ARGUS® LED
3 mm (T1) LED, Non Diffused

LS K380, LO K380, LY K380, LG K380, LP K380

Besondere Merkmale

- **Gehäusetyp:** eingefärbtes, klares 3 mm (T1) Gehäuse mit spezieller Linse
- **Besonderheit des Bauteils:** mit Einsatz eines äußeren Reflektors zur Hinterleuchtung von Leuchtfeldern und LCD-Anzeigen; Lötspieße mit Aufsetzebene
- **Wellenlänge:** 628 nm (super-rot), 606 nm (orange), 587 nm (gelb), 570 nm (grün), 560 nm (pure green)
- **Abstrahlwinkel:** angepasst an Einsatz mit äußerem Reflektor, siehe Diagramm
- **Technologie:** GaAlP (super-rot, orange, gelb, grün), GaP (pure green)
- **optischer Wirkungsgrad:** 1,5 lm/W (super-rot, orange, gelb), 2,5 lm/W (grün), 0,6 lm/W (pure green)
- **Gruppierungsparameter:** Lichtstrom
- **Lötmethode:** Wellenlöten (TTW)
- **Verpackung:** Schüttgut, gegurtet lieferbar

Features

- **package:** colored, clear 3 mm (T1) package with specially shaped lens
- **feature of the device:** for backlighting and LCDs with use of a reflector; solder leads with stand-off
- **wavelength:** 628 nm (super-red), 606 nm (orange), 587 nm (yellow), 570 nm (green), 560 nm (pure green)
- **viewing angle:** matched to use with external reflector, see diagram
- **technology:** GaAlP (super-red, orange, yellow, green), GaP (pure green)
- **optical efficiency:** 1.5 lm/W (super-red, orange, yellow), 2.5 lm/W (green), 0.6 lm/W (pure green)
- **grouping parameter:** luminous flux
- **soldering methods:** TTW soldering
- **packing:** bulk, available taped on reel

Anwendungen

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

Applications

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

Typ Type	Emissionsfarbe Color of Emission	Gehäusefarbe Color of Package	Lichtstrom Luminous Flux I_F = 15 mA Φ_V (mlm)	Bestellnummer Ordering Code
LS K380-LP	super-red	red clear	11.2 ... 71.0	Q62703-Q1768
LS K380-N			28.0 ... 45.0	Q62703-Q0760
LS K380-P			45.0 ... 71.0	Q62703-Q1003
LS K380-Q			71.0 ... 112.0	Q62703-Q1004
LS K380-NR			28.0 ... 180.0	Q62703-Q2223
LO K380-LP	orange	orange clear	11.2 ... 71.0	Q62703-Q1888
LO K380-N			28.0 ... 45.0	Q62703-Q2227
LO K380-P			45.0 ... 71.0	Q62703-Q2228
LO K380-Q			71.0 ... 112.0	Q62703-Q2229
LO K380-NR			28.0 ... 180.0	Q62703-Q2201
LY K380-LP	yellow	yellow clear	11.2 ... 71.0	Q62703-Q1769
LY K380-N			28.0 ... 45.0	Q62703-Q0575
LY K380-P			45.0 ... 71.0	Q62703-Q0576
LY K380-Q			71.0 ... 112.0	Q62703-Q3844
LY K380-NR			28.0 ... 180.0	Q62703-Q2224
LG K380-LP	green	green clear	11.2 ... 71.0	Q62703-Q1770
LG K380-N			28.0 ... 45.0	Q62703-Q0759
LG K380-P			45.0 ... 71.0	Q62703-Q1034
LG K380-Q			71.0 ... 112.0	Q62703-Q3193
LG K380-NR			28.0 ... 180.0	Q62703-Q2225
LP K380-KN	pure green	colorless clear	7.1 ... 45.0	Q62703-Q2506
LP K380-L			11.2 ... 18.0	Q62703-Q3215
LP K380-M			18.0 ... 28.0	Q62703-Q2610
LP K380-N			28.0 ... 45.0	Q62703-Q2605
LP K380-LP			11.2 ... 71.0	Q62703-Q3217

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 %.

