

## 3 mm (T1) LED, Non Diffused

LS 3340, LO 3340, LY 3340, LG 3330, LP 3340



### Besondere Merkmale

- **Gehäusetyyp:** eingefärbtes, klares 3 mm (T1) Gehäuse
- **Besonderheit des Bauteils:** Lötspieße mit Aufsetzebene
- **Wellenlänge:** 628 nm (super-rot), 605 nm (orange), 590 nm (gelb), 570 nm (grün), 560 nm (pure green)
- **Abstrahlwinkel:** 50°
- **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:** Lichtstärke
- **Lötmethode:** Wellenlöten (TTW)
- **Verpackung:** Schüttgut, gegurtet lieferbar

### Anwendungen

- optischer Indikator
- Hinterleuchtung (LCD, Handy, Schalter, Tasten, Displays, Werbebeleuchtung, Allgemeinbeleuchtung)
- Signal- und Symbolleuchten
- Markierungsbeleuchtung (z.B. Stufen, Fluchtwege, u.ä.)
- Innenbeleuchtung im Automobilbereich (z.B. Instrumentenbeleuchtung, u.ä.)

### Features

- **package:** colored, clear 3 mm (T1) package
- **feature of the device:** solder leads with stand-off
- **wavelength:** 628 nm (super-red), 605 nm (orange), 590 nm (yellow), 570 nm (green), 560 nm (pure green)
- **viewing angle:** 50°
- **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 intensity
- **soldering methods:** TTW soldering
- **packing:** bulk, available taped on reel

### Applications

- optical indicators
- backlighting (LCD, cellular phones, switches, keys, displays, illuminated advertising, general lighting)
- signal and symbol luminaire
- marker lights (e.g. steps, exit ways, etc.)
- interior automotive lighting (e.g. dashboard backlighting, etc.)
- light writing displays
- signal and symbol luminaire

## LS 3340, LO 3340, LY 3340, LG 3330, LP 3340

| Typ<br>Type   | Emissions-<br>farbe<br>Color of<br>Emission | Gehäuse-<br>farbe<br>Color of<br>Package | Lichtstärke<br>Luminous<br>Intensity<br>$I_F = 10 \text{ mA}$<br>$I_V \text{ (mcd)}$ | Lichtstrom<br>Luminous<br>Flux<br>$I_F = 10 \text{ mA}$<br>$\Phi_V \text{ (mlm)}$ | Bestellnummer<br>Ordering Code   |
|---|---|--|--|---|--|
| LS 3340-KN<br>LS 3340-L<br>LS 3340-M<br>LS 3340-N<br>LS 3340-LP | super-red                                   | red clear                                | 7.1 ... 45.0<br>11.2 ... 18.0<br>18.0 ... 28.0<br>28.0 ... 45.0<br>11.2 ... 71.0     | 35 (typ.)<br>20 (typ.)<br>30 (typ.)<br>45 (typ.)<br>55 (typ.)                     | Q62703-Q1701<br>Q62703-Q1702<br>Q62703-Q1704<br>Q62703-Q2320<br>Q62703-Q3223 |
| LO 3340-KN<br>LO 3340-L<br>LO 3340-M<br>LO 3340-N<br>LO 3340-LP | orange                                      | orange clear                             | 7.1 ... 45.0<br>11.2 ... 18.0<br>18.0 ... 28.0<br>28.0 ... 45.0<br>11.2 ... 71.0     | 35 (typ.)<br>20 (typ.)<br>30 (typ.)<br>45 (typ.)<br>55 (typ.)                     | Q62703-Q1886<br>Q62703-Q2256<br>Q62703-Q2255<br>Q62703-Q2473<br>Q62703-Q2628 |
| LY 3340-JM<br>LY 3340-L<br>LY 3340-M<br>LY 3340-N<br>LY 3340-LP | yellow                                      | yellow clear                             | 4.5 ... 28.0<br>11.2 ... 18.0<br>18.0 ... 28.0<br>28.0 ... 45.0<br>11.2 ... 71.0     | 20 (typ.)<br>20 (typ.)<br>30 (typ.)<br>45 (typ.)<br>55 (typ.)                     | Q62703-Q1789<br>Q62703-Q1791<br>Q62703-Q1999<br>Q62703-Q2652<br>Q62703-Q1792 |
| LG 3330-KN<br>LG 3330-L<br>LG 3330-M<br>LG 3330-N<br>LG 3330-LP | green                                       | colorless clear                          | 7.1 ... 45.0<br>11.2 ... 18.0<br>18.0 ... 28.0<br>28.0 ... 45.0<br>11.2 ... 71.0     | 35 (typ.)<br>20 (typ.)<br>30 (typ.)<br>45 (typ.)<br>55 (typ.)                     | Q62703-Q1698<br>Q62703-Q1699<br>Q62703-Q1700<br>Q62703-Q2010<br>Q62703-Q2011 |
| LP 3340-JL<br>LP 3340-K<br>LP 3340-L<br>LP 3340-KM              | pure green                                  | green clear                              | 4.5 ... 18.0<br>7.1 ... 11.2<br>11.2 ... 18.0<br>7.1 ... 28.0                        | 10 (typ.)<br>9 (typ.)<br>14 (typ.)<br>17 (typ.)                                   | Q62703-Q2749<br>Q62703-Q2982<br>Q62703-Q2980<br>Q62703-Q3211                 |

