

## Mini TOPLED® RG

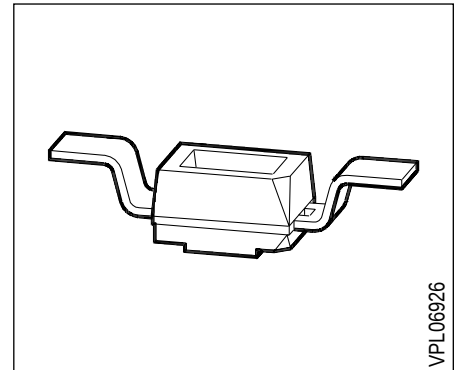
LS M770, LO M770, LY M770  
LG M770, LP M770

### Besondere Merkmale

- Gehäusefarbe: weiß
- als optischer Indikator einsetzbar
- zur Hinterleuchtung, Lichtleiter- und Linseneinkopplung
- für alle SMT-Bestück- und Löttechniken geeignet
- gegurtet (12-mm-Filmgurt)
- Störimpulsfest nach DIN 40839

### Features

- color of package: white
- for use as optical indicator
- for backlighting, optical coupling into light pipes and lenses
- suitable for all SMT assembly and soldering methods
- available taped on reel (12 mm tape)
- load dump resistant acc. to DIN 40839



| Typ                                                | Emissions-<br>farbe  | Farbe der<br>Lichtaustritts-<br>fläche | Lichtstärke                                                           | Lichtstrom                                                         | Bestellnummer                                                |
|----------------------------------------------------|----------------------|----------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------|
| Type                                               | Color of<br>Emission | Color of the<br>Light Emitting<br>Area | Luminous<br>Intensity<br>$I_F = 10 \text{ mA}$<br>$I_V \text{ (mcd)}$ | Luminous<br>Flux<br>$I_F = 10 \text{ mA}$<br>$\Phi_V \text{ (lm)}$ | Ordering Code                                                |
| LS M770-HK<br>LS M770-J<br>LS M770-K<br>LS M770-JM | super-red            | colorless clear                        | 2.5 ... 12.5<br>4.0 ... 8.0<br>6.3 ... 12.5<br>4.0 ... 32.0           | -<br>18 (typ.)<br>30 (typ.)<br>-                                   | Q62703-Q3326<br>Q62703-Q3327<br>Q62703-Q3328<br>Q62703-Q3329 |
| LO M770-HK<br>LO M770-J<br>LO M770-K<br>LO M770-JM | orange               | colorless clear                        | 2.5 ... 12.5<br>4.0 ... 8.0<br>6.3 ... 12.5<br>4.0 ... 32.0           | -<br>18 (typ.)<br>30 (typ.)<br>-                                   | Q62703-Q3330<br>Q62703-Q3331<br>Q62703-Q3332<br>Q62703-Q3333 |
| LY M770-HK<br>LY M770-J<br>LY M770-K<br>LY M770-JM | yellow               | colorless clear                        | 2.5 ... 12.5<br>4.0 ... 8.0<br>6.3 ... 12.5<br>4.0 ... 32.0           | -<br>18 (typ.)<br>30 (typ.)<br>-                                   | Q62703-Q3334<br>Q62703-Q3336<br>Q62703-Q3335<br>Q62703-Q3337 |
| LG M770-HK<br>LG M770-J<br>LG M770-K<br>LG M770-JM | green                | colorless clear                        | 2.5 ... 12.5<br>4.0 ... 8.0<br>6.3 ... 12.5<br>4.0 ... 32.0           | -<br>18 (typ.)<br>30 (typ.)<br>-                                   | Q62703-Q3338<br>Q62703-Q3339<br>Q62703-Q3340<br>Q62703-Q3341 |
| LP M770-FJ<br>LP M770-G<br>LP M770-H<br>LP M770-GK | pure green           | colorless clear                        | 1.0 ... 8.0<br>1.6 ... 3.2<br>2.5 ... 5.0<br>1.6 ... 12.5             | -<br>8 (typ.)<br>12 (typ.)<br>-                                    | Q62703-Q3342<br>Q62703-Q3343<br>Q62703-Q3344<br>Q62703-Q3345 |

Streuung der Lichtstärke in einer Verpackungseinheit  $I_{V \max} / I_{V \min} \leq 2.0$ .