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!.

Grenzwerte
Maximum Ratings

Bezeichnung **Parameter**	**Symbol** **Symbol**	**Wert** **Value**		**Einheit** **Unit**
		LS, LO, 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	I_F	40	30	mA
Stoßstrom Surge current $t \leq 10$ µs, $D = 0.005$	I_{FM}	0.5		A
Sperrspannung Reverse voltage	V_R	5		V
Leistungsaufnahme Power consumption	P_{tot}	130	95	mW
Wärmewiderstand [1] Thermal resistance Sperrschicht/Umgebung Junction/ambient Sperrschicht/Lötpad Junction/solder point Montage auf PC-Board FR 4 (Padgröße ≥ 16 mm²) mounted on PC board FR 4 (pad size ≥ 16 mm²) Minimale Beinchenlänge Minimum lead length	 $R_{th\ JA}$ $R_{th\ JS}$	 400 180		 K/W K/W

[1] 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.

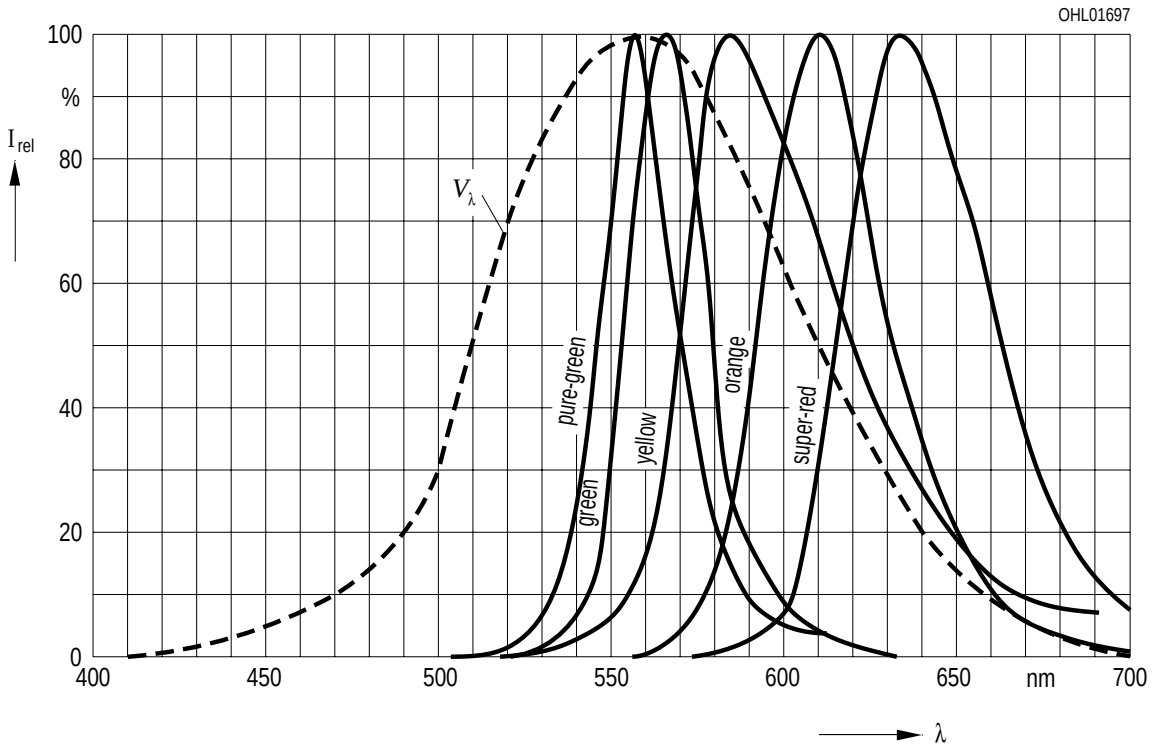
Kennwerte (T_A = 25 °C)
Characteristics

Bezeichnung **Parameter**		**Symbol** **Symbol**	**Wert** **Value**					**Einheit** **Unit**
			LS	**LO**	**LY**	**LG**	**LP**	
Wellenlänge des emittierten Lichtes Wavelength at peak emission I_F = 15 mA	(typ.)	λ_{peak}	635	610	586	572	557	nm