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 an accuracy of  $\pm 11 \%$ .

**Grenzwerte**  
**Maximum Ratings**

| Bezeichnung<br>Parameter  | Symbol<br>Symbol               | Wert<br>Value     |    | Einheit<br>Unit |
|---|--------------------------------|-------------------|----|-----------------|
|   |                                | LS, LO,<br>LY, LG | LP |                 |
| Betriebstemperatur<br>Operating temperature range   | $T_{op}$                       | - 55 ... + 100    |    | °C              |
| Lagertemperatur<br>Storage temperature range  | $T_{stg}$                      | - 55 ... + 100    |    | °C              |
| Sperrschichttemperatur<br>Junction temperature  | $T_j$                          | + 100             |    | °C              |
| Durchlaßstrom<br>Forward current  | $I_F$                          | 40                | 30 | mA              |
| Stoßstrom<br>Surge current<br>$t \leq 10 \mu s, D = 0.005$  | $I_{FM}$                       | 0.5               |    | A               |
| Sperrspannung<br>Reverse voltage  | $V_R$                          | 5                 |    | V               |
| Leistungsaufnahme<br>Power dissipation<br>$T_A \leq 25 \text{ °C}$  | $P_{tot}$                      | 130               | 95 | mW              |
| Wärmewiderstand<br>Thermal resistance<br>Sperrschicht/Umgebung<br>Junction/ambient<br>Sperrschicht/Lötpad<br>Junction/soldering point<br>Montage auf PC-Board FR 4 (Padgröße $\geq 16 \text{ mm}^2$ )<br>mounted on PC board FR 4 (pad size $\geq 16 \text{ mm}^2$ )<br>Minimale Beinchenlänge<br>Minimum lead length | $R_{th JA}$<br><br>$R_{th JS}$ | 400<br><br>180    |    | K/W<br><br>K/W  |

Kennwerte ( $T_A = 25\text{ °C}$ )

