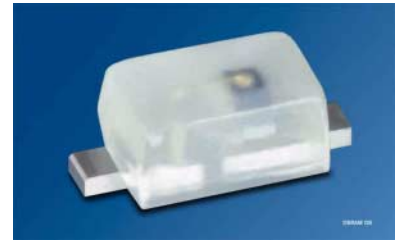


LG L890



Besondere Merkmale

- **Gehäusotyp:** SMT Gehäuse SCD 80
- **Besonderheit des Bauteils:** kleinste Bauform 1,7 mm x 0,8 mm x 0,65 mm (LxBxH)
- **Wellenlänge:** 570 nm
- **Abstrahlwinkel:** extrem breite Abstrahlcharakteristik (160°)
- **Technologie:** GaP
- **optischer Wirkungsgrad:** 2,5 lm/W
- **Gruppierungsparameter:** Lichtstärke
- **Verarbeitungsmethode:** für alle SMT-Bestücktechniken geeignet
- **Lötmethode:** IR Reflow Löten und Wellenlöten (TTW)
- **Vorbehandlung:** nach JEDEC Level 2
- **Gurtung:** 8 mm Gurt mit 5000/Rolle bzw. 10000/Rolle, ø180 mm

Anwendungen

- Informationsanzeigen im Innenbereich
- optischer Indikator
- Flache Hinterleuchtung (LCD, Mobile Phone, Schalter, Display)
- Spielsachen

Features

- **package:** SMT package SCD 80
- **feature of the device:** smallest package 1.7 mm x 0.8 mm x 0.65 mm (LxWxH)
- **wavelength:** 570 nm
- **viewing angle:** extremely wide (160°)
- **technology:** GaP
- **optical efficiency:** 2.5 lm/W
- **grouping parameter:** luminous intensity
- **assembly methods:** suitable for all SMT assembly methods
- **soldering methods:** IR reflow soldering and TTW soldering
- **preconditioning:** acc. to JEDEC Level 2
- **taping:** 8 mm tape with 5000/reel resp. 10000/reel, ø180 mm

Applications

- indoor displays
- optical indicators
- flat backlighting (LCD, cellular phones, switches, displays)
- toys

Typ Type	Emissions- farbe Color of Emission	Gehäusefarbe Color of Package	Lichtstärke Luminous Intensity $I_F = 20 \text{ mA}$ $I_V (\text{mcd})$	Lichtstrom Luminous Flux $I_F = 20 \text{ mA}$ $\Phi_V (\text{lm})$	Bestellnummer Ordering Code
LG L890-K1L1-1	green	colorless	7.1 ... 14.0	40 (typ.)	Q62703Q6022
LG L890-L1M2-1		diffused	11.2 ... 28.0	80 (typ.)	Q62703Q6156

Anm.: -1 gesamter Farbbereich (siehe **Seite 4**)

*Die Standardlieferform von Serientypen beinhaltet eine untere bzw. eine obere Familiengruppe, die aus nur 3 bzw. 4 Halbgruppen besteht. Einzelne Halbgruppen sind nicht erhältlich.
In einer Verpackungseinheit / Gurt ist immer nur eine Halbgruppe enthalten.*

Note: -1 Total color tolerance range (see **page 4**)

*The standard shipping format for serial types includes a lower or upper family group of 3 or 4 individual groups. Individual half groups are not available.
No packing unit / tape ever contains more than one luminous intensity half group.*

**Grenzwerte
Maximum Ratings**

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebstemperatur Operating temperature range	T_{op}	– 40 ... + 100	°C
Lagertemperatur Storage temperature range	T_{stg}	– 40 ... + 100	°C
Sperrschichttemperatur Junction temperature	T_j	+ 110	°C
Durchlassstrom Forward current	I_F	20	mA
Stoßstrom Surge current $t_p = 10 \mu s, D = 0.1$	I_{FM}	100	mA
Sperrspannung ¹⁾ Reverse voltage	V_R	12	V
Leistungsaufnahme Power consumption	P_{tot}	95	mW
Wärmewiderstand Thermal resistance Sperrschicht/Umgebung Junction/ambient Sperrschicht/Lötpad Junction/solder point Montage auf PC-Board FR 4 (Padgröße $\geq 5 \text{ mm}^2$) mounted on PC board FR 4 (pad size $\geq 5 \text{ mm}^2$)	$R_{th JA}$ $R_{th JS}$	500 290	K/W K/W