Luminous intensity ratio in one packaging unit  $I_{V \max} / I_{V \min} \leq 2.0$ .

### Grenzwerte Maximum Ratings

| Bezeichnung<br>Parameter                                                                                                                                                                                    | Symbol<br>Symbol | Werte<br>Values | Einheit<br>Unit |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|-----------------|
| 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                                                                                                                                                                            | $I_F$            | 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               |
| Verlustleistung<br>Power dissipation                                                                                                                                                                        | $P_{tot}$        | 100             | mW              |
| Wärmewiderstand<br>Thermal resistance<br>Sperrschicht / Umgebung<br>Junction / air<br>Montage auf PC-board*) (Padgröße $\geq 16 \text{ mm}^2$ )<br>mounted on PC board*) (pad size $\geq 16 \text{ mm}^2$ ) | $R_{th JA}$      | 530             | K/W             |

\*) PC-board: FR4

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

### Characteristics

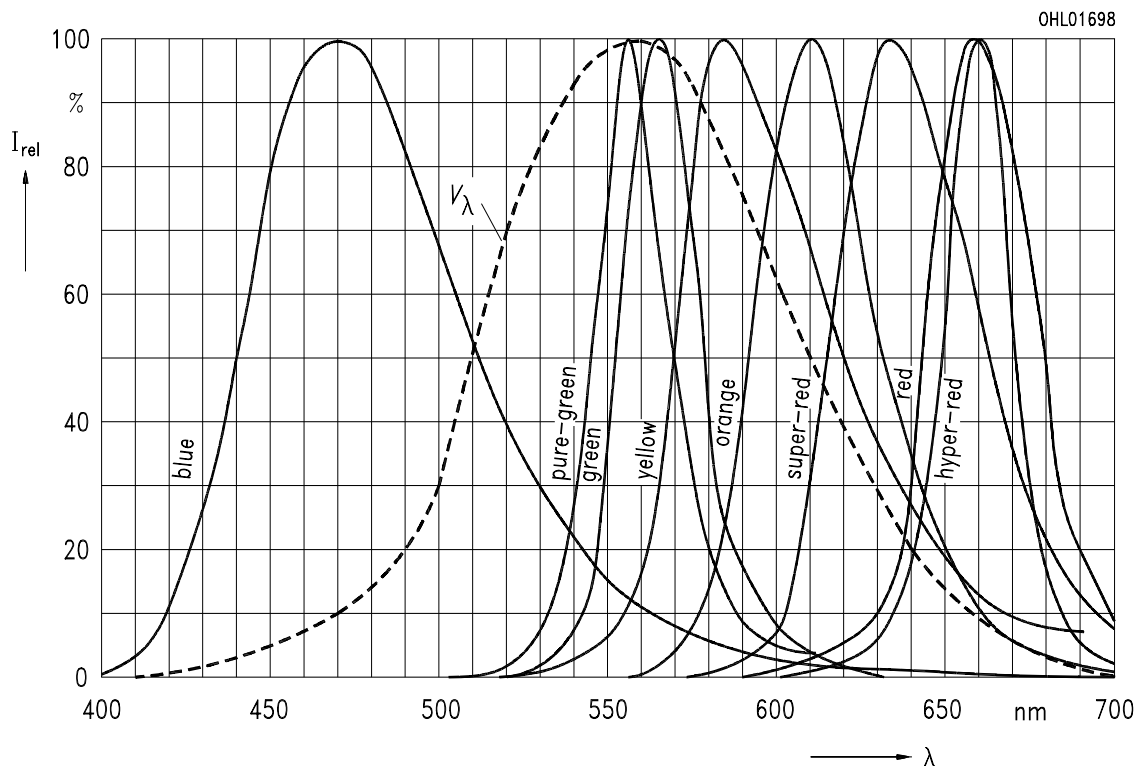
| Bezeichnung<br>Parameter                                                                                                                                                                  | Symbol<br>Symbol        | Werte<br>Values |            |            |            |            | Einheit<br>Unit                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------|------------|------------|------------|------------|--------------------------------|
|                                                                                                                                                                                           |                         | LS              | LO         | LY         | LG         | LP         |                                |
