3 mm (T1) LED, Non Diffused
Super-Bright LED

LS 3341, LY 3341, LG 3341, LP 3341

Besondere Merkmale

- **Gehäusetyp:** eingefärbtes, klares 3 mm (T1) Gehäuse
- **Besonderheit des Bauteils:** Lötspieße mit Aufsetzebene
- **Wellenlänge:** 628 nm (super-rot), 587 nm (gelb), 570 nm (grün), 560 nm (pure green)
- **Abstrahlwinkel:** 40°
- **Technologie:** GaAsP (super-rot, gelb, grün), GaP (pure green)
- **optischer Wirkungsgrad:** 1,5 lm/W (super-rot, gelb), 2,5 lm/W (grün), 0,6 lm/W (pure green)
- **Gruppierungsparameter:** Lichtstärke
- **Lötmethode:** Wellenlöten (TTW)
- **Verpackung:** Schüttgut, gegurtet lieferbar

Features

- **package:** colored, clear 3 mm (T1) package
- **feature of the device:** solder leads with stand-off
- **wavelength:** 628 nm (super-red), 587 nm (yellow), 570 nm (green), 560 nm (pure green)
- **viewing angle:** 40°
- **technology:** GaAsP (super-red, yellow, green), GaP (pure green)
- **optical efficiency:** 1.5 lm/W (super-red, yellow), 2.5 lm/W (green), 0.6 lm/W (pure green)
- **grouping parameter:** luminous intensity
- **soldering methods:** TTW soldering
- **packing:** bulk, available taped on reel

Anwendungen

- optischer Indikator
- Einkopplung in Lichtleiter
- Hinterleuchtung (LCD, Schalter, Tasten, Displays)
- Innenbeleuchtung im Automobilbereich (z.B. Instrumentenbeleuchtung, u.ä.)

Applications

- optical indicators
- coupling into light guides
- backlighting (LCD, switches, keys, displays)
- interior automotive lighting (e.g. dashboard backlighting, etc.)

Typ Type	Emissions-farbe Color of Emission	Gehäuse-farbe Color of Package	Lichtstärke Luminous Intensity I_F = 10 mA I_V (mcd)	Lichtstrom Luminous Flux I_F = 10 mA Φ_V (mlm)	Bestellnummer Ordering Code
LS 3341-LP	super-red	red clear	11.2 ... 71.0	35 (typ.)	Q62703Q3911
LS 3341-M			18.0 ... 28.0	20 (typ.)	Q62703Q2146
LS 3341-N			28.0 ... 45.0	30 (typ.)	Q62703Q2147
LS 3341-MQ			18.0 ... 112.0	55 (typ.)	Q62703Q2148
LY 3341-LP	yellow	yellow clear	11.2 ... 71.0	35 (typ.)	Q62703Q2152
LY 3341-N			28.0 ... 45.0	30 (typ.)	Q62703Q2398
LY 3341-P			45.0 ... 71.0	50 (typ.)	Q62703Q3234
LY 3341-MQ			18.0 ... 112.0	55 (typ.)	Q62703Q2149
LG 3341-KN	green	green clear	7.1 ... 45.0	25 (typ.)	Q62703Q2153
LG 3341-N			28.0 ... 45.0	30 (typ.)	Q62703Q3187
LG 3341-P			45.0 ... 71.0	45 (typ.)	Q62703Q4772
LG 3341-MQ			18.0 ... 112.0	60 (typ.)	Q62703Q2156
LP 3341-JM	pure green	green clear	4.5 ... 28.0	14 (typ.)	Q62703Q3815
LP 3341-L			11.2 ... 18.0	12 (typ.)	Q62703Q2986
LP 3341-M			18.0 ... 28.0	20 (typ.)	Q62703Q2919
LP 3341-KN			7.1 ... 45.0	22 (typ.)	Q62703Q2750

Anm.: Die Standardlieferform von Serientypen beinhaltet eine untere bzw. eine obere Familiengruppe oder mindestens zwei Einzelgruppen.
In einer Verpackungseinheit / Gurt ist immer nur eine Helligkeitsgruppe enthalten.
Die technologiebedingte Helligkeits-Streuung der heutigen LED-Herstellprozesse über einen längeren Fertigungszeitraum (Halbleitermaterial - Chipherstellung - Montageprozess) erlaubt keine Zusage einer einzelnen Helligkeitsgruppe. Daher müssen mindestens zwei Helligkeitsgruppen vorgesehen werden!