Dominantwellenlänge [1] Dominant wavelength I_F = 15 mA	(typ.)	λ_{dom}	628	606	587	570	560	nm
Spektrale Bandbreite bei 50 % $\Phi_{rel\ max}$ Spectral bandwidth at 50 % $\Phi_{rel\ max}$ I_F = 15 mA	(typ.)	$\Delta\lambda$	45	40	45	25	22	nm
Durchlassspannung [2] Forward voltage I_F = 15 mA	(typ.) (max.)	V_F V_F	2.1 2.5	2.1 2.5	2.1 2.5	2.1 2.5	2.1 2.5	V V
Sperrstrom Reverse current V_R = 5 V	(typ.) (max.)	I_R I_R	0.01 10	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 = 15 mA; –10°C ≤ T ≤ 100°C	(typ.)	$TC_{\lambda peak}$	0.11	0.12	0.10	0.11	0.11	nm/K
Temperaturkoeffizient von λ_{dom} Temperature coefficient of λ_{dom} I_F = 15 mA; –10°C ≤ T ≤ 100°C	(typ.)	$TC_{\lambda dom}$	0.07	0.07	0.07	0.07	0.05	nm/K
Temperaturkoeffizient von V_F Temperature coefficient of V_F I_F = 15 mA; –10°C ≤ T ≤ 100°C	(typ.)	TC_V	–1.9	–1.9	–1.9	–1.4	–2.1	mV/K
Optischer Wirkungsgrad Optical efficiency I_F = 15 mA	(typ.)	η_{opt}	1.5	1.5	1.5	2.5	0.6	lm/W

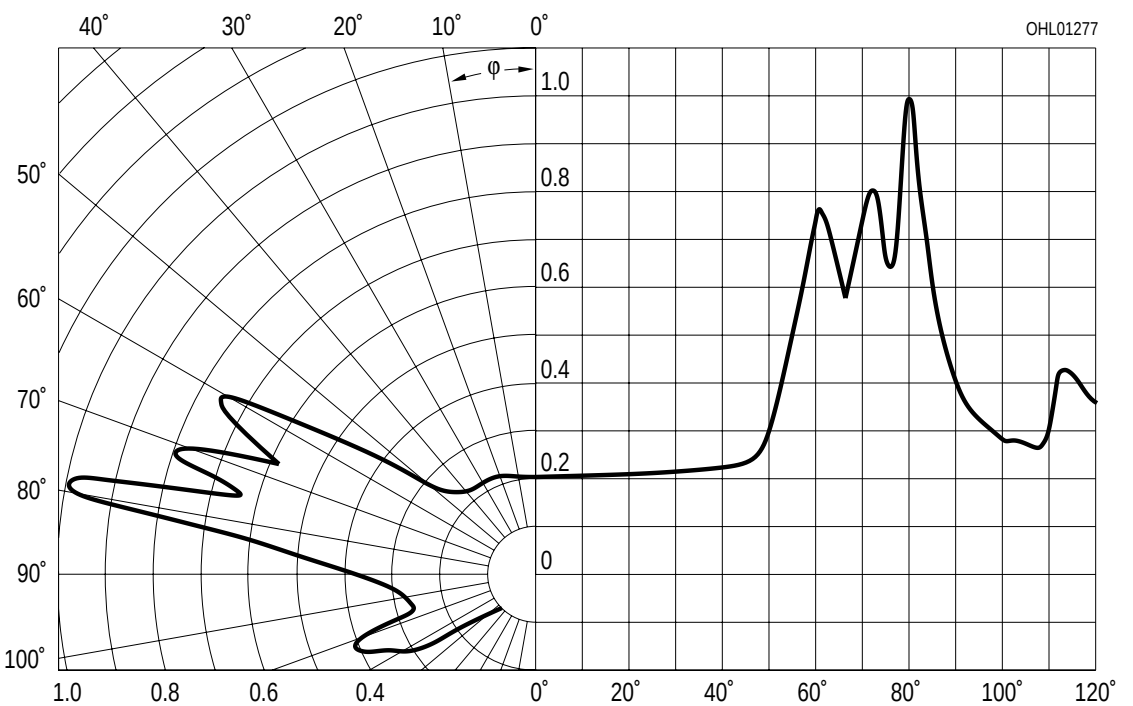
[1] Wellenlängen werden mit einer Stromeinprägedauer von 25 ms und einer Genauigkeit von ±1 nm ermittelt.
Wavelengths are tested at a current pulse duration of 25 ms and a tolerance of ±1 nm.

