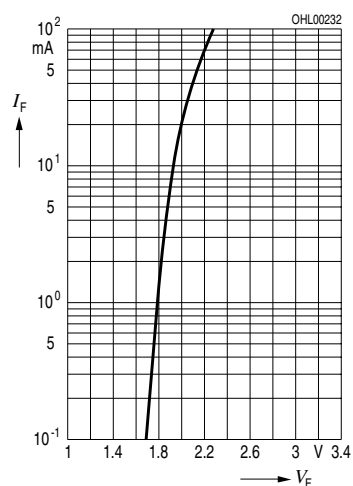
$$I_e/I_{e(20 \text{ mA})} = f(I_F)$$

**Max. Permissible Forward Current**

$$I_F = f(T_A)$$

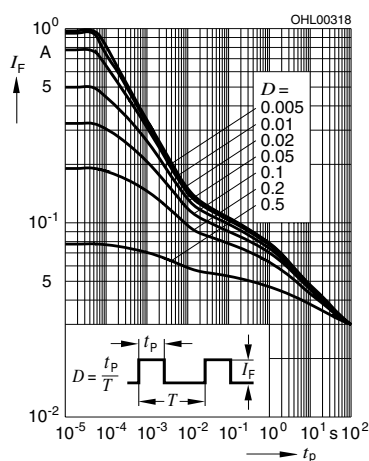
**Forward Current**

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

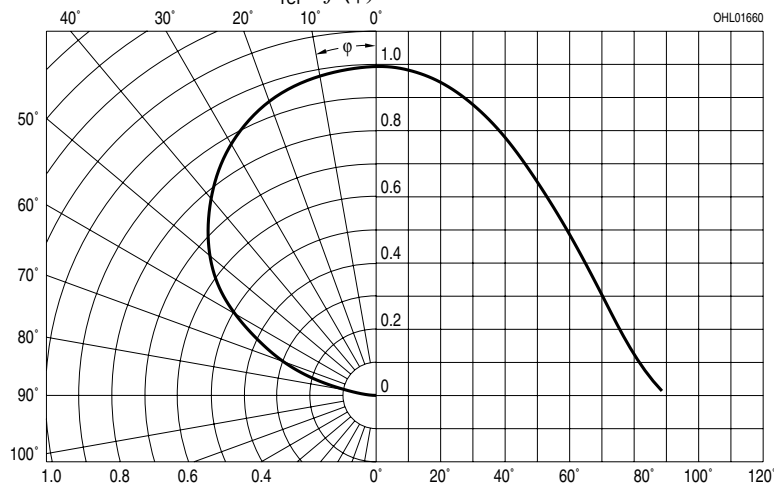
**Permissible Pulse Handling**

$$I_F = f(t_p), T_A = 25^\circ\text{C}$$

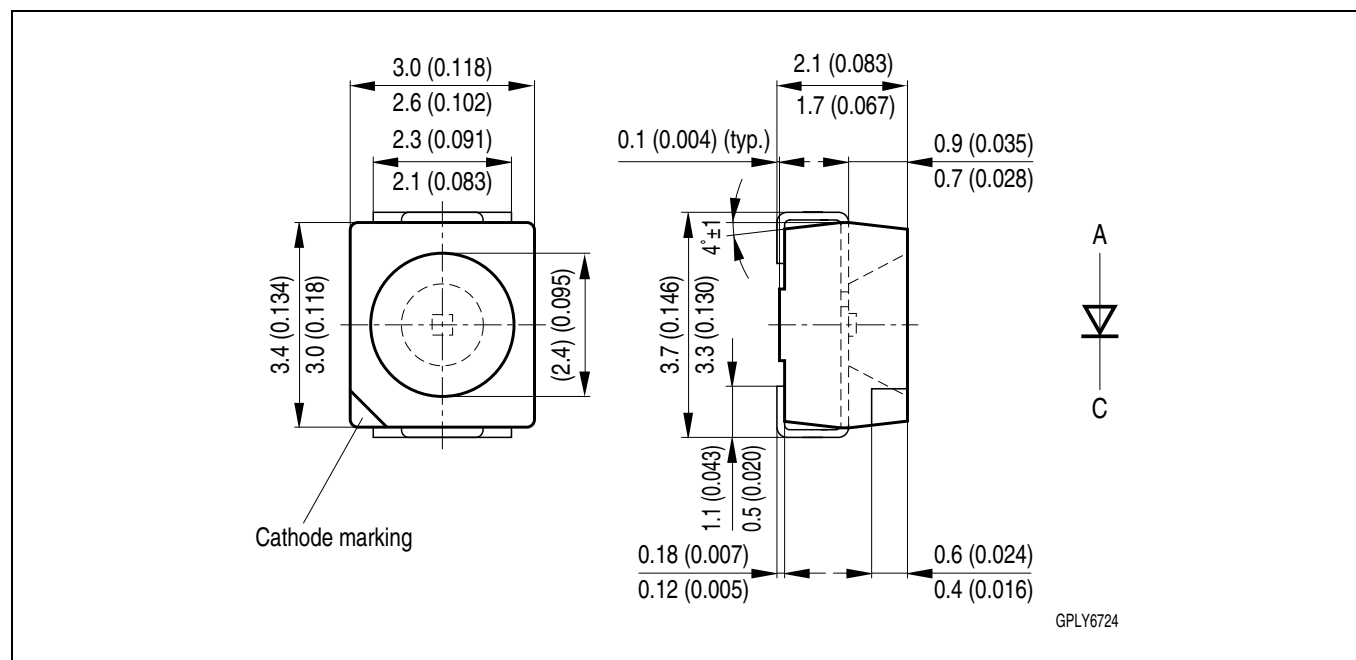
duty cycle D = parameter