Note: The standard shipping format for serial types includes a lower or upper family group or at least two individual groups.
No packing unit / tape ever contains more than one luminous intensity group.
Luminosity variations caused by the technology used in current LED manufacturing processes over a protracted manufacturing period (semiconductor material - chip fabrication - assembly process) mean that it is not possible to assign LEDs to a single luminous intensity group. For this reason at least two luminous intensity groups must be provided!

Bezeichnung Parameter	Symbol Symbol	Werte Values		Einheit Unit
		LS, LY, LG	LP	
Betriebstemperatur Operating temperature range	T_{op}	– 55 … + 100		°C
Lagertemperatur Storage temperature range	T_{stg}	– 55 … + 100		°C
Sperrschichttemperatur Junction temperature	T_j	+ 100		°C
Durchlassstrom Forward current (T_A=25°C)	I_F	40	30	mA
Stoßstrom Surge current $t \leq 10$ µs, D = 0.005, T_A=25°C	I_{FM}	0.5		A
Sperrspannung[1)] Reverse voltage (T_A=25°C)	V_R	12		V
Leistungsaufnahme Power consumption (T_A=25°C)	P_{tot}	130	90	mW
Wärmewiderstand [2)] Thermal resistance Sperrschicht/Umgebung[3)] Junction/ambient[3)] Sperrschicht/Lötpad Junction/solder point Minimale Beinchenlänge Minimum lead length	 $R_{th\ JA}$ $R_{th\ JS}$	 400 180		 K/W K/W

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

[2)] R_{th} erhöht sich um 13 K/W pro mm Beinchenlänge.
Each additional 1 mm of lead length increases R_{th} by 13 K/W.

[3)] Montage auf PC-Board FR 4 (Padgröße ≥ 16 mm^2)
mounted on PC board FR 4 (pad size ≥ 16 mm^2)

Bezeichnung Parameter		Symbol Symbol	Werte Values				Einheit Unit
			LS	LY	LG	LP	
Wellenlänge des emittierten Lichtes Wavelength at peak emission I_F = 10 mA	(typ.)	λ_{peak}	635	586	572	557	nm
Dominantwellenlänge [1] Dominant wavelength I_F = 10 mA	(typ.)	λ_{dom}	628	587	570	560	nm
Spektrale Bandbreite bei 50 % $I_{rel\ max}$ Spectral bandwidth at 50 % $I_{rel\ max}$ I_F = 10 mA	(typ.)	$\Delta\lambda$	45	45	25	22	nm
Abstrahlwinkel bei 50 % I_V (Vollwinkel) Viewing angle at 50 % I_V	(typ.)	2φ	40	40	40	40	Grad deg.
Durchlassspannung [2] Forward voltage I_F = 10 mA	(typ.) (max.)	V_F V_F	2.0 2.5	2.0 2.5	2.0 2.5	2.0 2.5	V V
Sperrstrom Reverse current V_R = 12 V	(typ.) (max.)	I_R I_R	0.01 10	0.01 10	0.01 10	0.01 10	µA µA
Temperaturkoeffizient von λ_{peak} Temperature coefficient of λ_{peak} I_F = 10 mA; –10°C ≤ T ≤ 100°C	(typ.)	$TC_{\lambda peak}$	0.11	0.10	0.11	0.11	nm/K
Temperaturkoeffizient von λ_{dom} Temperature coefficient of λ_{dom} I_F = 10 mA; –10°C ≤ T ≤ 100°C	(typ.)	$TC_{\lambda dom}$	0.07	0.07	0.07	0.05	nm/K
Temperaturkoeffizient von V_F Temperature coefficient of V_F I_F = 10 mA; –10°C ≤ T ≤ 100°C	(typ.)	TC_V	– 1.9	– 1.9	– 1.4	– 2.1	mV/K
Optischer Wirkungsgrad Optical efficiency I_F = 10 mA	(typ.)	η_{opt}	1.5	1.5	2.5	0.6	lm/W