[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.

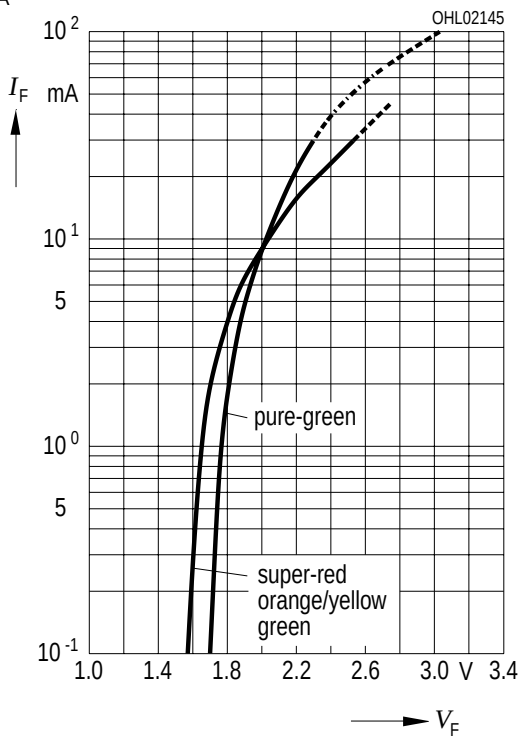
Relative spektrale Emission $I_{rel} = f(\lambda)$, T_A = 25 °C, I_F = 15 mA
Relative Spectral Emission
V(λ) = spektrale Augenempfindlichkeit
Standard eye response curve



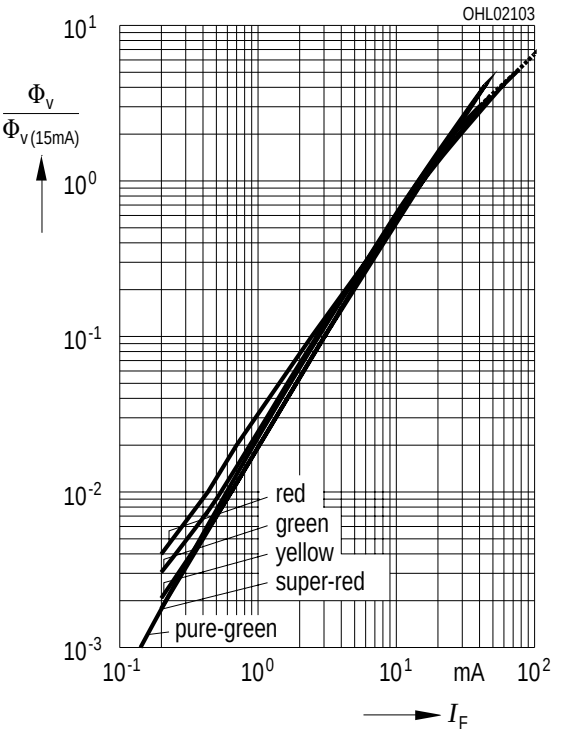
Abstrahlcharakteristik $I_{rel} = f(\varphi)$
Radiation Characteristic