Characteristics

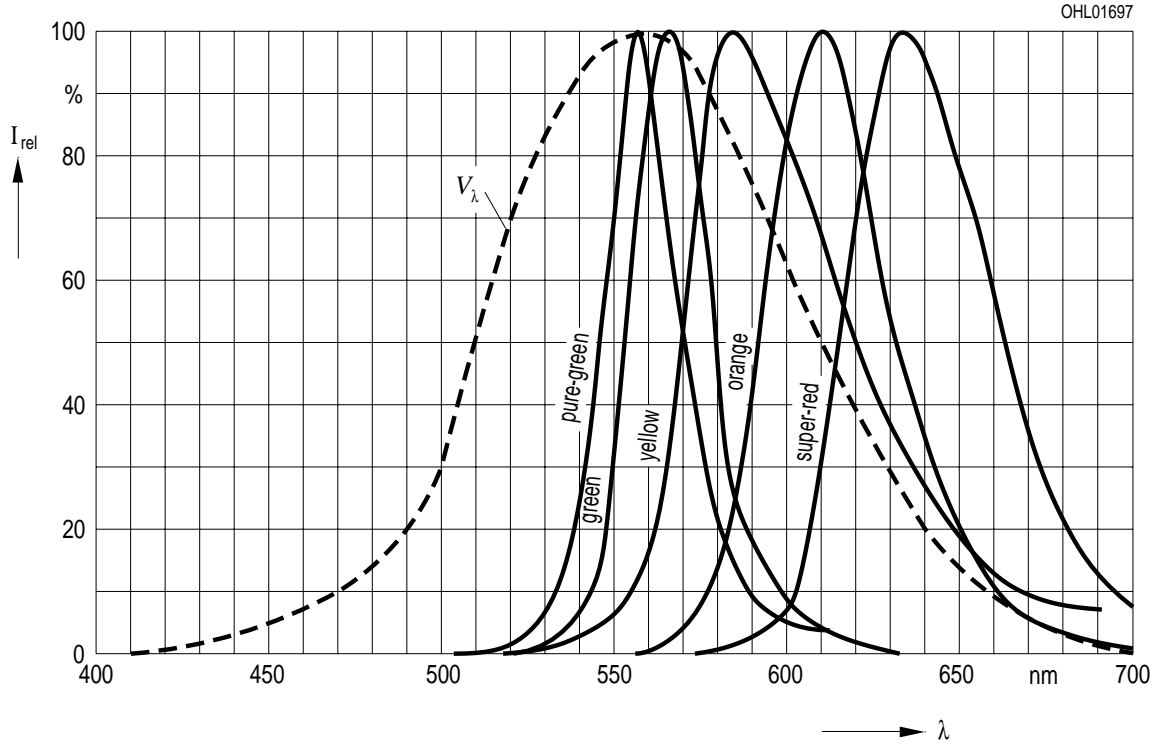
| Bezeichnung<br>Parameter  | Symbol<br>Symbol                    | Wert<br>Value |            |            |            |            | Einheit<br>Unit                |
|---|-------------------------------------|---------------|------------|------------|------------|------------|--------------------------------|
|   |                                     | LS            | LO         | LY         | LG         | LP         |                                |
| Wellenlänge des emittierten Lichtes<br>Wavelength at peak emission<br>$I_F = 10\text{ mA}$                                      | (typ.) $\lambda_{\text{peak}}$      | 635           | 610        | 586        | 565        | 557        | nm                             |
| Dominantwellenlänge<br>Dominant wavelength<br>$I_F = 10\text{ mA}$  | (typ.) $\lambda_{\text{dom}}$       | 628           | 605        | 590        | 570        | 560        | nm                             |
| Spektrale Bandbreite bei 50 % $I_{\text{rel max}}$<br>Spectral bandwidth at 50 % $I_{\text{rel max}}$<br>$I_F = 10\text{ mA}$   | (typ.) $\Delta\lambda$              | 45            | 40         | 45         | 25         | 22         | nm                             |
| Abstrahlwinkel bei 50 % $I_V$ (Vollwinkel)<br>Viewing angle at 50 % $I_V$   | (typ.) $2\phi$                      | 50            | 50         | 50         | 50         | 50         | Grad<br>deg.                   |
| Durchlaßspannung<br>Forward voltage<br>$I_F = 10\text{ mA}$   | (typ.) $V_F$<br>(max.) $V_F$        | 2.0<br>2.6    | 2.0<br>2.6 | 2.0<br>2.6 | 2.0<br>2.6 | 2.0<br>2.6 | V<br>V                         |
| Sperrstrom<br>Reverse current<br>$V_R = 5\text{ V}$   | (typ.) $I_R$<br>(max.) $I_R$        | 0.01<br>10    | 0.01<br>10 | 0.01<br>10 | 0.01<br>10 | 0.01<br>10 | $\mu\text{A}$<br>$\mu\text{A}$ |
| Temperaturkoeffizient von $\lambda_{\text{peak}}$<br>Temperature coefficient of $\lambda_{\text{peak}}$<br>$I_F = 10\text{ mA}$ | (typ.) $TC_{\lambda_{\text{peak}}}$ | 0.11          | 0.12       | 0.10       | 0.11       | 0.11       | nm/K                           |
| Temperaturkoeffizient von $\lambda_{\text{dom}}$<br>Temperature coefficient of $\lambda_{\text{dom}}$<br>$I_F = 10\text{ mA}$   | (typ.) $TC_{\lambda_{\text{dom}}}$  | 0.07          | 0.07       | 0.07       | 0.07       | 0.05       | nm/K                           |
| Temperaturkoeffizient von $V_F$<br>Temperature coefficient of $V_F$<br>$I_F = 10\text{ mA}$                                     | (typ.) $TC_V$                       | -1.9          | -1.9       | -1.9       | -1.4       | -2.1       | mV/K                           |
| Optischer Wirkungsgrad<br>Optical efficiency<br>$I_F = 10\text{ mA}$  | (typ.) $\eta_{\text{opt}}$          | 1.5           | 1.5        | 1.5        | 2.5        | 0.6        | lm/W                           |