[1] Wellenlängen werden mit einer Stromeinprägedauer 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 Stromeinprägedauer 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

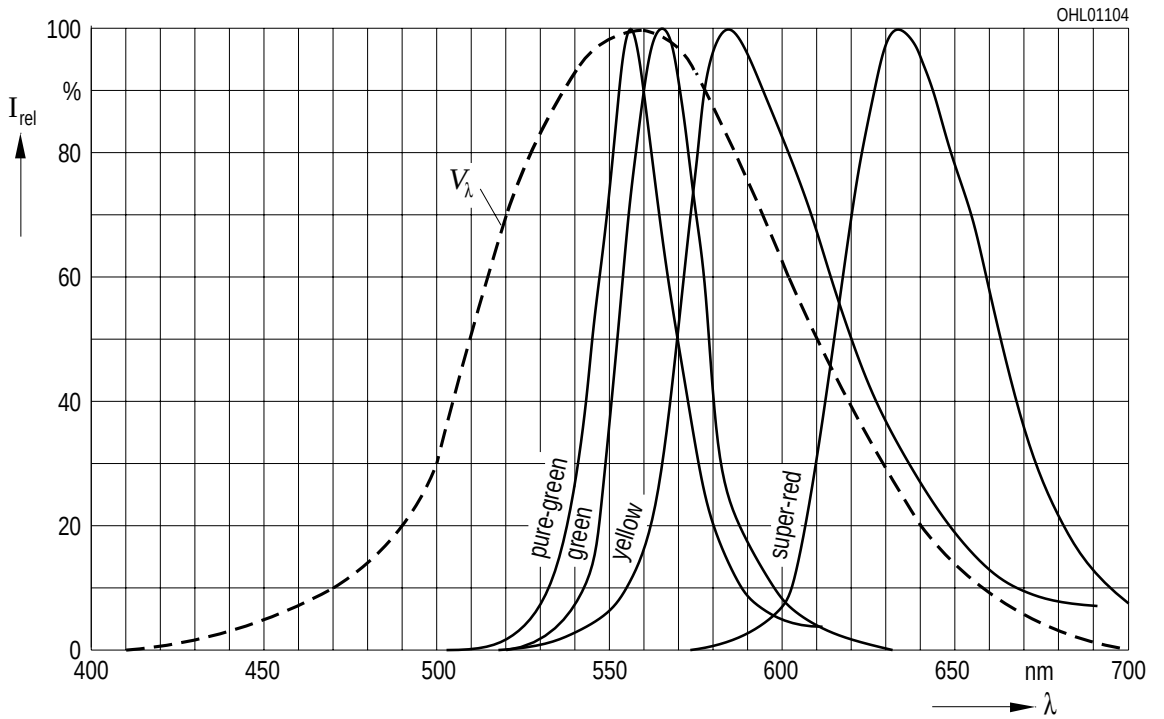
Lichtgruppe **Luminous Intensity Group**	**Lichtstärke** **Luminous Intensity** **I_V (mcd)**	**Lichtstrom** **Luminous Flux** **Φ_V (mlm)**
J	4.5 … 7.1	5 (typ.)
K	7.1 … 11.2	8 (typ.)
L	11.2 … 18.0	12 (typ.)
M	18.0 … 28.0	20 (typ.)
N	28.0 … 45.0	30 (typ.)
P	45.0 … 71.0	45 (typ.)
Q	71.0 … 112.0	80 (typ.)