¹⁾ für kurzzeitigen Betrieb geeignet / suitable for short term application

Kennwerte ($T_A = 25\text{ °C}$)
Characteristics

Bezeichnung Parameter		Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge des emittierten Lichtes (typ.) Wavelength at peak emission $I_F = 20\text{ mA}$	(typ.)	λ_{peak}	572	nm
Dominantwellenlänge ¹⁾ Dominant wavelength ¹⁾ $I_F = 20\text{ mA}$	(typ.)	λ_{dom}	570 ± 6	nm
Spektrale Bandbreite (typ.) Spectral bandwidth $I_F = 20\text{ mA}$	(typ.)	$\Delta\lambda$	25	nm
Abstrahlwinkel bei 50 % I_V (Vollwinkel) Viewing angle at 50 % I_V	(typ.)	2ϕ	160	Grad deg.
Durchlassspannung ²⁾ Forward voltage ²⁾ $I_F = 20\text{ mA}$	(typ.) (max.)	V_F V_F	2.2 2.5	V V
Sperrstrom (typ.) Reverse current (max.) $V_R = 12\text{ V}$	(typ.) (max.)	I_R I_R	0.01 10	µA µA
Temperaturkoeffizient von λ_{peak} Temperature coefficient of λ_{peak} $I_F = 20\text{ mA}; -10\text{ °C} \leq T \leq 100\text{ °C}$	(typ.)	$TC_{\lambda_{\text{peak}}}$	0.11	nm/K
Temperaturkoeffizient von λ_{dom} Temperature coefficient of λ_{dom} $I_F = 20\text{ mA}; -10\text{ °C} \leq T \leq 100\text{ °C}$	(typ.)	$TC_{\lambda_{\text{dom}}}$	0.07	nm/K
Temperaturkoeffizient von V_F Temperature coefficient of V_F $I_F = 20\text{ mA}; -10\text{ °C} \leq T \leq 100\text{ °C}$	(typ.)	TC_V	– 1.4	mV/K
Optischer Wirkungsgrad (typ.) Optical efficiency $I_F = 20\text{ mA}$	(typ.)	η_{opt}	2.5	lm/W

¹⁾ Wellenlängen werden mit einer Stromeinprägungsdauer von 25 ms und einer Genauigkeit von ±1 nm ermittelt.
Wavelengths are tested at a current pulse duration of 25 ms and a tolerance of ±1 nm.

²⁾ Spannungswerte werden mit einer Stromeinprägungsdauer von 1 ms und einer Genauigkeit von ±0,1 V ermittelt.
Voltages are tested at a current pulse duration of 1 ms and a tolerance of ±0.1 V.

Helligkeits-Gruppierungsschema
Luminous Intensity Groups

Lichtgruppe Luminous Intensity Group	Lichtstärke Luminous Intensity I_v (mcd)	Lichtstrom Luminous Flux Φ_v (lm)
K1	7.1 ... 9.0	30 (typ.)
K2	9.0 ... 11.2	40 (typ.)
L1	11.2 ... 14.0	50 (typ.)
L2	14.0 ... 18.0	65 (typ.)
M1	18.0 ... 22.4	80 (typ.)
M2	22.4 ... 28.0	100(typ.)

Helligkeitswerte werden mit einer Stromeinprägedauer von 25 ms und einer Genauigkeit von $\pm 11\%$ ermittelt.
 Luminous intensity is tested at a current pulse duration of 25 ms and a tolerance of $\pm 11\%$.

Gruppenbezeichnung auf Etikett
Group Name on Label

Beispiel: K1
 Example: K1

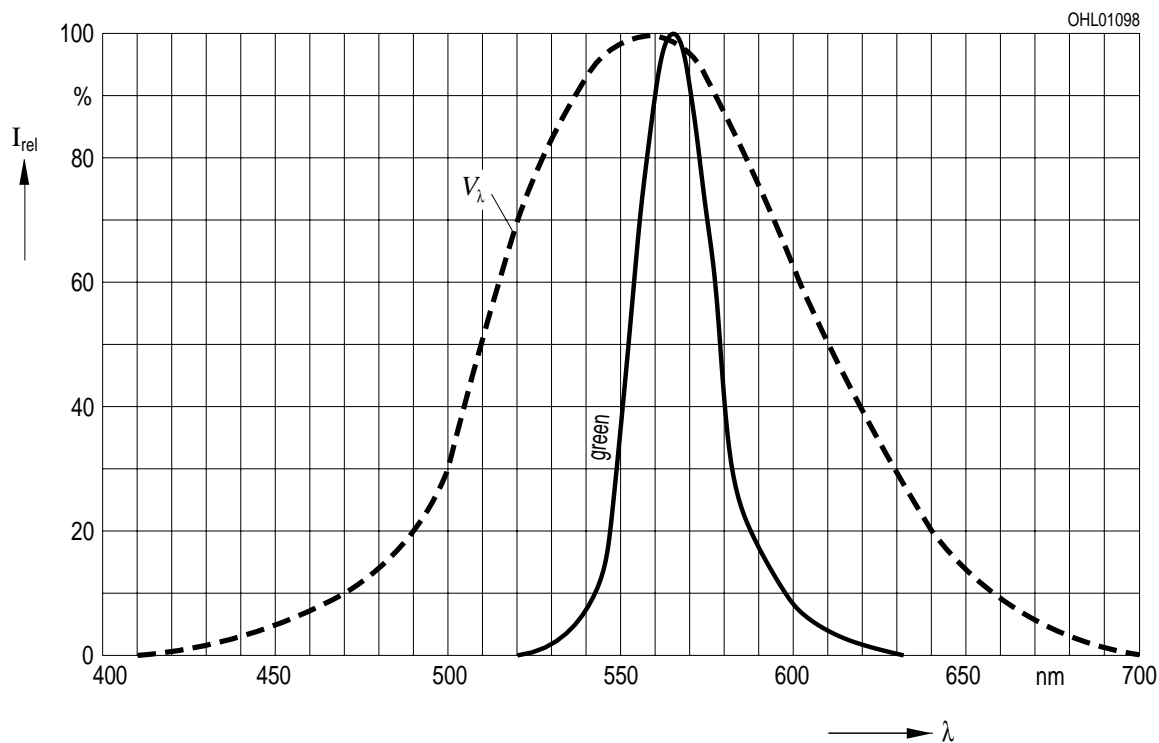
Lichtgruppe Luminous Intensity Group	Halbgruppe Half Group
K	1