| Wellenlänge des emittierten Lichtes (typ.)<br>Wavelength at peak emission (typ.)<br>$I_F = 10\text{ mA}$                                                                                  | $\lambda_{\text{peak}}$ | 635             | 610        | 586        | 565        | 557        | nm                             |
| Dominantwellenlänge (typ.)<br>Dominant wavelength (typ.)<br>$I_F = 10\text{ mA}$                                                                                                          | $\lambda_{\text{dom}}$  | 628             | 605        | 590        | 570        | 560        | nm                             |
| Spektrale Bandbreite bei 50 % $I_{\text{rel max}}$ (typ.)<br>Spectral bandwidth at 50 % $I_{\text{rel max}}$ (typ.)<br>$I_F = 10\text{ mA}$                                               | $\Delta\lambda$         | 45              | 40         | 45         | 25         | 22         | nm                             |
| Abstrahlwinkel bei 50 % $I_v$ (Vollwinkel)<br>Viewing angle at 50 % $I_v$                                                                                                                 | $2\phi$                 | 120             | 120        | 120        | 120        | 120        | Grad<br>deg.                   |
| Durchlaßspannung (typ.)<br>Forward voltage (max.)<br>$I_F = 10\text{ mA}$                                                                                                                 | $V_F$<br>$V_F$          | 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 (typ.)<br>Reverse current (max.)<br>$V_R = 5\text{ V}$                                                                                                                         | $I_R$<br>$I_R$          | 0.01<br>10      | 0.01<br>10 | 0.01<br>10 | 0.01<br>10 | 0.01<br>10 | $\mu\text{A}$<br>$\mu\text{A}$ |
| Kapazität (typ.)<br>Capacitance<br>$V_R = 0\text{ V}$ , $f = 1\text{ MHz}$                                                                                                                | $C_0$                   | 12              | 8          | 10         | 15         | 15         | pF                             |
| Schaltzeiten:<br>Switching times:<br>$I_v$ from 10 % to 90 % (typ.)<br>$I_v$ from 90 % to 10 % (typ.)<br>$I_F = 100\text{ mA}$ , $t_p = 10\text{ }\mu\text{s}$ , $R_L = 50\text{ }\Omega$ | $t_r$<br>$t_f$          | 300<br>150      | 300<br>150 | 300<br>150 | 450<br>200 | 450<br>200 | ns<br>ns                       |