Relative spektrale Emission  $I_{rel} = f(\lambda)$ ,  $T_A = 25\text{ }^\circ\text{C}$ ,  $I_F = 10\text{ mA}$

**Relative Spectral Emission**

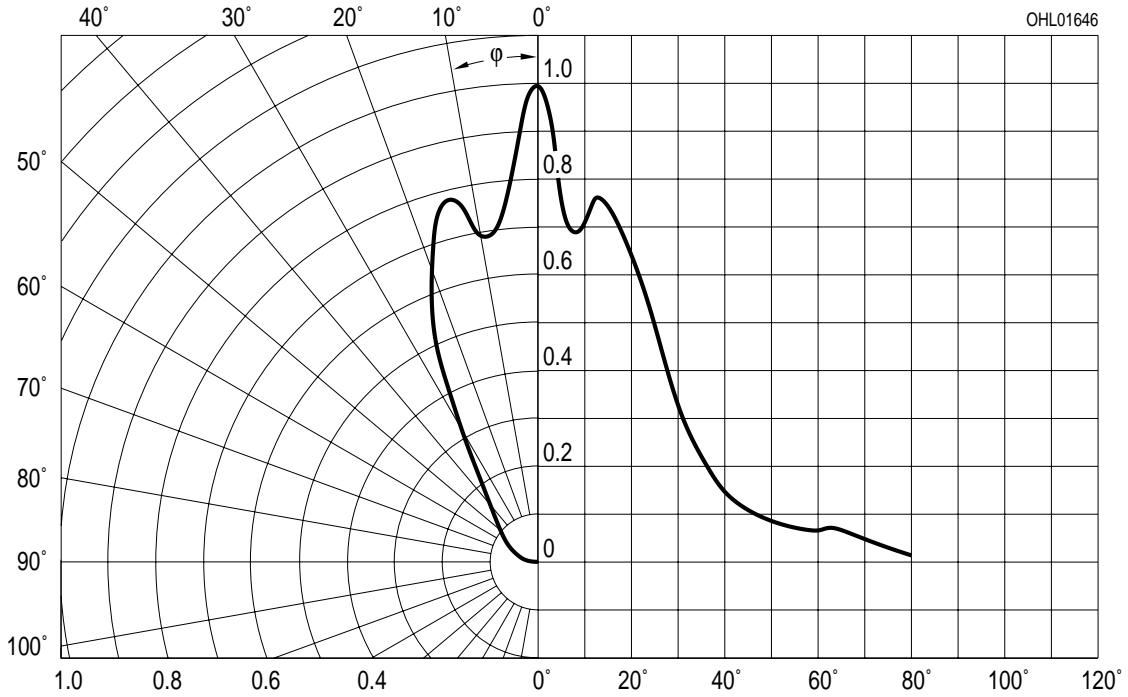
$V(\lambda)$  = spektrale Augenempfindlichkeit