Relative spektrale Emission $I_{\text{rel}} = f(\lambda)$, $T_A = 25^\circ\text{C}$, $I_F = 20\text{ mA}$

Relative Spectral Emission

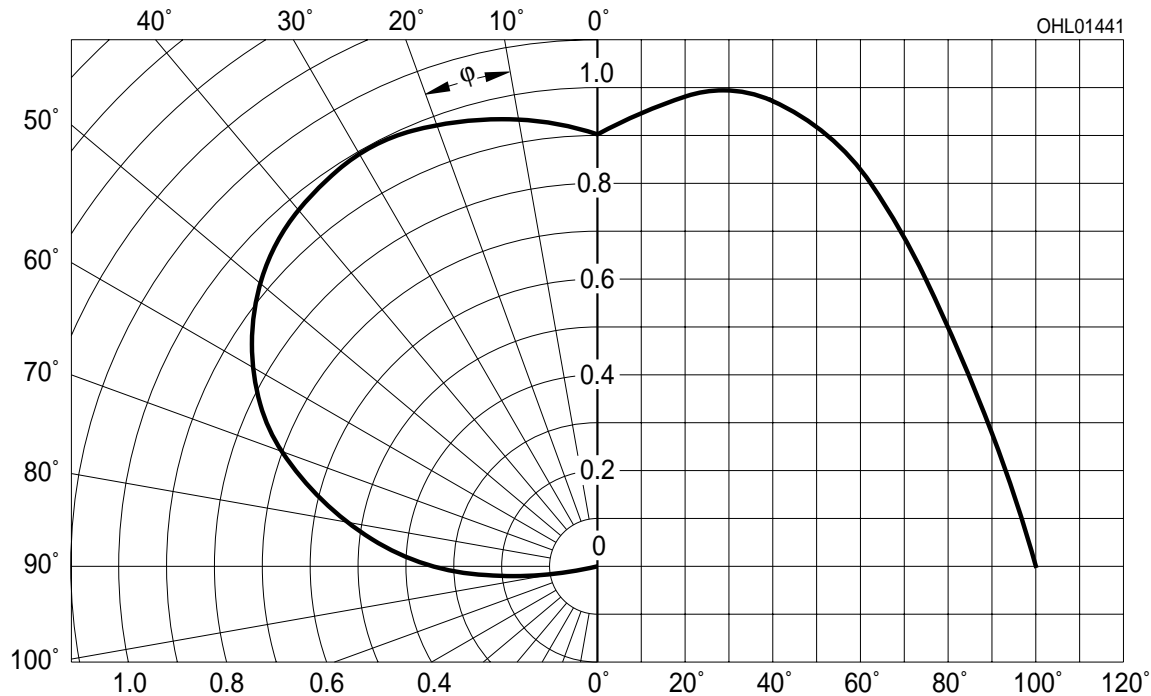
$V(\lambda)$ = spektrale Augenempfindlichkeit

