

## Mini SIDELED®

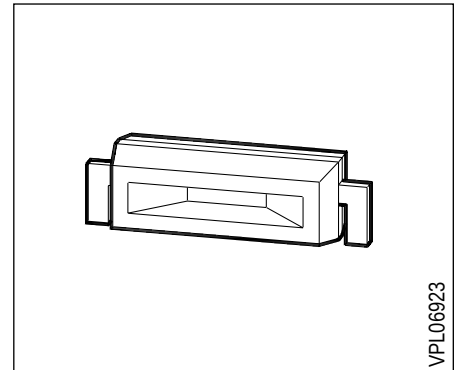
LS C870, LO C870, LY C870  
LG C870, LP C870

### 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>$\Phi_V \text{ (mlm)}$ | Ordering Code |
| LS C870-HL | super-red            | colorless clear                        | 2.5 ... 20.0                                                          | -                                                                   | Q62703-Q3350  |
| LS C870-J  |                      |                                        | 4.0 ... 8.0                                                           | 18 (typ.)                                                           | Q62703-Q3351  |
| LS C870-K  |                      |                                        | 6.3 ... 12.5                                                          | 30 (typ.)                                                           | Q62703-Q3352  |
| LS C870-L  |                      |                                        | 10.0 ... 20.0                                                         | 45 (typ.)                                                           | Q62703-Q3842  |
| LS C870-JM |                      |                                        | 4.0 ... 32.0                                                          | -                                                                   | Q62703-Q3353  |
| LO C870-HL | orange               | colorless clear                        | 2.5 ... 20.0                                                          | -                                                                   | Q62703-Q3354  |
| LO C870-J  |                      |                                        | 4.0 ... 8.0                                                           | 18 (typ.)                                                           | Q62703-Q3355  |
| LO C870-K  |                      |                                        | 6.3 ... 12.5                                                          | 30 (typ.)                                                           | Q62703-Q3356  |
| LO C870-L  |                      |                                        | 10.0 ... 20.0                                                         | 45 (typ.)                                                           | Q62703-Q3843  |
| LO C870-JM |                      |                                        | 4.0 ... 32.0                                                          | -                                                                   | Q62703-Q3357  |
| LY C870-HL | yellow               | colorless clear                        | 2.5 ... 20.0                                                          | -                                                                   | Q62703-Q3358  |
| LY C870-J  |                      |                                        | 4.0 ... 8.0                                                           | 18 (typ.)                                                           | Q62703-Q3359  |
| LY C870-K  |                      |                                        | 6.3 ... 12.5                                                          | 30 (typ.)                                                           | Q62703-Q3360  |
| LY C870-L  |                      |                                        | 10.0 ... 20.0                                                         | 45 (typ.)                                                           | Q62703-Q3845  |
| LY C870-JM |                      |                                        | 4.0 ... 32.0                                                          | -                                                                   | Q62703-Q3361  |
| LG C870-HL | green                | colorless clear                        | 2.5 ... 20.0                                                          | -                                                                   | Q62703-Q3362  |
| LG C870-J  |                      |                                        | 4.0 ... 8.0                                                           | 18 (typ.)                                                           | Q62703-Q3363  |
| LG C870-K  |                      |                                        | 6.3 ... 12.5                                                          | 30 (typ.)                                                           | Q62703-Q3364  |
| LG C870-L  |                      |                                        | 10.0 ... 20.0                                                         | 45 (typ.)                                                           | Q62703-Q3655  |
| LG C870-JM |                      |                                        | 4.0 ... 32.0                                                          | -                                                                   | Q62703-Q3365  |
| LP C870-FJ | pure green           | colorless clear                        | 1.0 ... 8.0                                                           | -                                                                   | Q62703-Q3366  |
| LP C870-G  |                      |                                        | 1.6 ... 3.2                                                           | 8 (typ.)                                                            | Q62703-Q3367  |
| LP C870-H  |                      |                                        | 2.5 ... 5.0                                                           | 12 (typ.)                                                           | Q62703-Q3368  |
| LP C870-GK |                      |                                        | 1.6 ... 12.5                                                          | -                                                                   | Q62703-Q3369  |