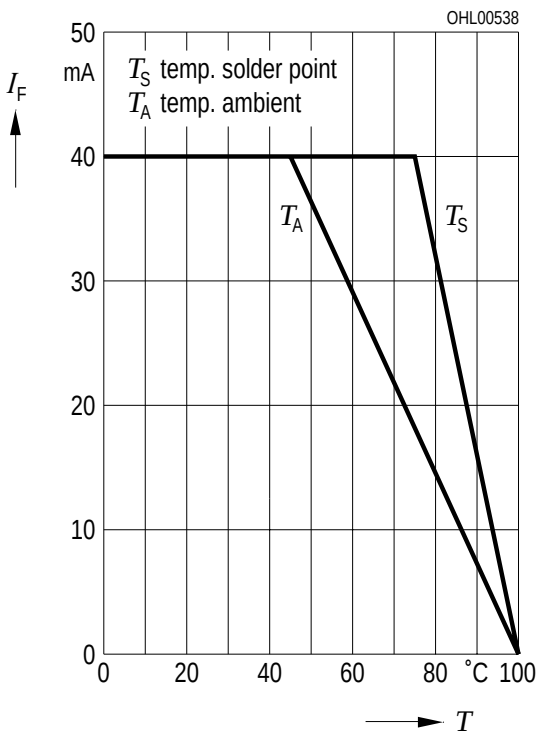
Durchlassstrom $I_F = f(V_F)$
Forward Current
T_A = 25 °C



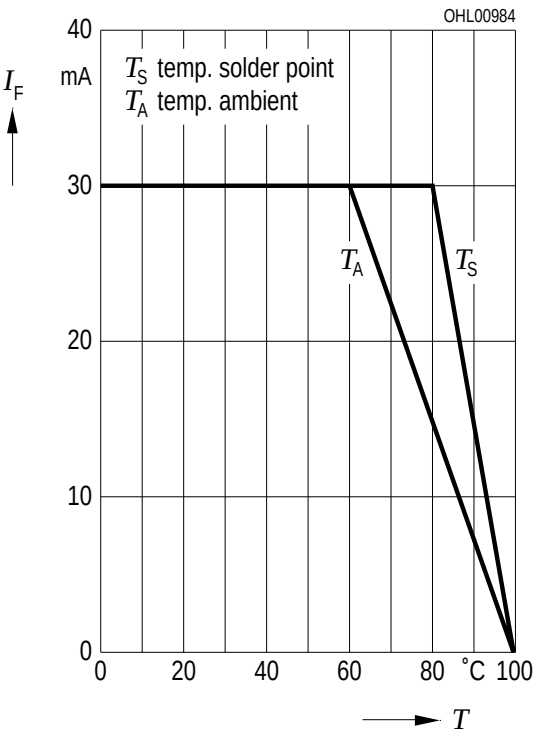
Relativer Lichtstrom $\Phi_V/\Phi_{V(15\ mA)} = f(I_F)$
Relative Luminous Flux
T_A = 25 °C