Standard eye response curve



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

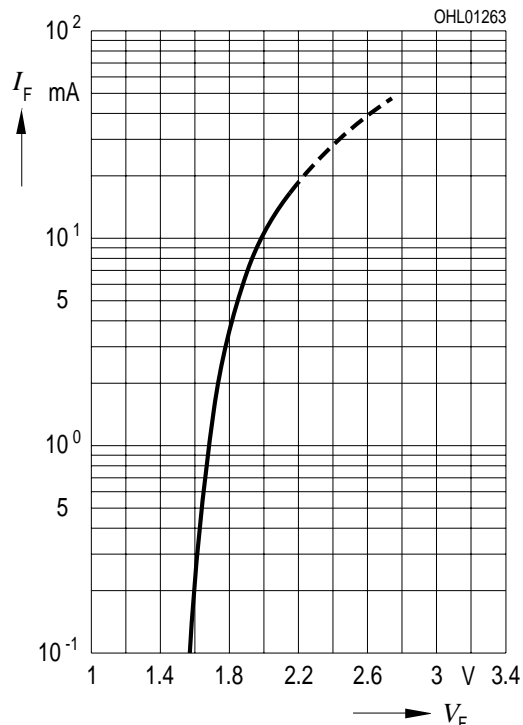
Radiation Characteristic



Durchlassstrom $I_F = f(V_F)$

Forward Current

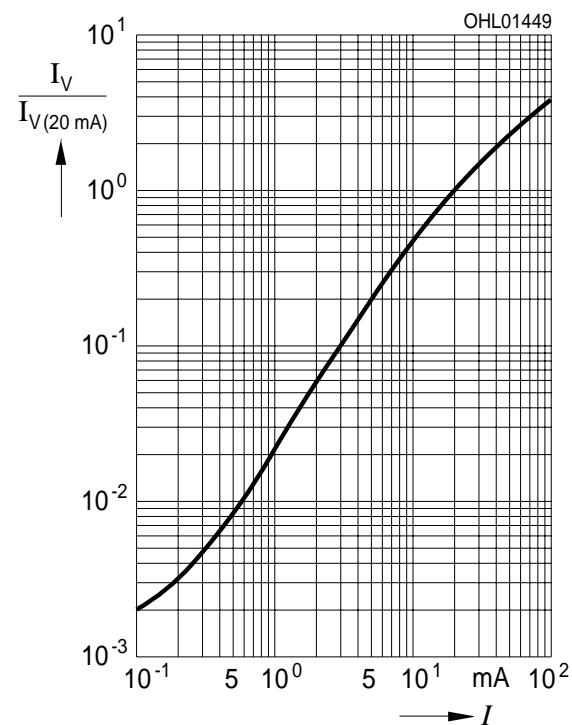
$T_A = 25\text{ °C}$



Relative Lichtstärke $I_V/I_{V(20\text{ mA})} = f(I_F)$

Relative Luminous Intensity

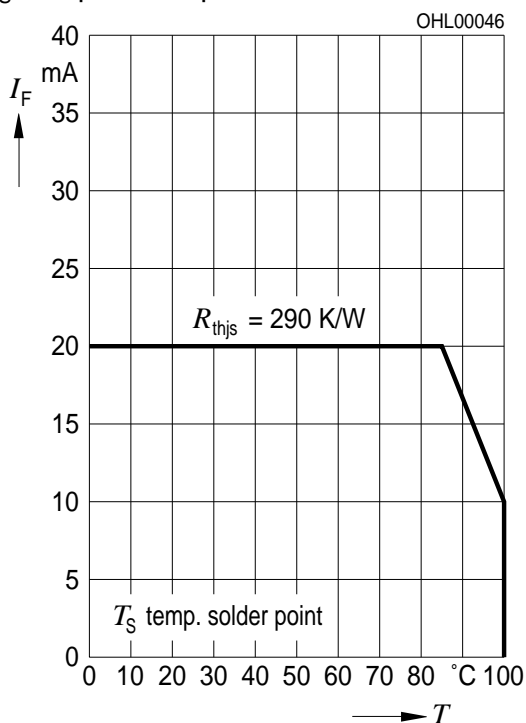
$T_A = 25\text{ °C}$



Maximal zulässiger Durchlassstrom $I_F = f(T_A)$

Max. Permissible Forward Current

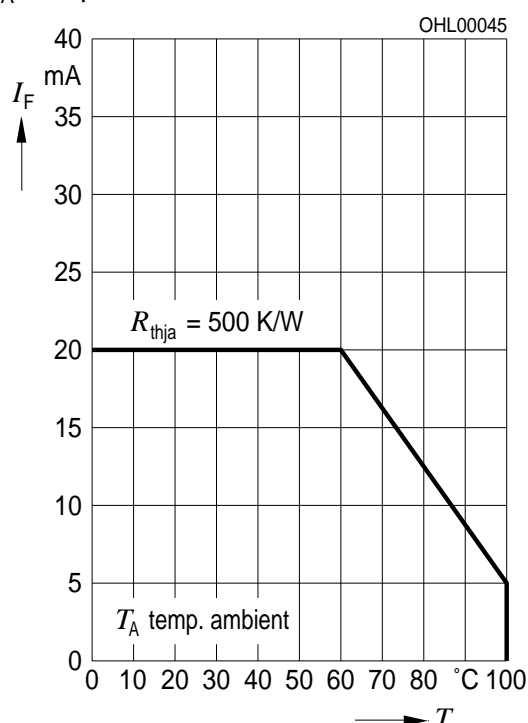