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

Relative spectral emission

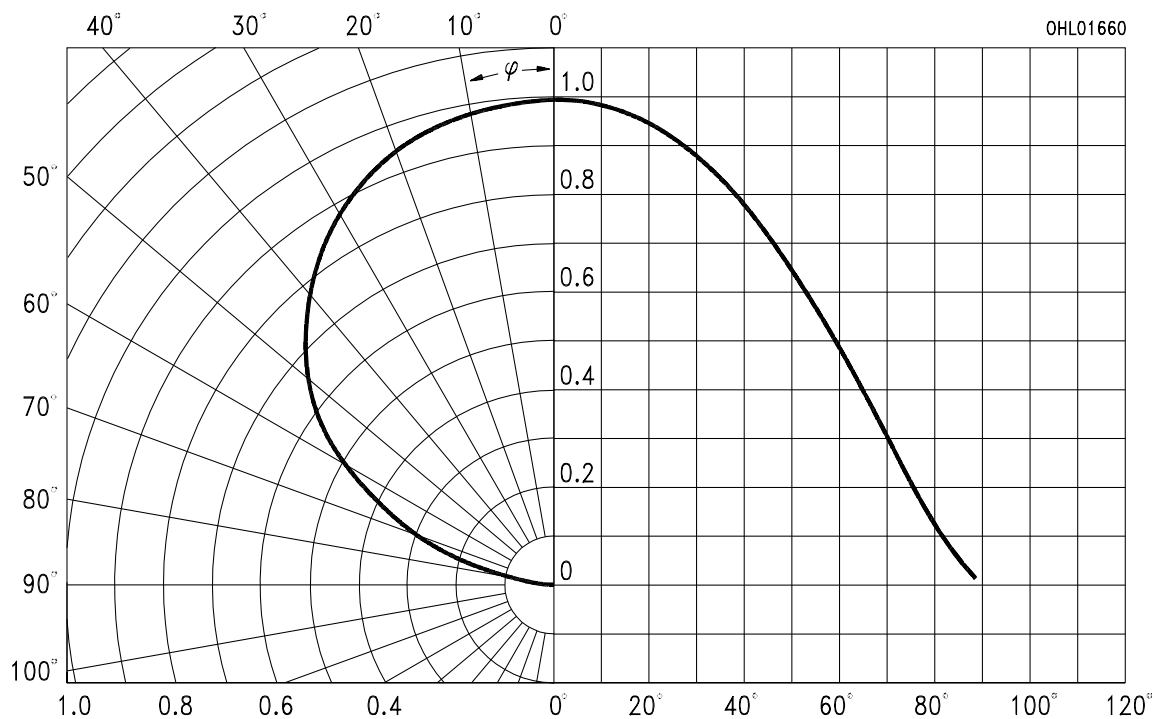
$V(\lambda)$  = spektrale Augenempfindlichkeit