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

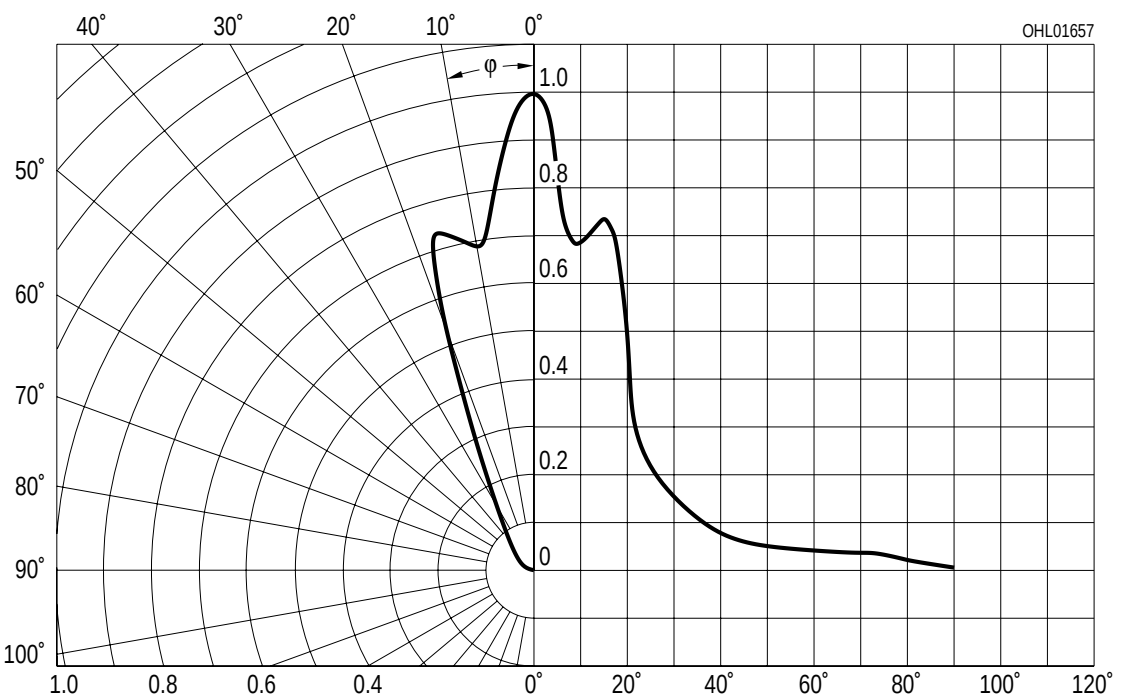
Gruppenbezeichnung auf Etikett
Group Name on Label
Beispiel: M
Example: M

Lichtgruppe **Luminous Intensity Group**
M

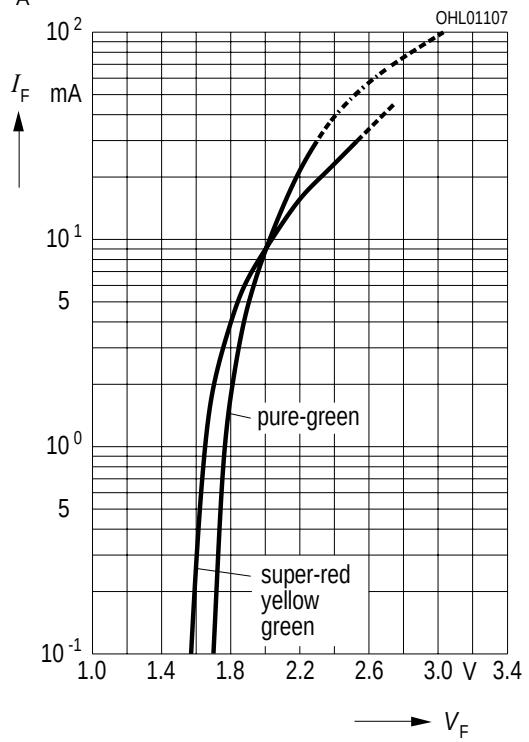
Relative spektrale Emission $I_{rel} = f(\lambda)$, T_A = 25 °C, I_F = 10 mA
Relative Spectral Emission
V(λ) = spektrale Augenempfindlichkeit
Standard eye response curve