T_S : temp. solder point



Maximal zulässiger Durchlassstrom $I_F = f(T_A)$

Max. Permissible Forward Current

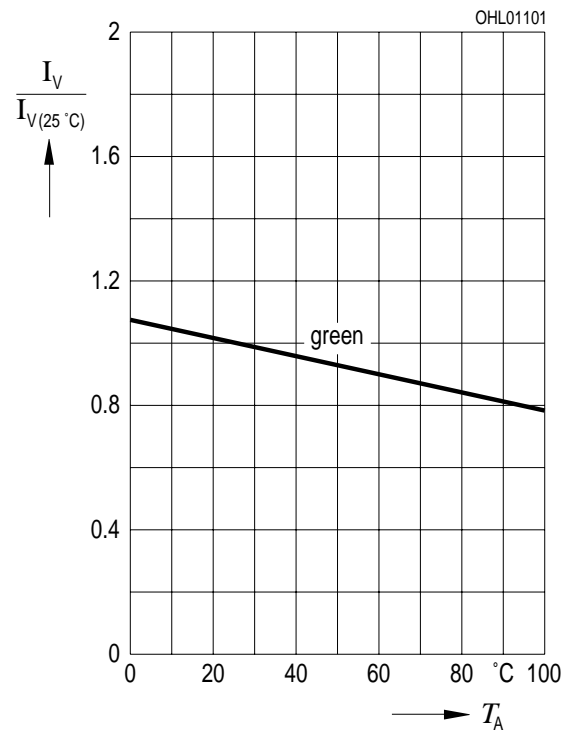
T_A : temp. ambient



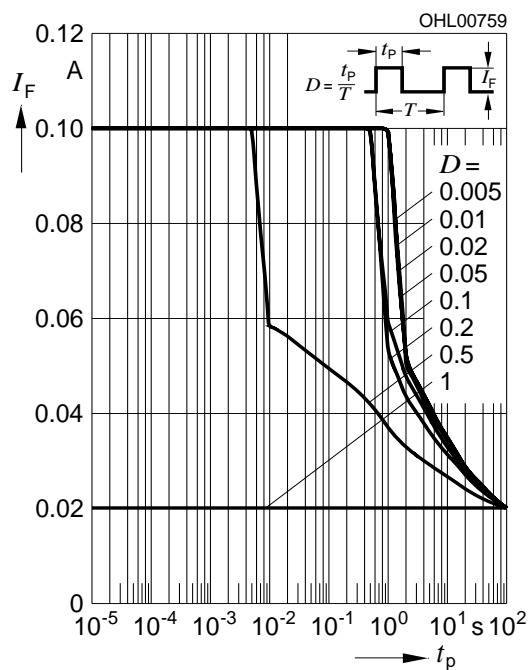
Relative Lichtstärke $I_V/I_{V(25\text{ °C})} = f(T_A)$

Relative Luminous Intensity

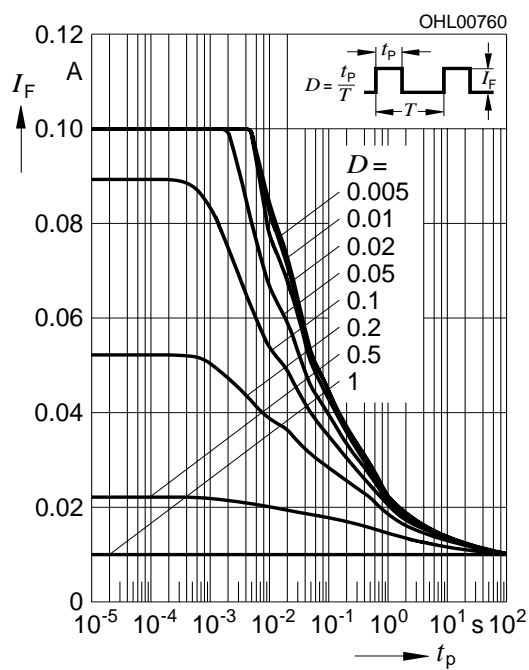
$I_F = 20\text{ mA}$



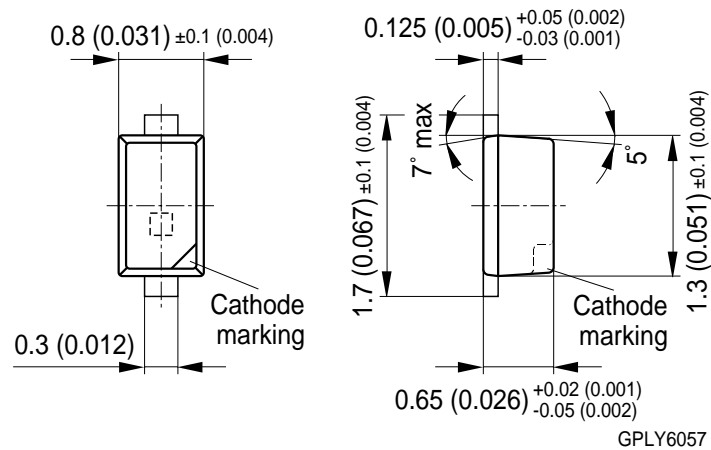
Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible Pulse Handling Capability
 Duty cycle $D = \text{parameter}$, $T_A = 25\text{ °C}$
LG



Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible Pulse Handling Capability
 Duty cycle $D = \text{parameter}$, $T_A = 85\text{ °C}$
LG



**Maßzeichnung
Package Outlines**

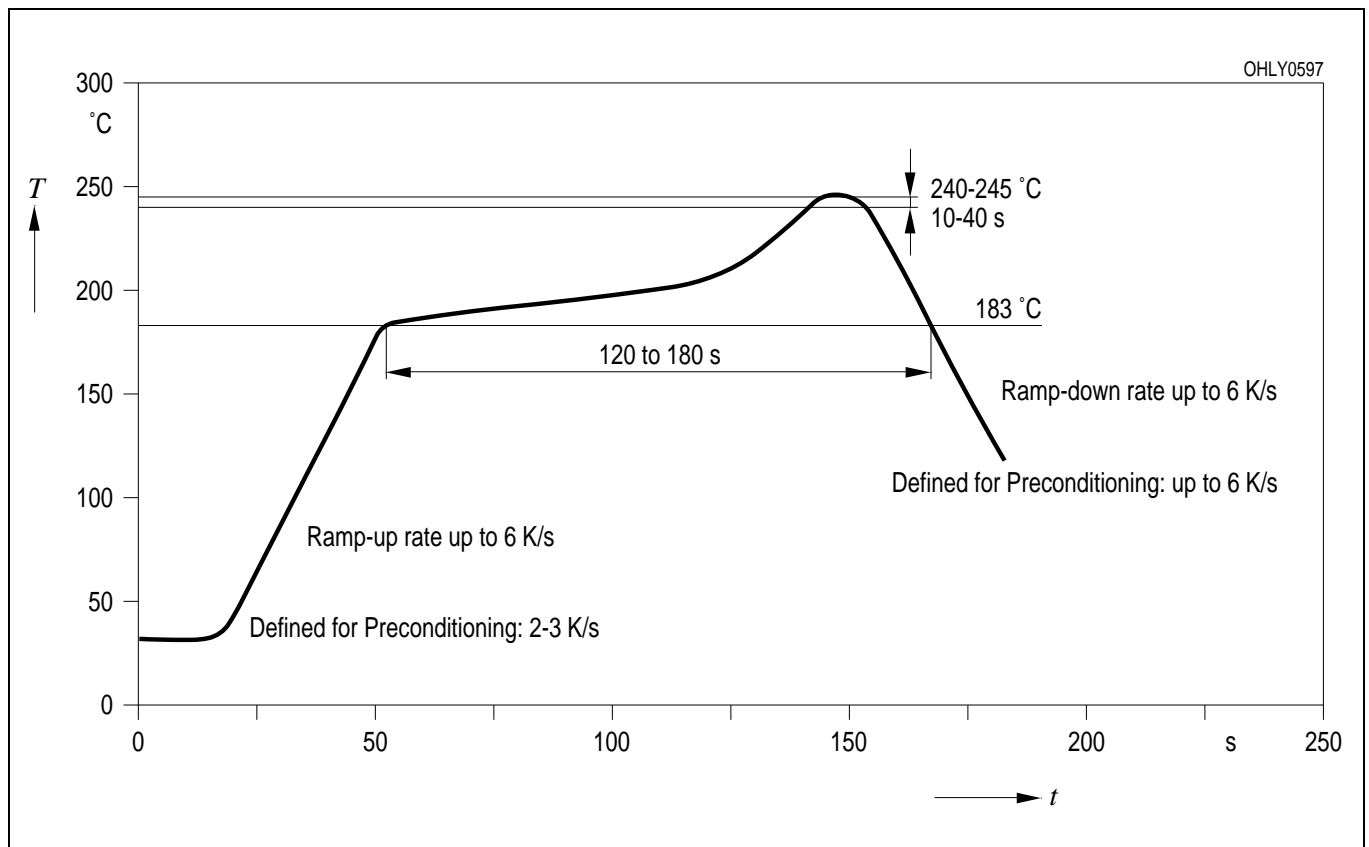


Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

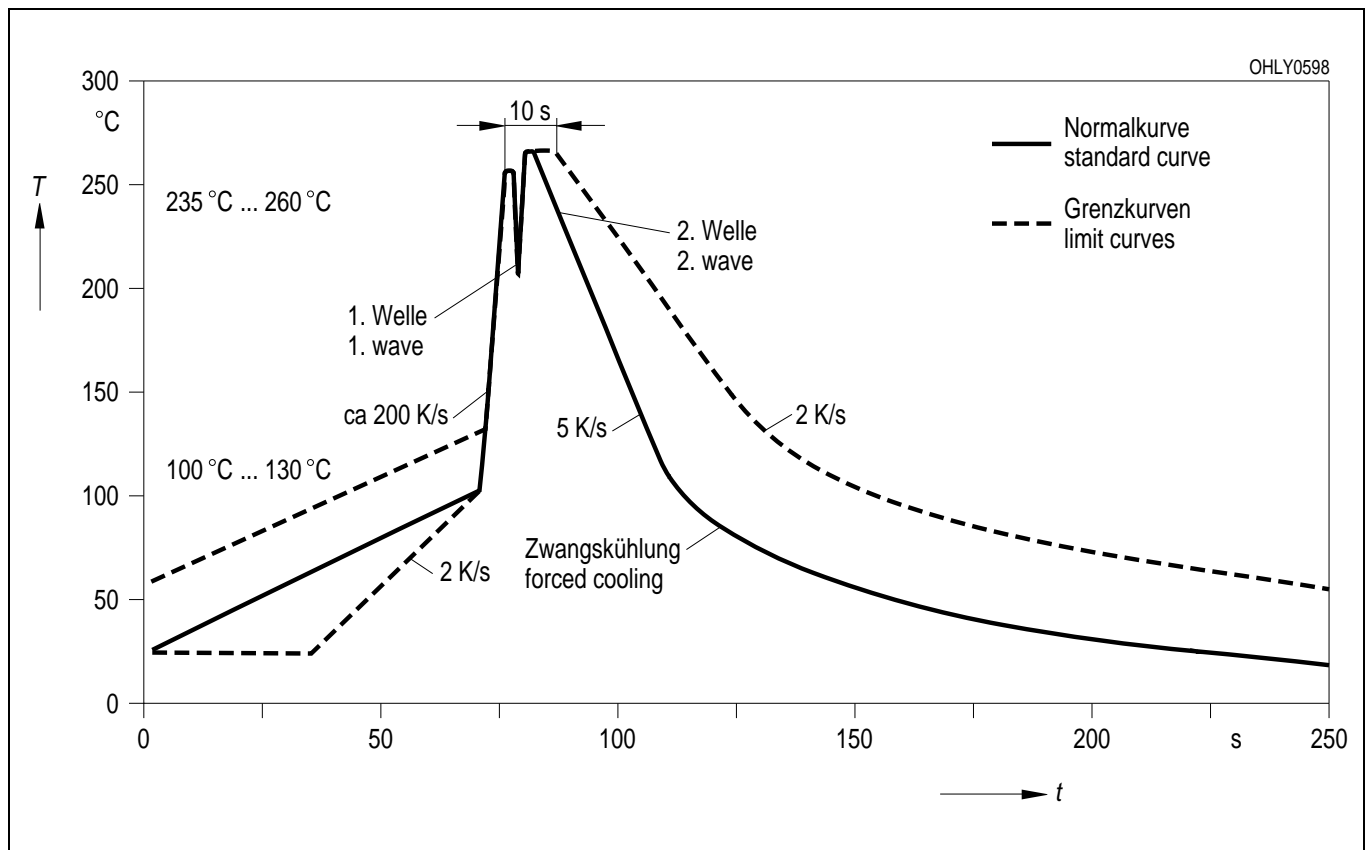
Gewicht / Approx. weight: 1.4 mg

Lötbedingungen Vorbehandlung nach JEDEC Level 2