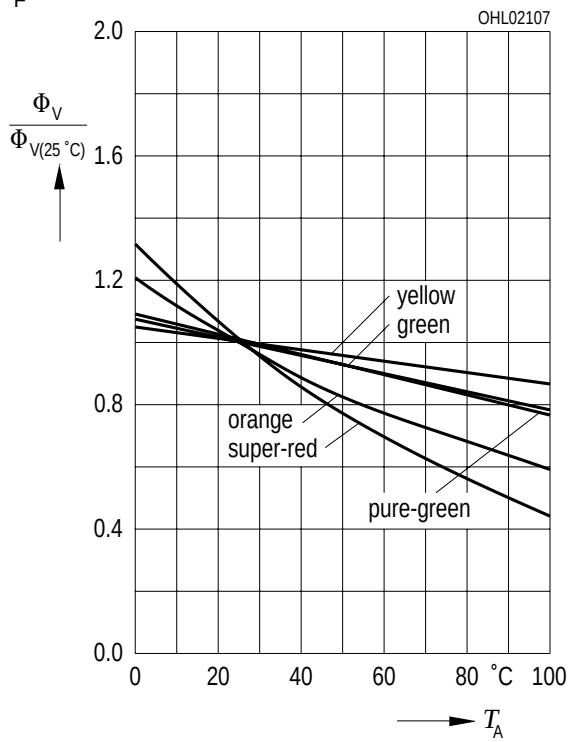
Maximal zulässiger Durchlassstrom $I_F = f(T)$
Max. Permissible Forward Current
LS, LO, LY, LG



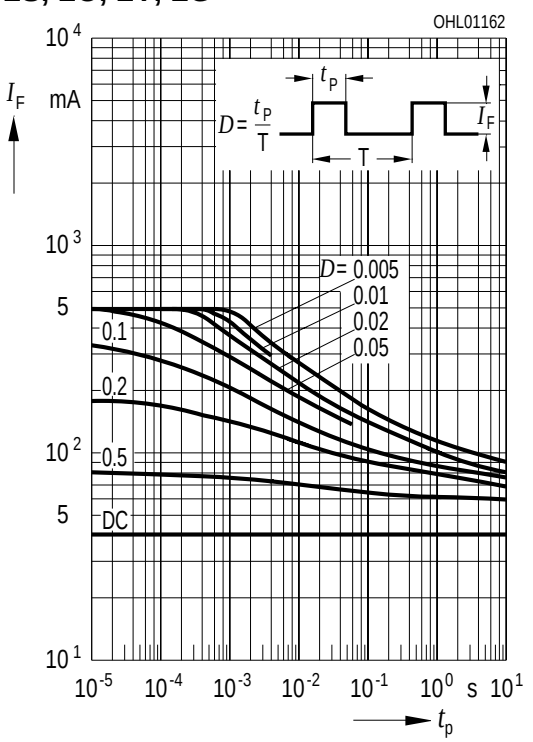
Maximal zulässiger Durchlassstrom $I_F = f(T)$
Max. Permissible Forward Current
LP



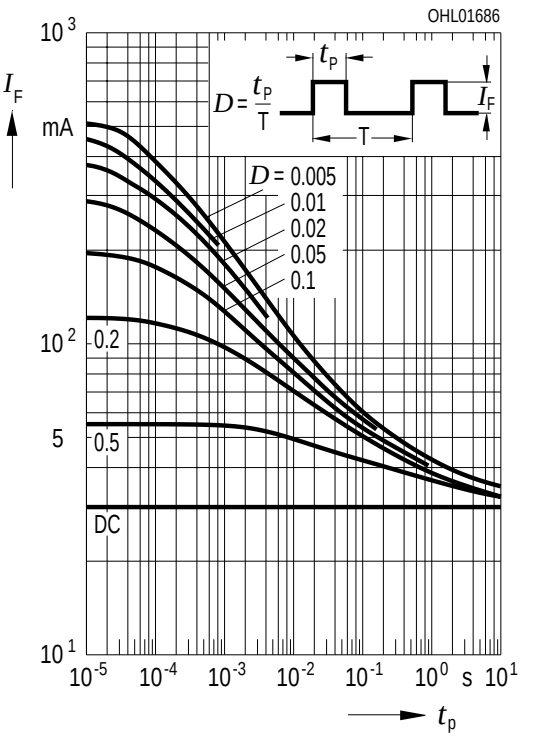
Relativer Lichtstrom $\Phi_V / \Phi_{V(25\,°C)} = f(T_A)$
Relative Luminous Flux
I_F = 15 mA