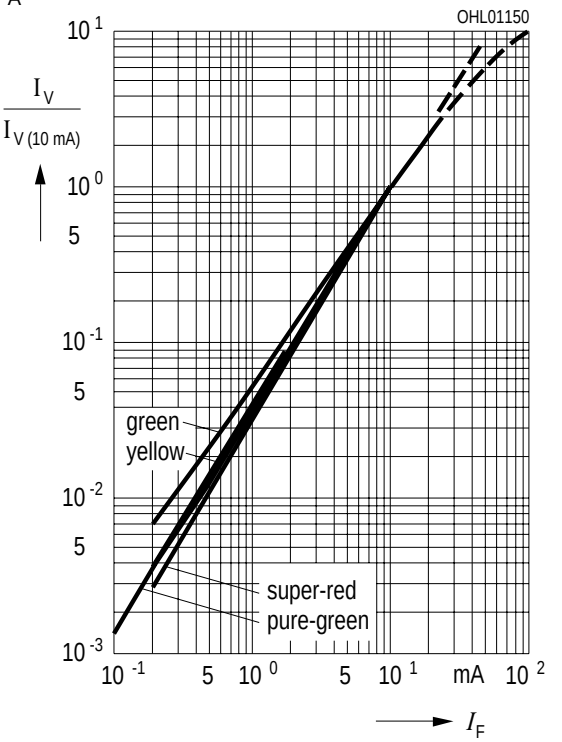
Abstrahlcharakteristik $I_{rel} = f(\varphi)$
Radiation Characteristic



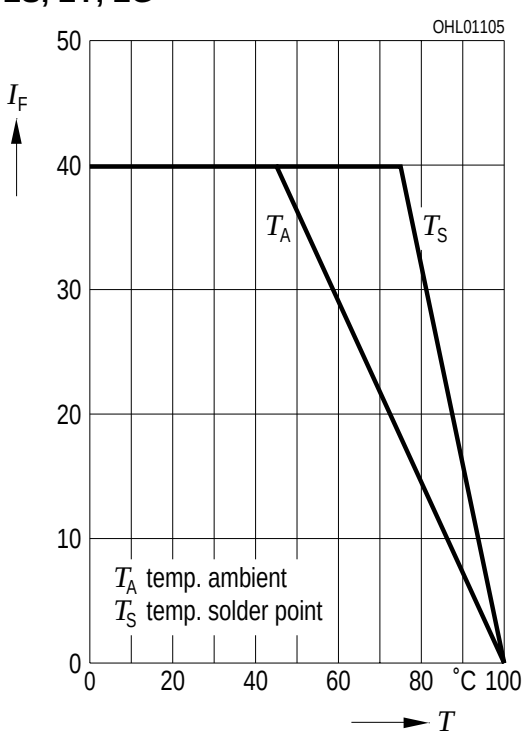
Durchlassstrom $I_F = f(V_F)$
Forward Current
T_A = 25 °C



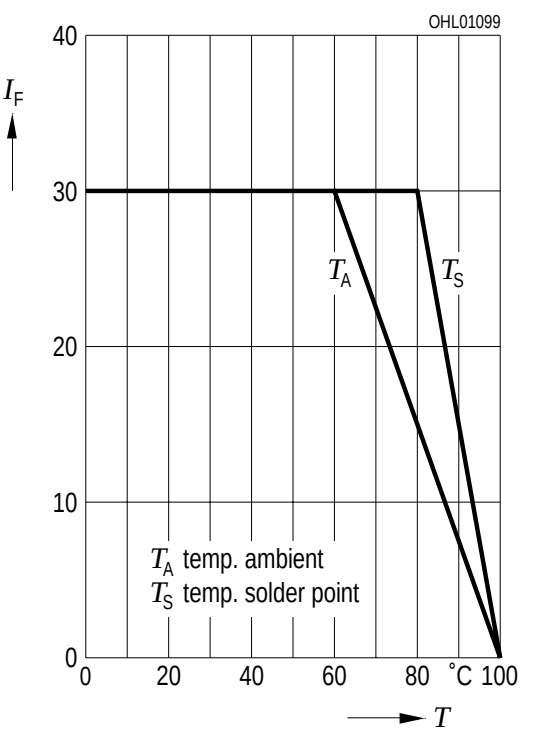
Relative Lichtstärke $I_V/I_{V(10\ mA)} = f(I_F)$
Relative Luminous Intensity
T_A = 25 °C