Standard eye response curve



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

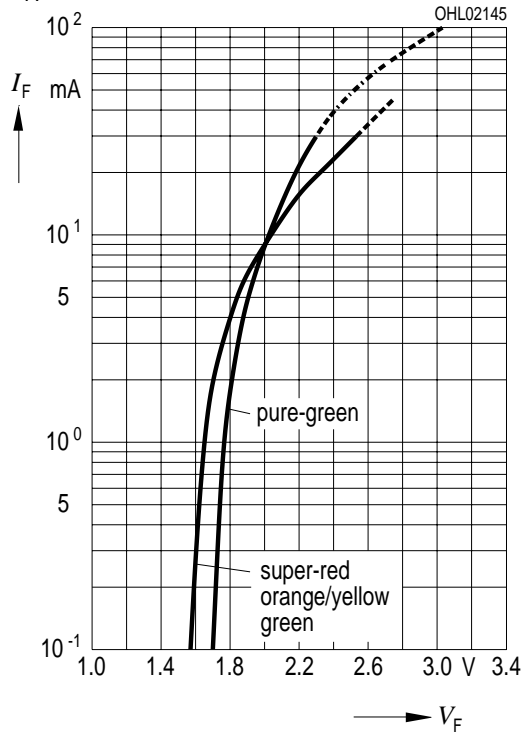
**Radiation Characteristic**



**Durchlaßstrom  $I_F = f(V_F)$**

**Forward Current**

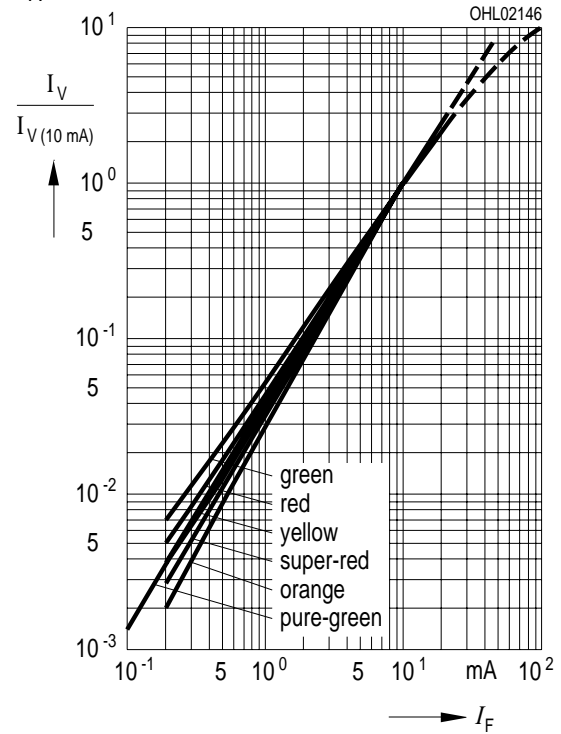
$T_A = 25\text{ °C}$



**Relative Lichtstärke  $I_V/I_{V(10\text{ mA})} = f(I_F)$**