Standard eye response curve



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

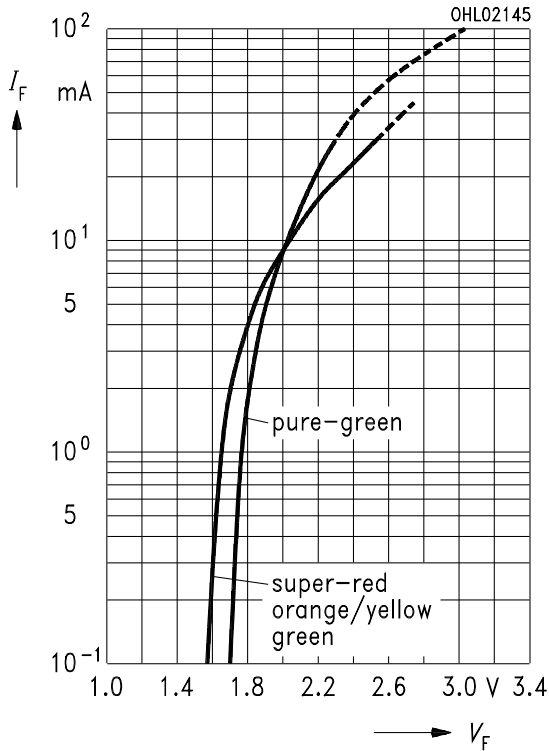
Radiation characteristic



**Durchlaßstrom**  $I_F = f(V_F)$

**Forward current**

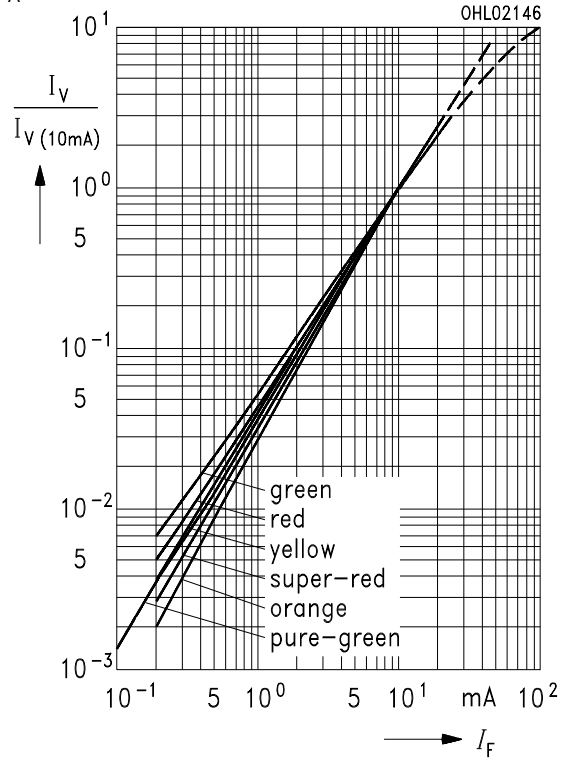
$T_A = 25^\circ\text{C}$



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

**Relative luminous intensity**

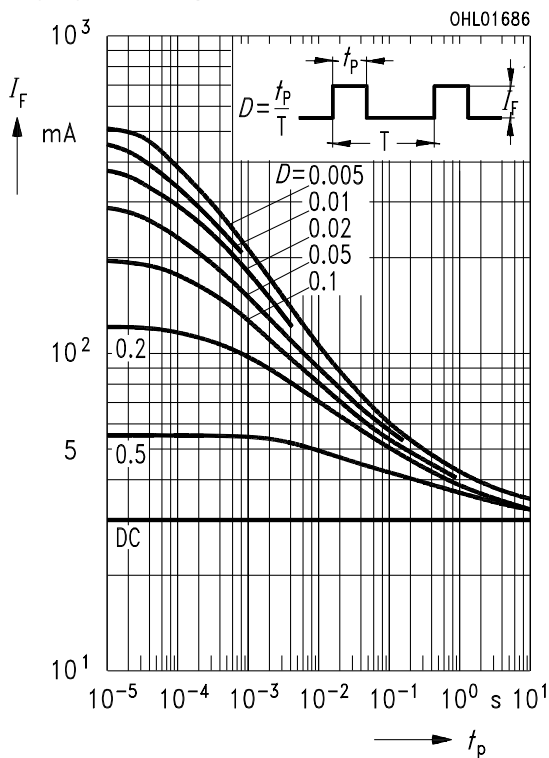
$T_A = 25^\circ\text{C}$



**Zulässige Impulsbelastbarkeit**  $I_F = f(t_p)$

**Permissible pulse handling capability**

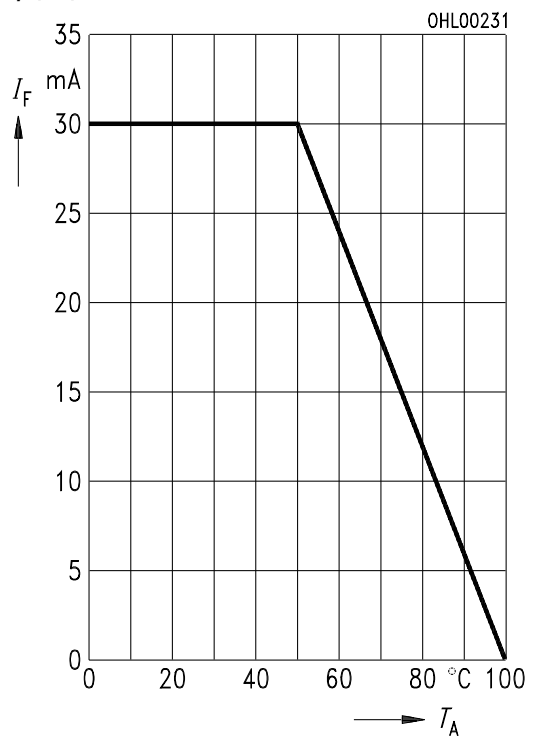
Duty cycle  $D = \text{parameter}$ ,  $T_A = 25^\circ\text{C}$