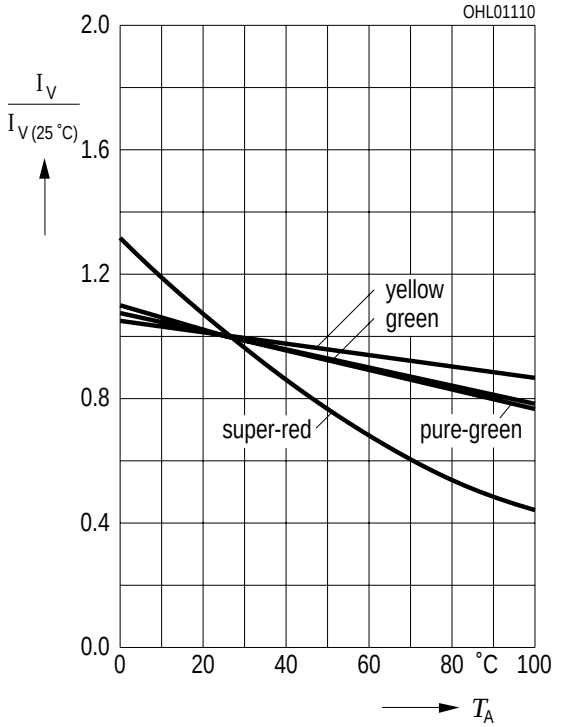
Maximal zulässiger Durchlassstrom $I_F = f(T)$
Max. Permissible Forward Current
LS, LY, LG



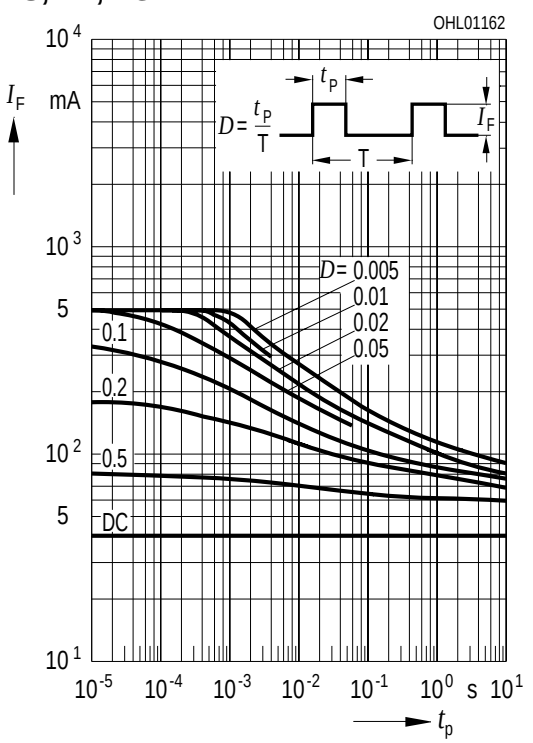
Maximal zulässiger Durchlassstrom $I_F = f(T)$
Max. Permissible Forward Current
LP



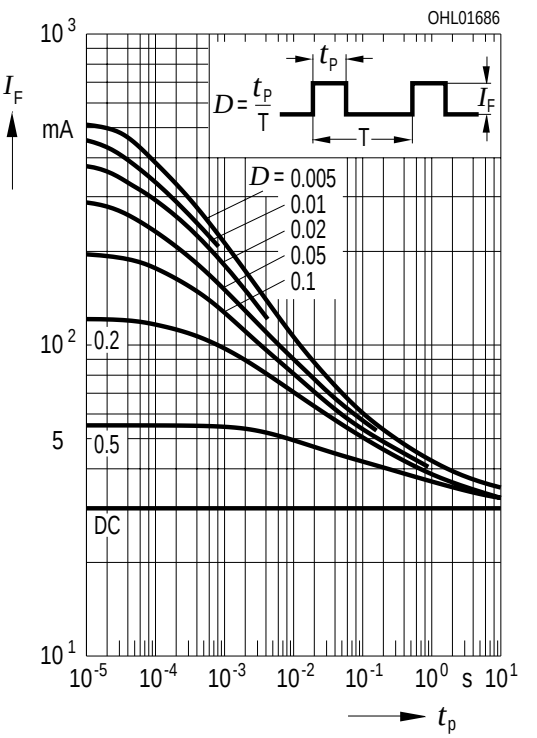
Relative Lichtstärke $I_V/I_{V(25\,°C)} = f(T_A)$
Relative Luminous Intensity
I_F = 10 mA