Soldering Conditions Preconditioning acc. to JEDEC Level 2

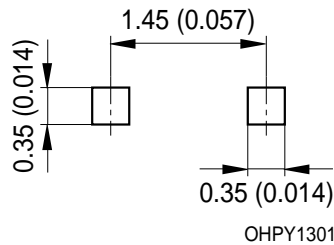
IR-Reflow Lötprofil (nach IPC 9501)
IR Reflow Soldering Profile (acc. to IPC 9501)



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

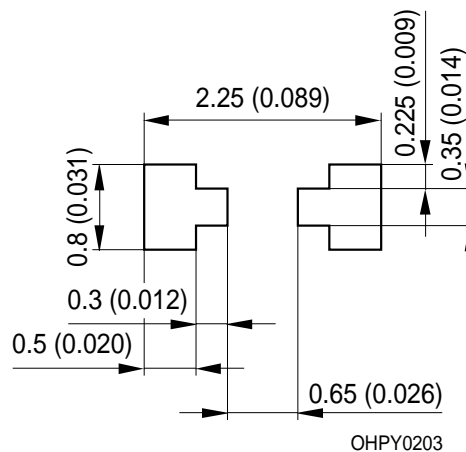


Empfohlenes Lötpaddesign IR Reflow Löten
Recommended Solder Pad IR Reflow Soldering