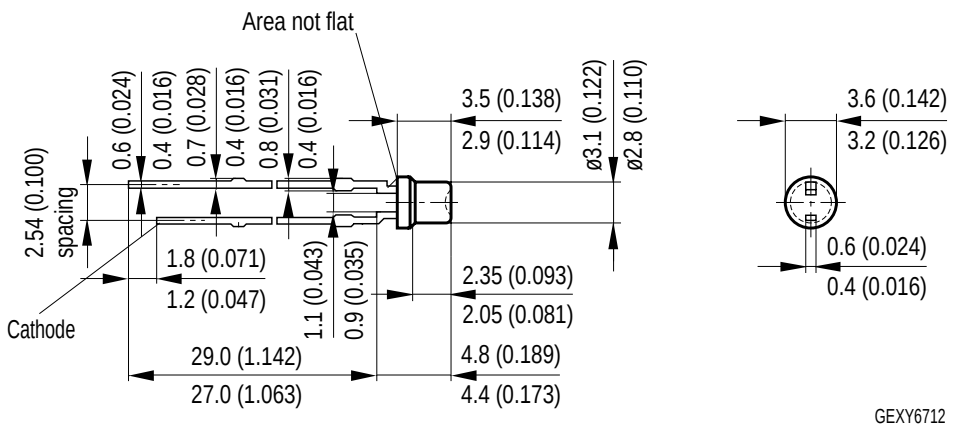
Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible Pulse Handling Capability
Duty cycle D = parameter, T_A = 25 °C
LS, LO, LY, LG