**Relative Luminous Intensity**

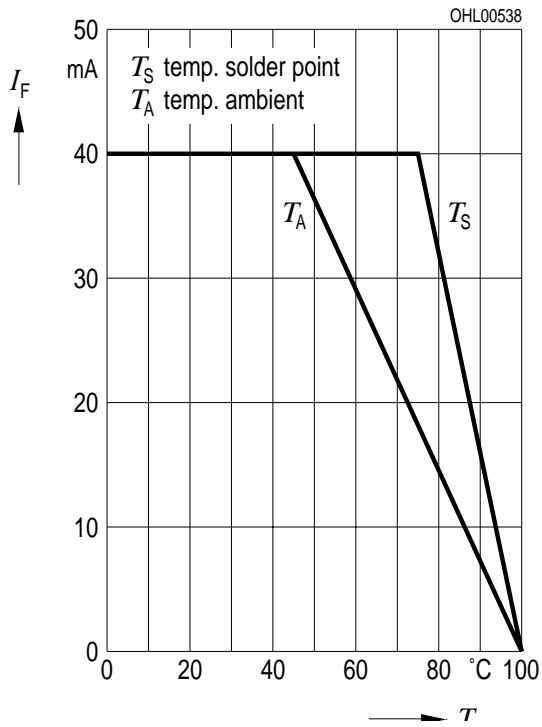
$T_A = 25\text{ °C}$



**Maximal zulässiger Durchlaßstrom  $I_F = f(T)$**

**Max. Permissible Forward Current**

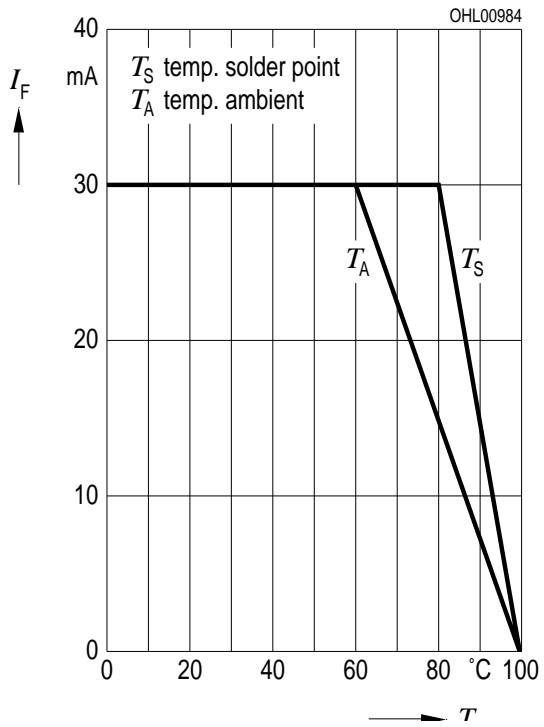
**LS, LO, LY, LG**



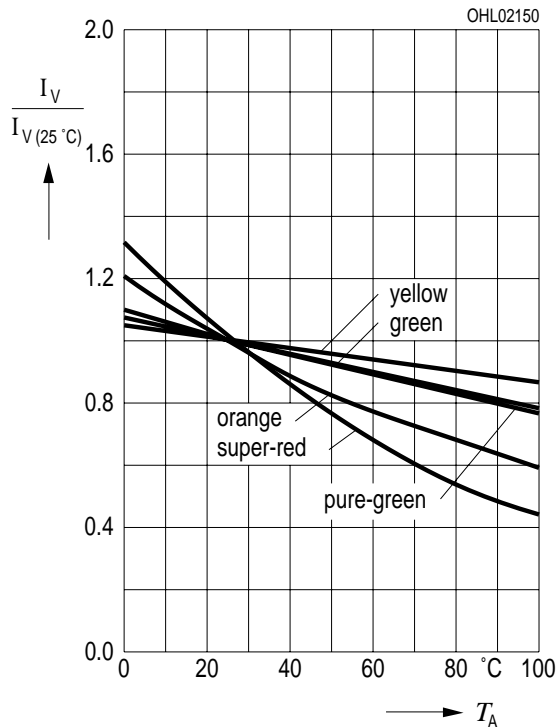
**Maximal zulässiger Durchlaßstrom  $I_F = f(T)$**