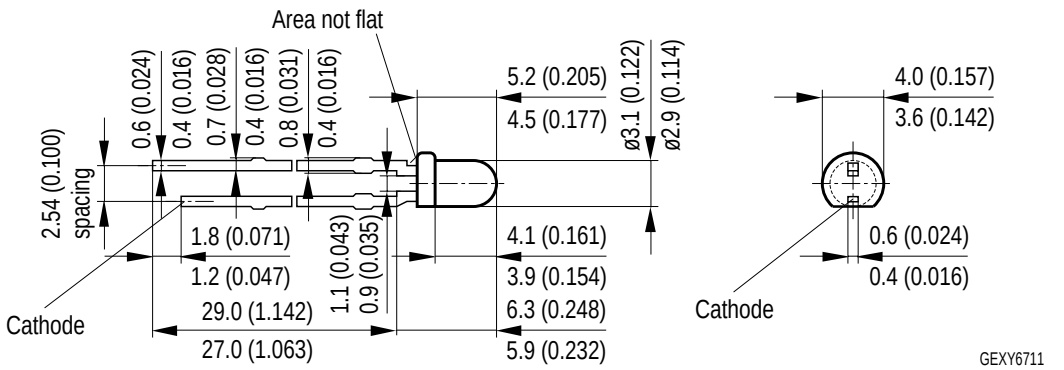
Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible Pulse Handling Capability
Duty cycle D = parameter, T_A = 25 °C
LS, LY, LG



Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible Pulse Handling Capability
Duty cycle D = parameter, T_A = 25 °C
LP