**Radiation Characteristics**

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



Maßzeichnung Package Outlines

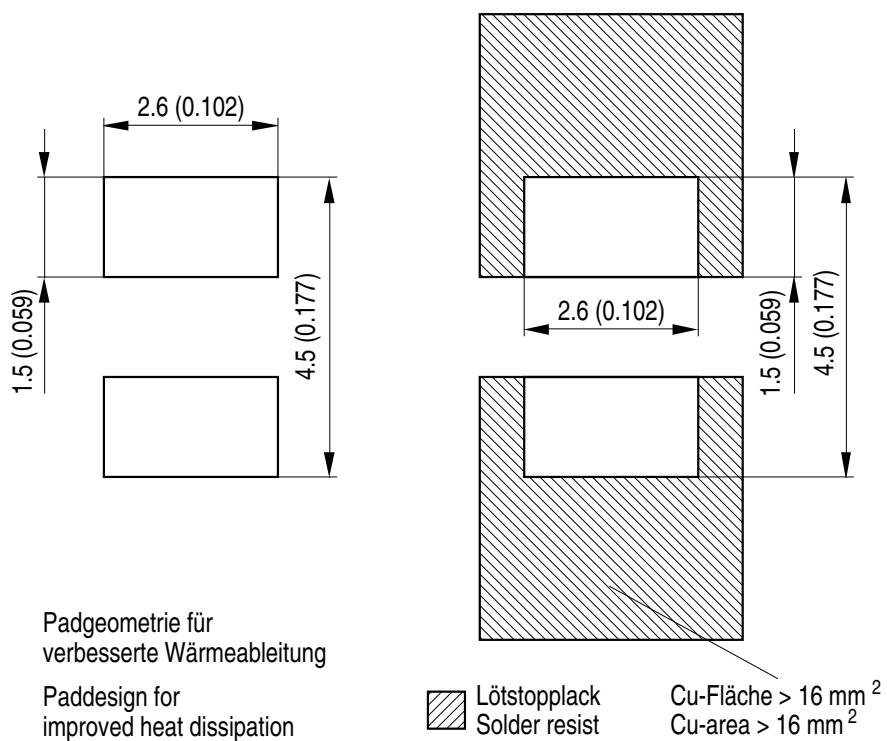


Maße in mm (inch) / Dimensions in mm (inch).

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



OHLPY970

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

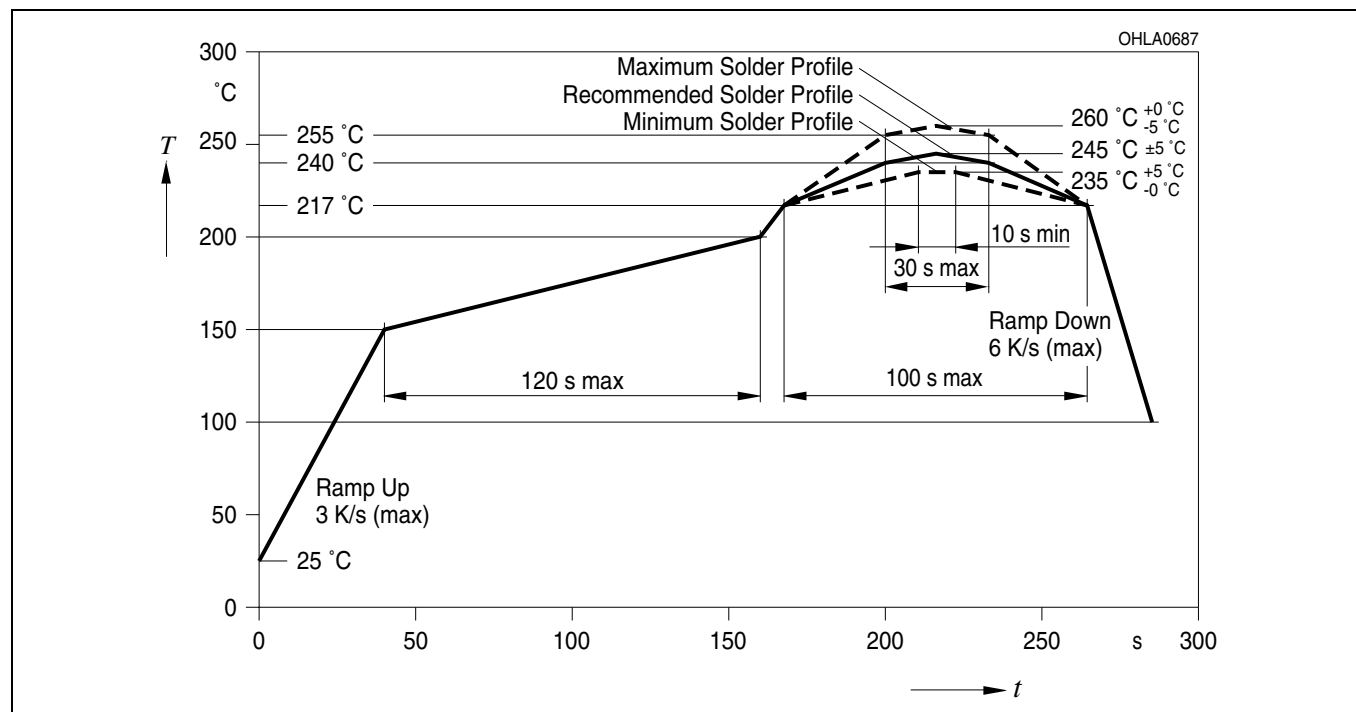
Lötbedingungen**Soldering Conditions****Reflow Lötprofil für bleifreies Löt****Reflow Soldering Profile for lead free soldering**