**Maximal zulässiger Durchlaßstrom**

**Max. permissible forward current**

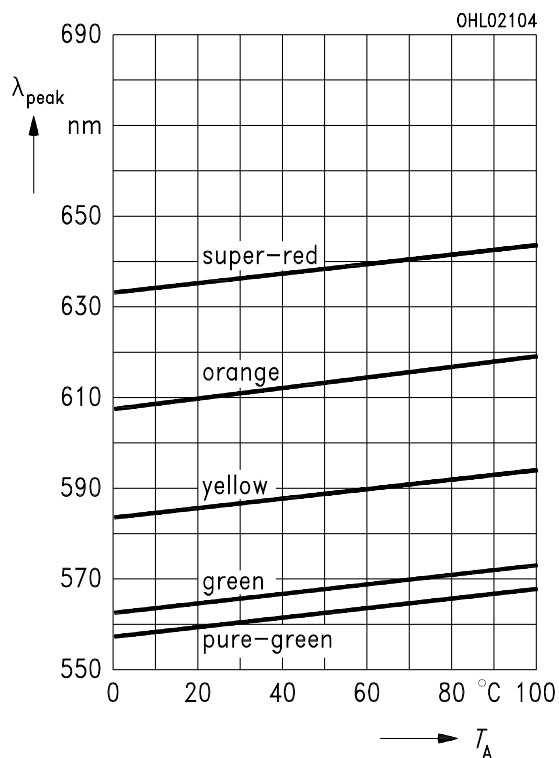
$I_F = f(T_A)$



**Wellenlänge der Strahlung  $\lambda_{\text{peak}} = f(T_A)$**

**Wavelength at peak emission**

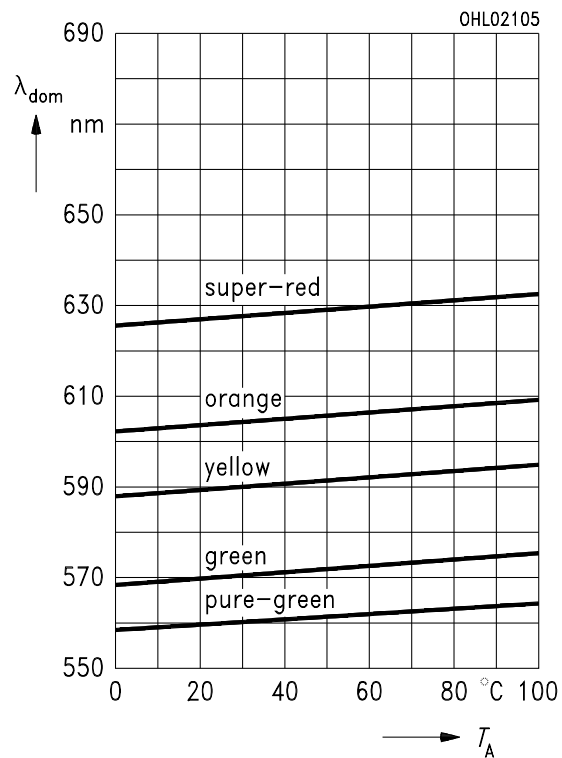
$I_F = 10 \text{ mA}$



**Dominantwellenlänge  $\lambda_{\text{dom}} = f(T_A)$**

**Dominant wavelength**

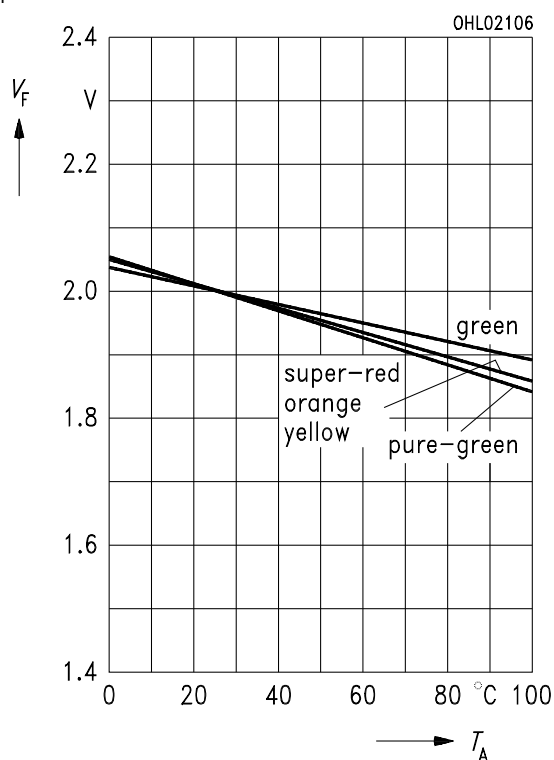
$I_F = 10 \text{ mA}$