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



Maßzeichnung
Package Outlines

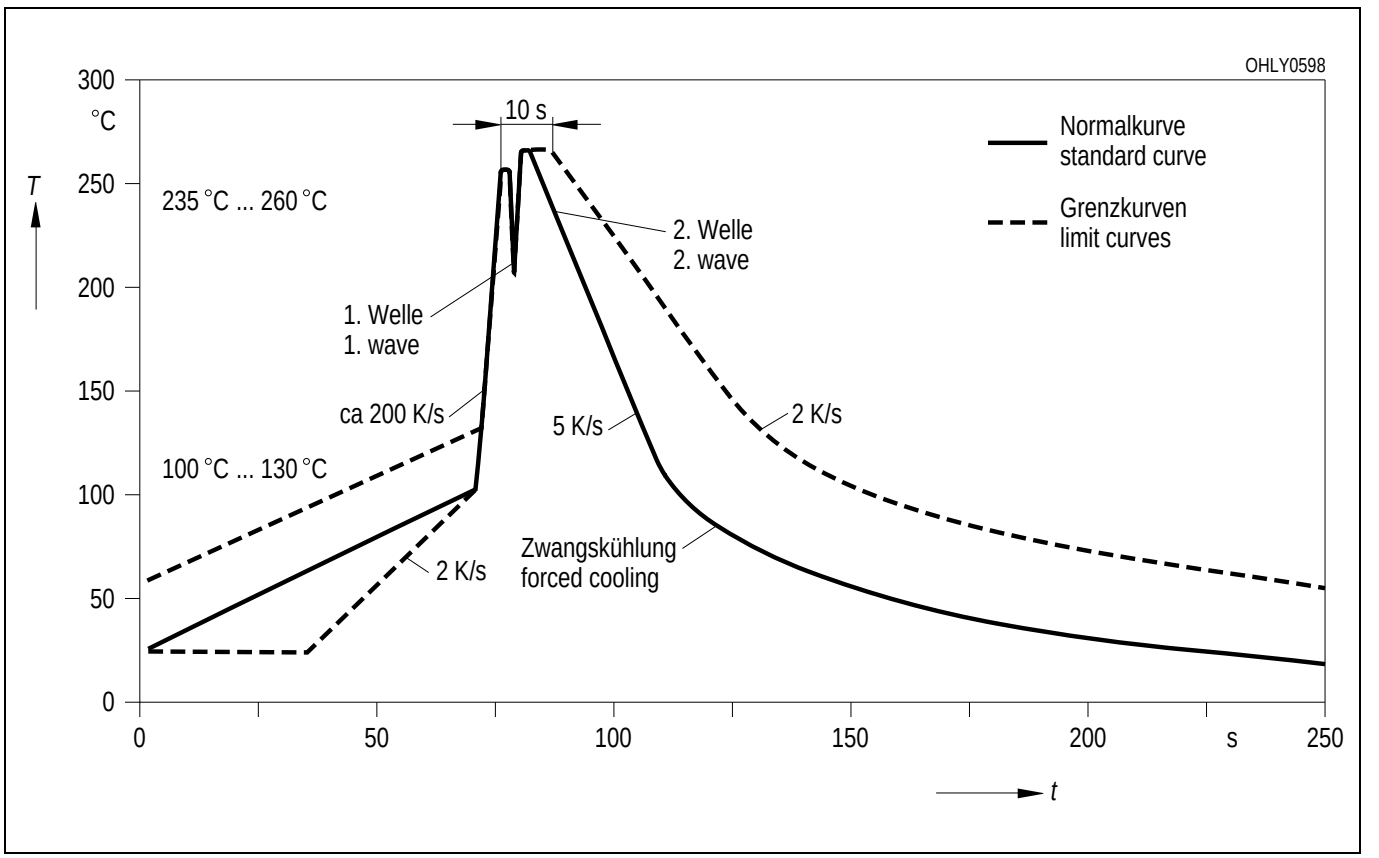


Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

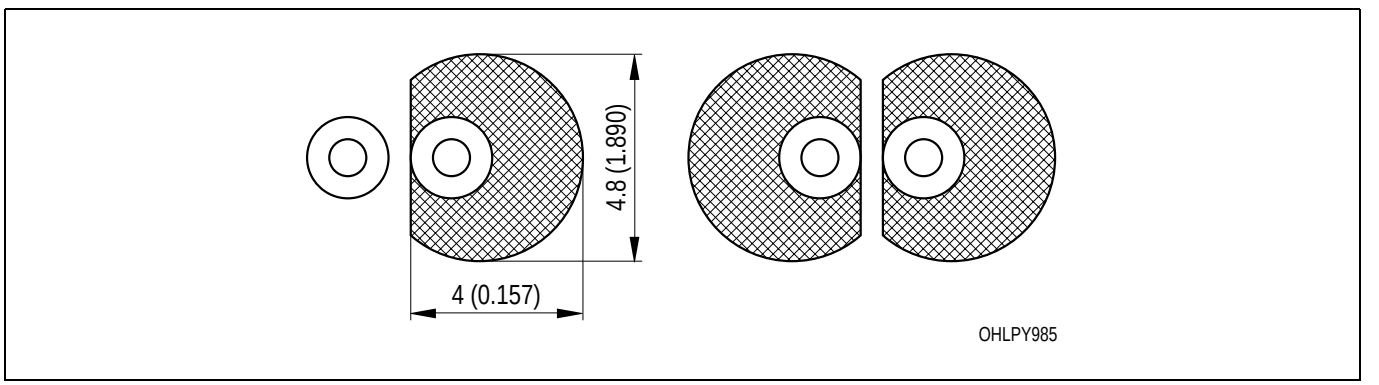
Kathodenkennung: kürzerer Lötspieß
Cathode mark: short solder lead
Gewicht / Approx. weight: 160 mg

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: 2002-03-15	
Previous Version: 2001-02-14	
Page	**Subjects (major changes since last revision)**
3	thermal resistance (footnote)
4	value (wavelength orange)

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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.
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