Maßzeichnung
Package Outlines

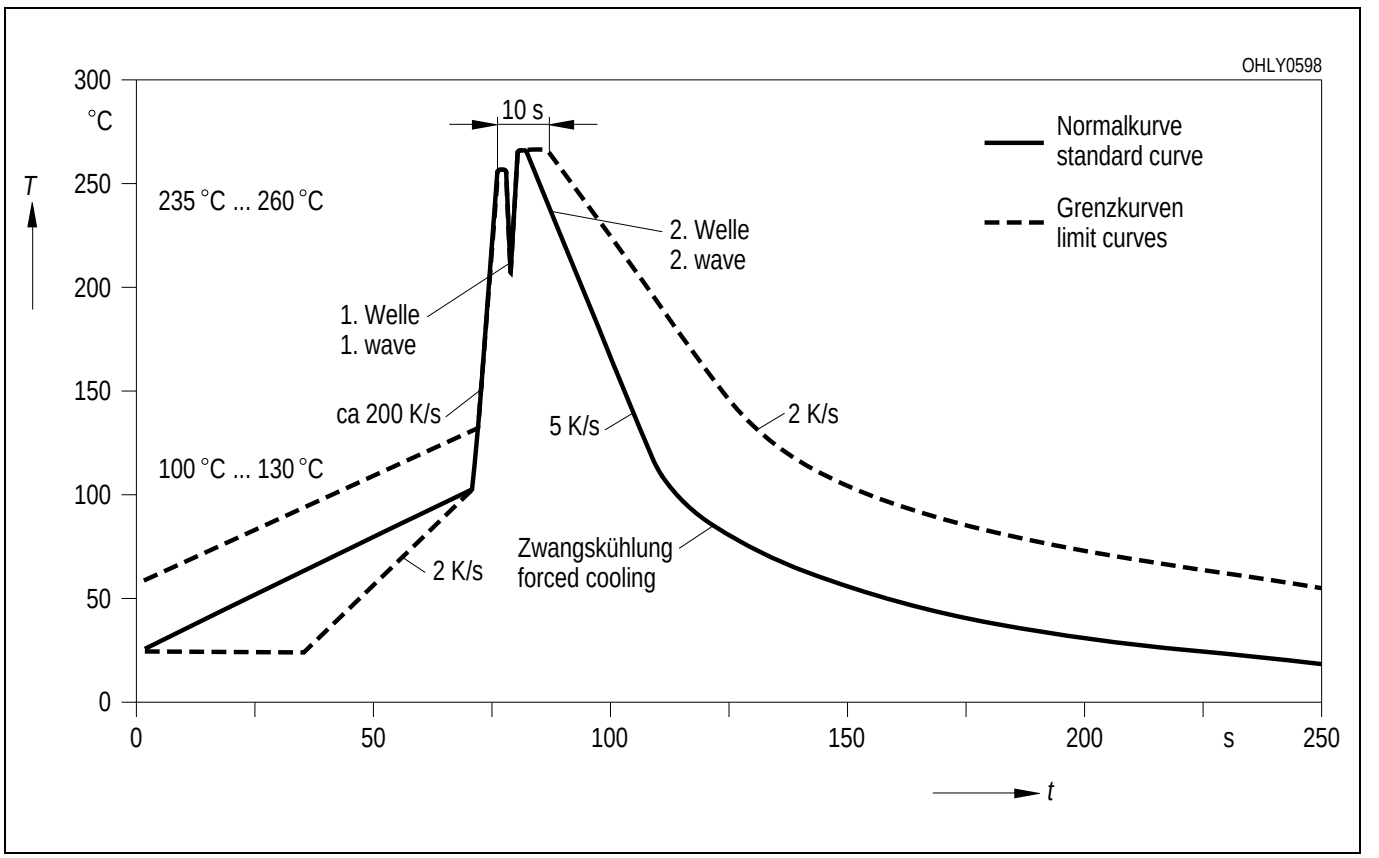


Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

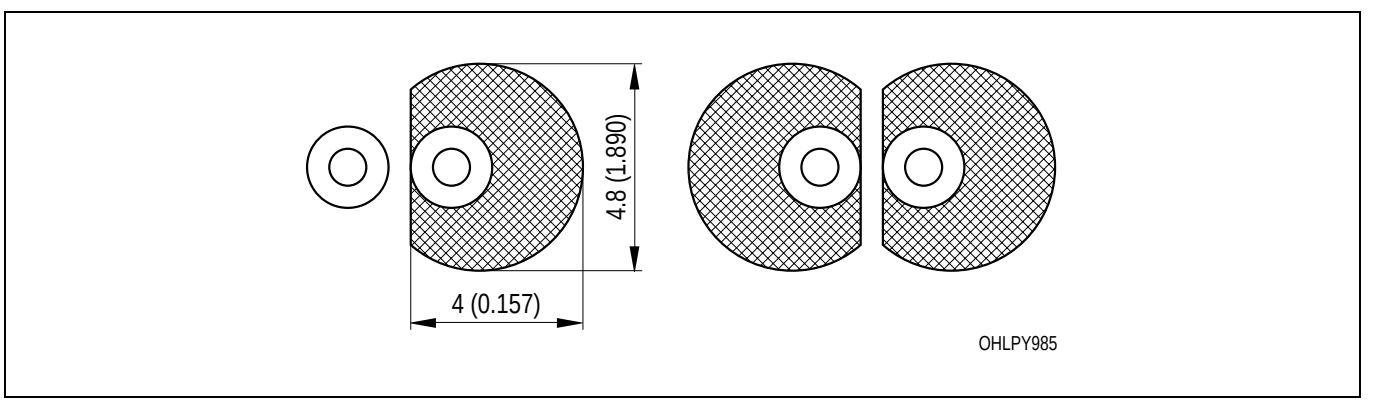
Kathodenkennung: kürzerer Lötspieß
Cathode mark: short solder lead
Gewicht / Approx. weight: 0.15 g

Lötbedingungen
Soldering Conditions

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



Empfohlenes Lötpaddesign Wellenlöten (TTW)
Recommended Solder Pad TTW Soldering



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

Revision History: 2003-09-10		Date of change
Previous Version: 2003-09-03		
Page	**Subjects (major changes since last revision)**	
3	thermal resistance (footnote)	
10	annotations	2002-07-23
5	luminous intensity groups	2002-07-30
3, 4	value (reverse voltage from 5 V to 12 V)	2002-09-18
2	low yield groups deleted	2003-09-03
1	ESD norm	2003-09-10
3	ambient temperature	2003-09-10

Published by OSRAM Opto Semiconductors GmbH
Wernerwerkstrasse 2, D-93049 Regensburg

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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.
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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.