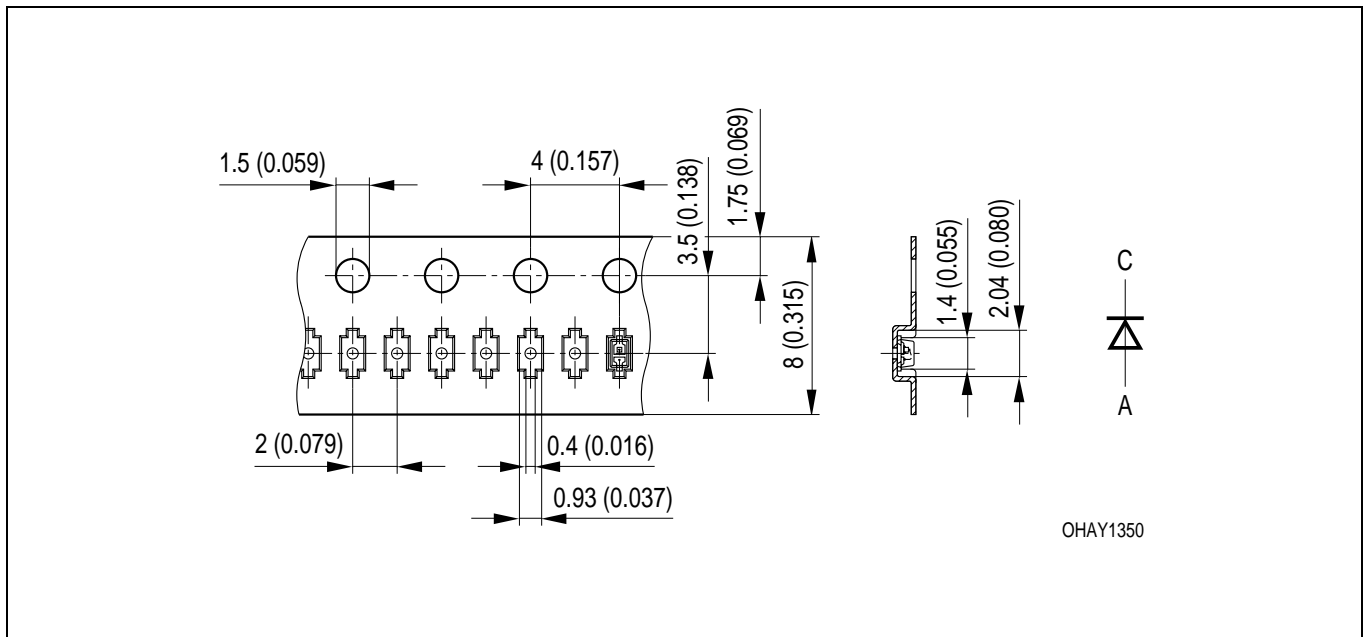
Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).
 Gehäuse hält TTW-Löthitze aus / Package able to withstand TTW-soldering heat

Empfohlenes Lötpaddesign verwendbar für SmartLED™ und Chipled - Bauform 0603
 IR Reflow Löten
Recommended Solder Pad useable for SmartLED™ and Chipled - Package 0603
 IR Reflow Soldering



Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).
 Empfohlene Lötpastendicke: 120 µm / recommended thickness of solder paste: 120 µm
 Gehäuse für Wellenlöten (TTW) geeignet / Package suitable for TTW-soldering

Gurtung / Polarität und Lage
Method of Taping / Polarity and Orientation



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

Verpackungseinheit:

- 8 mm Gurt mit 5000/Rolle, ø180 mm
- 8 mm Gurt mit 10000/Rolle, ø180 mm (auf Anfrage)

Packing unit:

- 8 mm tape with 5000/reel, ø180 mm
- 8 mm tape with 10000/reel, ø180 mm (on request)

Revision History: 2002-12-10		Date of change
Previous Version: 2002-11-18		
Page	Subjects (major changes since last revision)	
2	changed resin from colorless clear to colorless diffused	
12	recommended solder pad	
9	Package Outlines	
3	pad size from 16 mm ² to 5 mm ²	
3	Surge current	
9	Permissible Pulse Handling Capability	
15	annotations	2002-07-23
3, 4	value (reverse voltage from 5 V to 12 V)	2002-09-18
1, 14	tape with 5000/reel and 10000/reel instead of 10000	2002-12-10

Published by OSRAM Opto Semiconductors GmbH

Wernerwerkstrasse 2, D-93049 Regensburg

© All Rights Reserved.

Attention please!

The information describes the type of component and shall not be considered as assured characteristics.

All typical data and graphs are basing on representative samples, but don't represent the production range. If requested, e.g. because of technical improvements, these typ. data will be changed without any further notice.

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.

If printed or downloaded, please find the latest version in the Internet.

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 used in 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 the 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.