**Max. Permissible Forward Current**

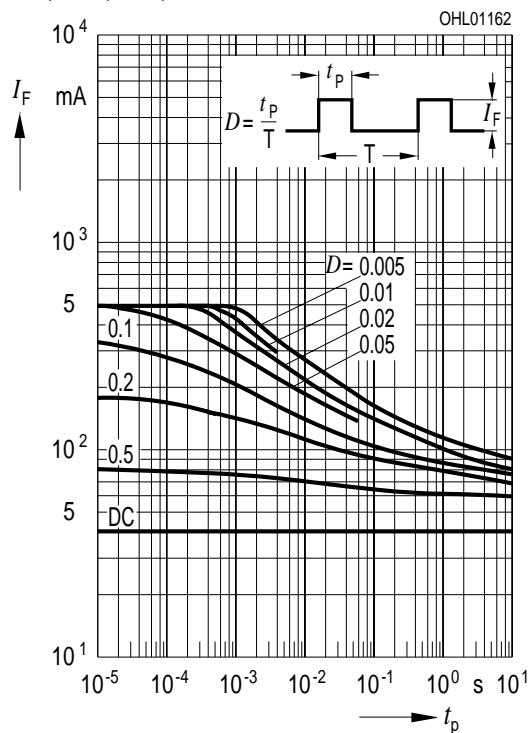
**LP**



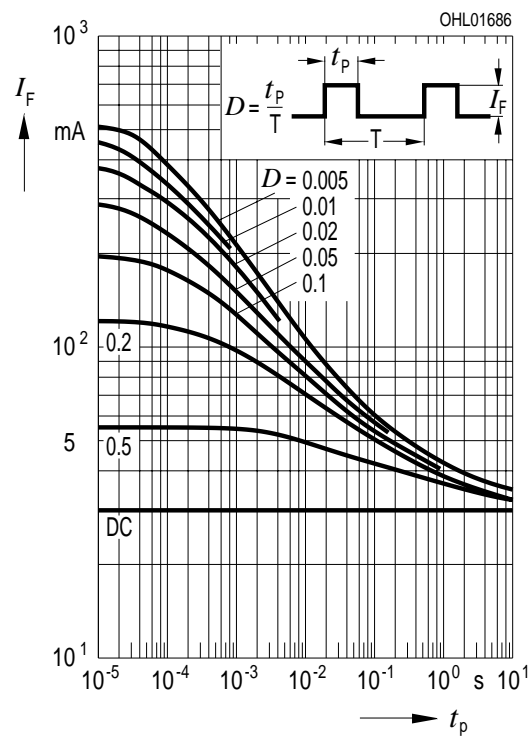
Relative Lichtstärke  $I_V/I_{V(25^\circ\text{C})} = f(T_A)$   
 Relative Luminous Intensity  $I_F = 10\text{ mA}$



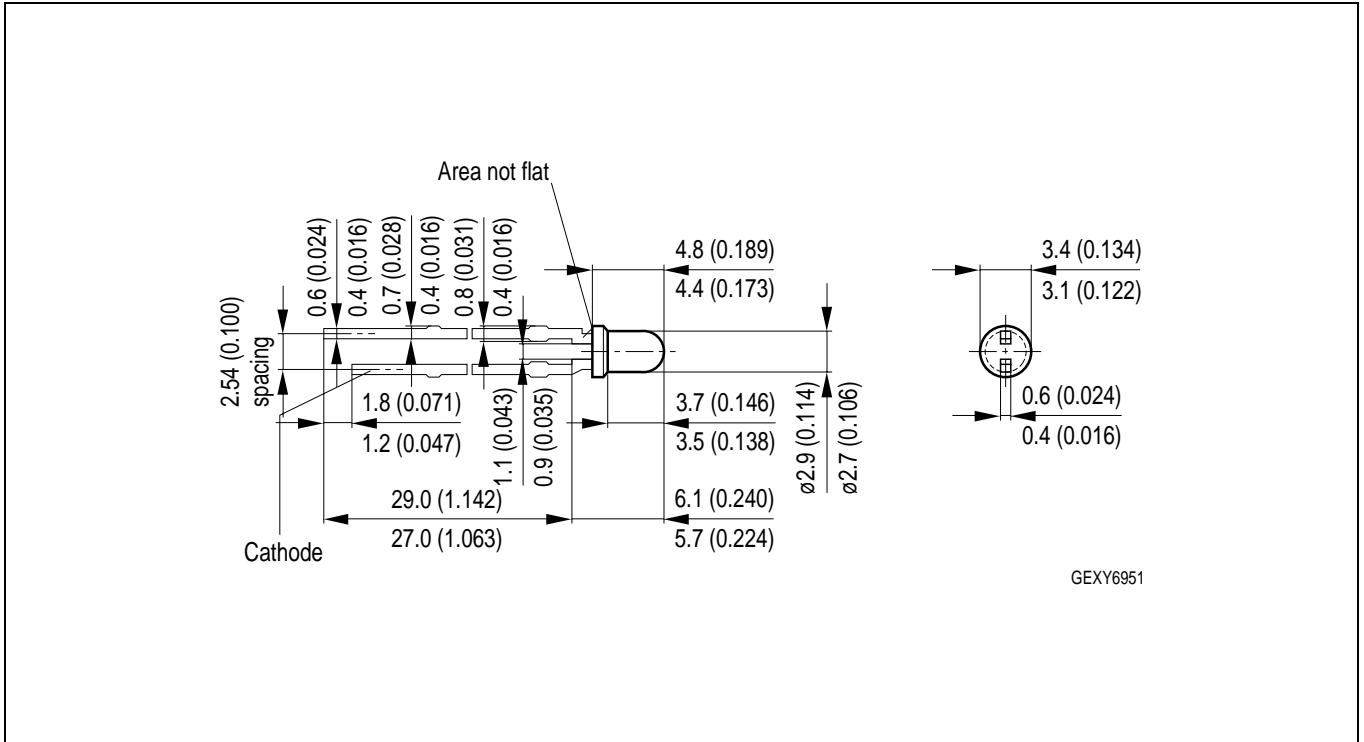
Zulässige Impulsbelastbarkeit  $I_F = f(t_p)$   
 Permissible Pulse Handling Capability  
 Duty cycle  $D =$  parameter,  $T_A = 25^\circ\text{C}$   
 LS, LO, LY, LG