**Durchlaßspannung  $V_F = f(T_A)$**

**Forward voltage**

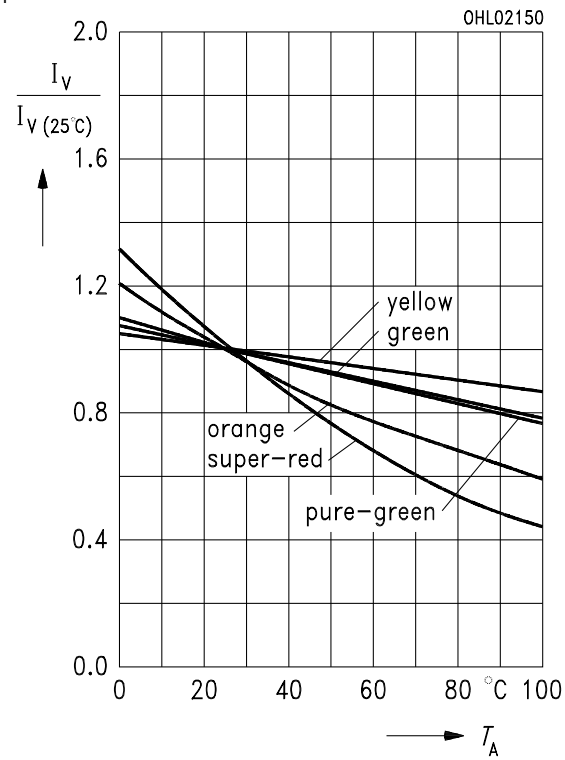
$I_F = 10 \text{ mA}$



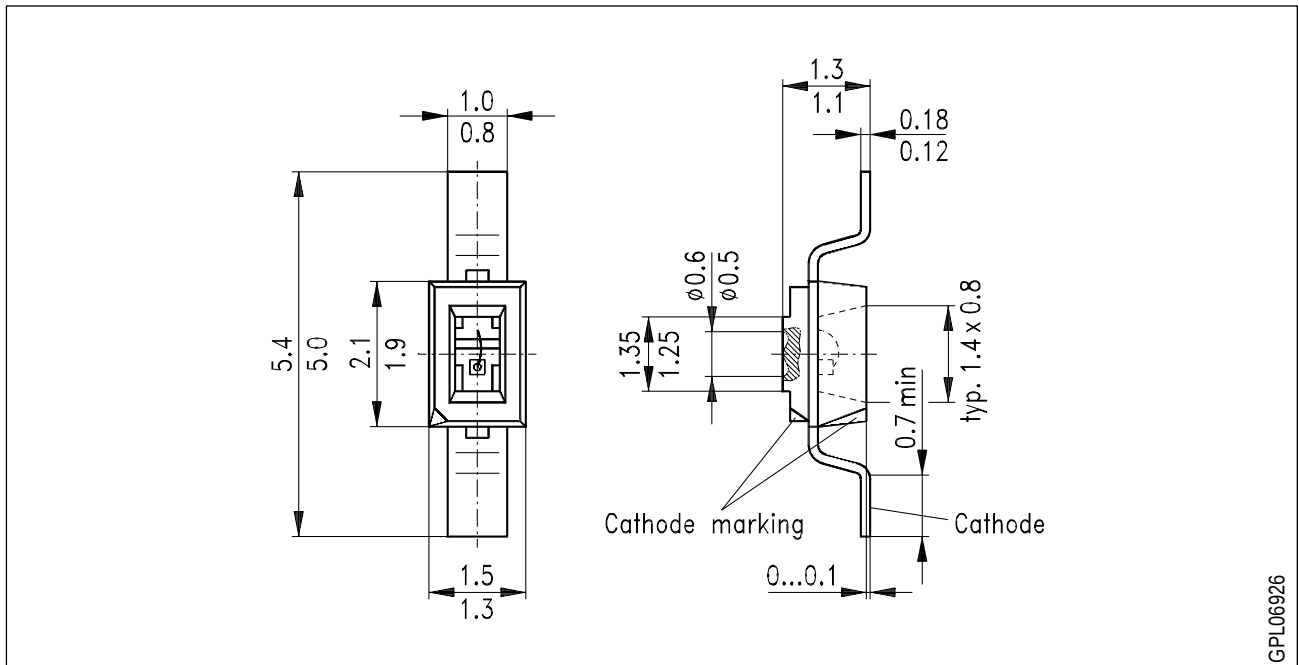
**Relative Lichtstärke  $I_V / I_{V(25^\circ\text{C})} = f(T_A)$**

**Relative luminous intensity**

$I_F = 10 \text{ mA}$



**Maßzeichnung** (Maße in mm, wenn nicht anders angegeben)  
**Package Outlines** (Dimensions in mm, unless otherwise specified)



**Kathodenkennung:** abgeschrägte Ecke  
**Cathode mark:** bevelled edge