Vorbehandlung nach JEDEC Level 2

Preconditioning acc. to JEDEC Level 2

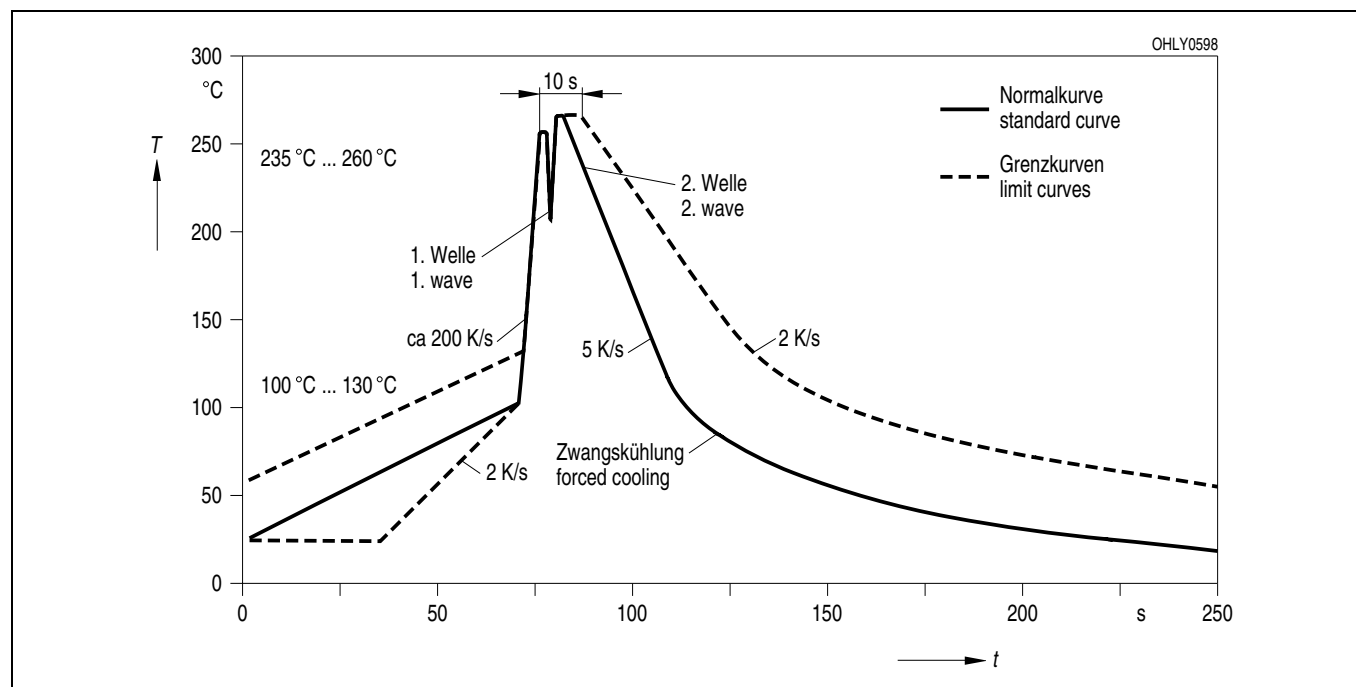
(nach J-STD-020C)

(acc. to J-STD-020C)

**Wellenlöt (TTW)****TTW Soldering**

(nach CECC 00802)

(acc. to CECC 00802)



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