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



**Maßzeichnung  
Package Outlines**



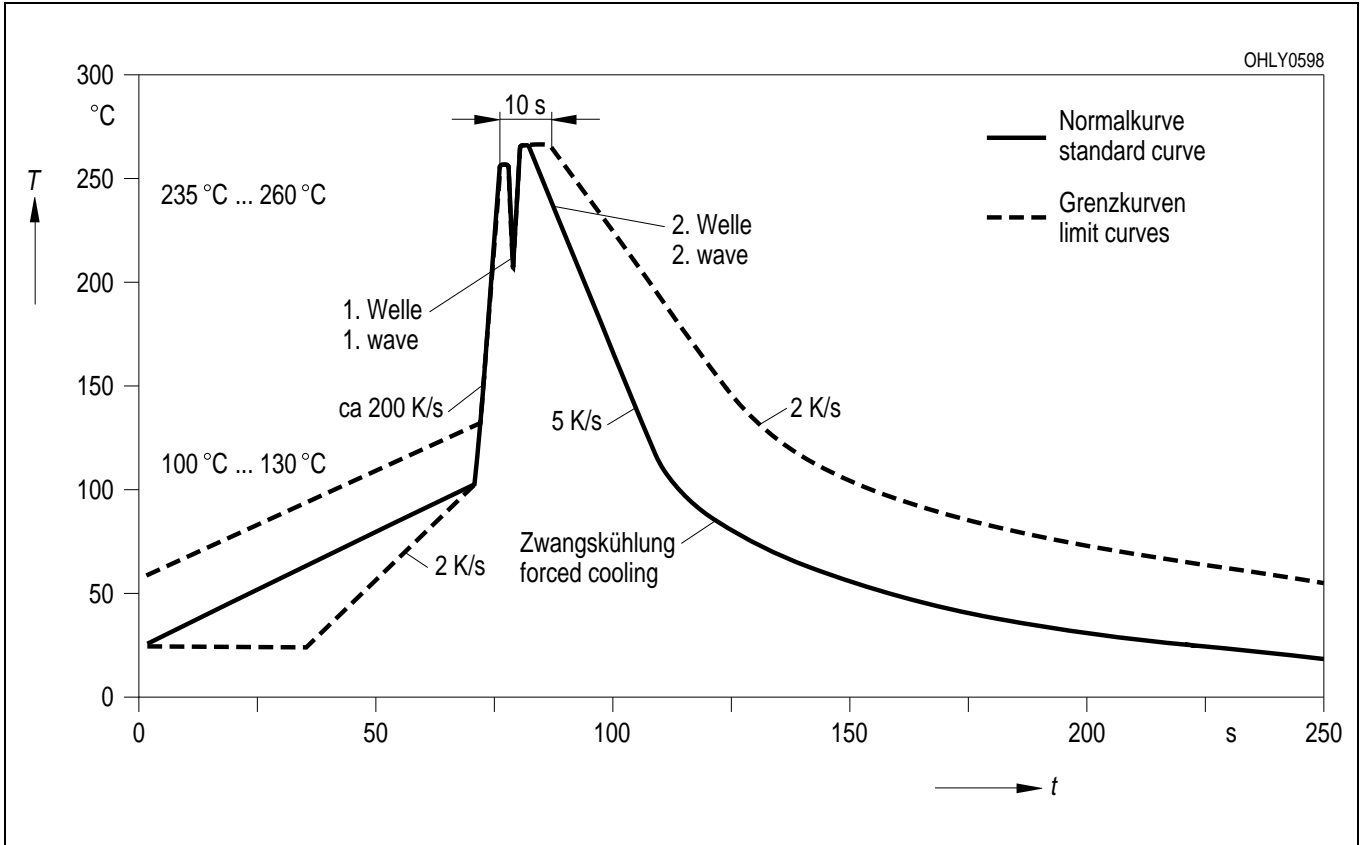
Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

**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