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

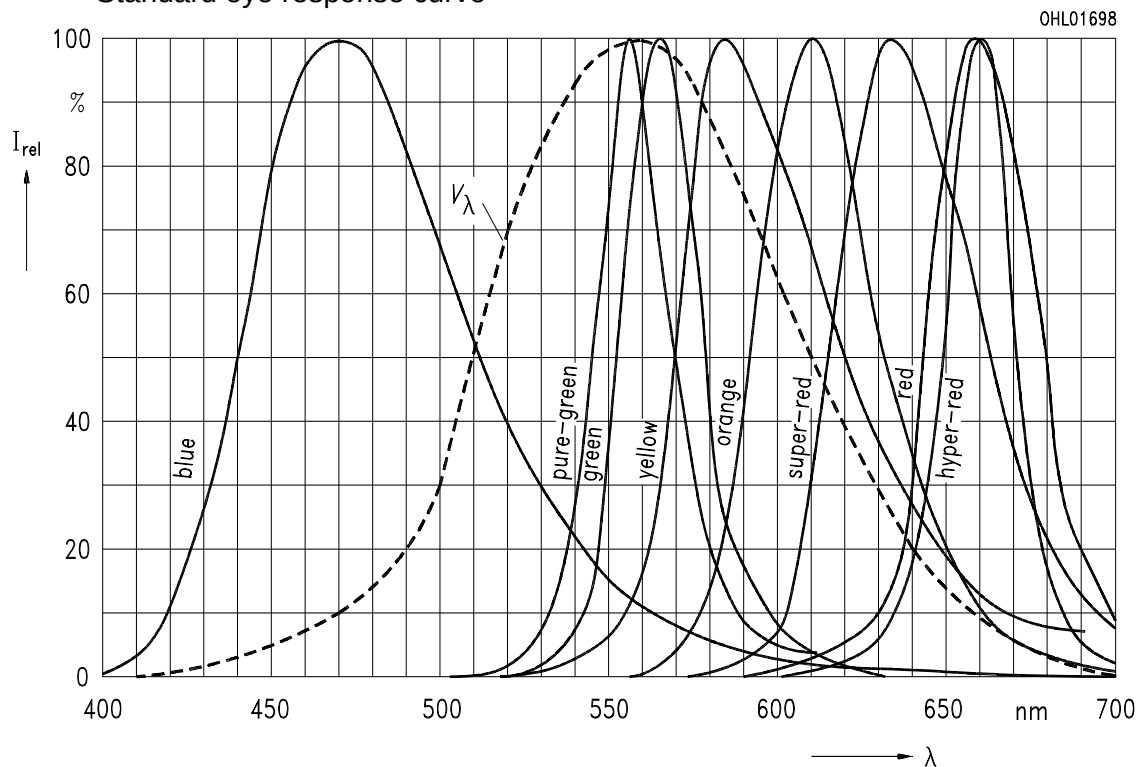
| Bezeichnung<br>Parameter                                                                                                                                                                  | Symbol<br>Symbol        | Werte<br>Values |            |            |            |            | Einheit<br>Unit                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------|------------|------------|------------|------------|--------------------------------|
|                                                                                                                                                                                           |                         | 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

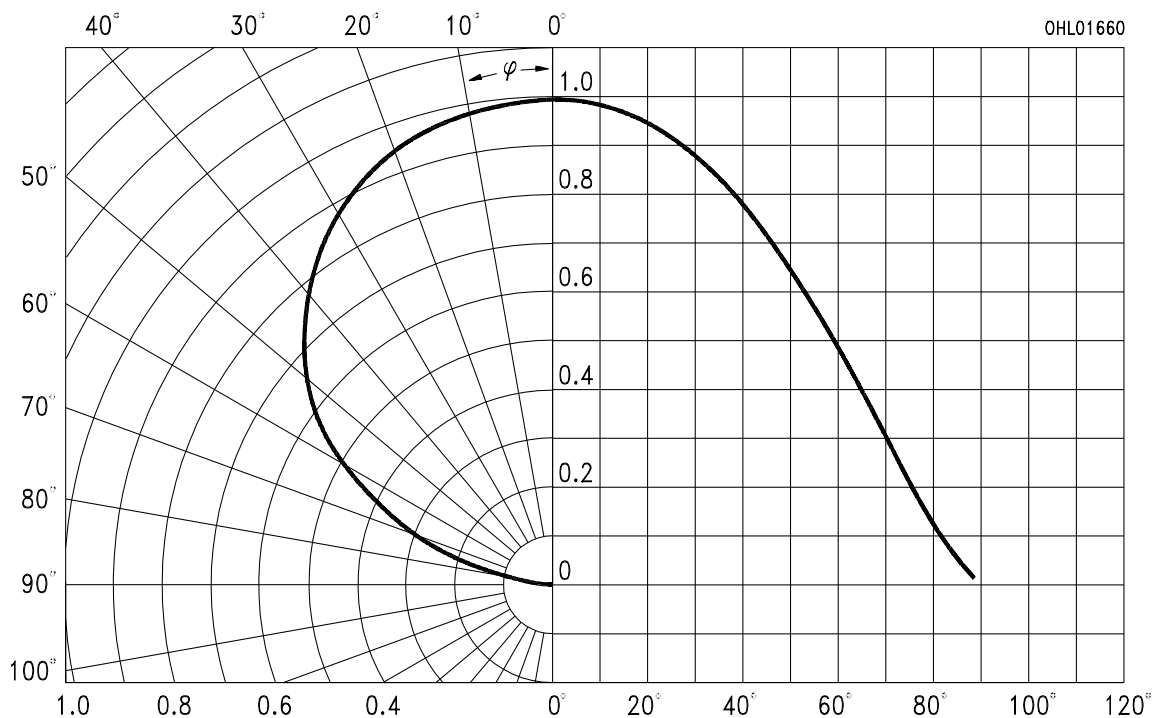
$V(\lambda)$  = spektrale Augenempfindlichkeit

Standard eye response curve



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

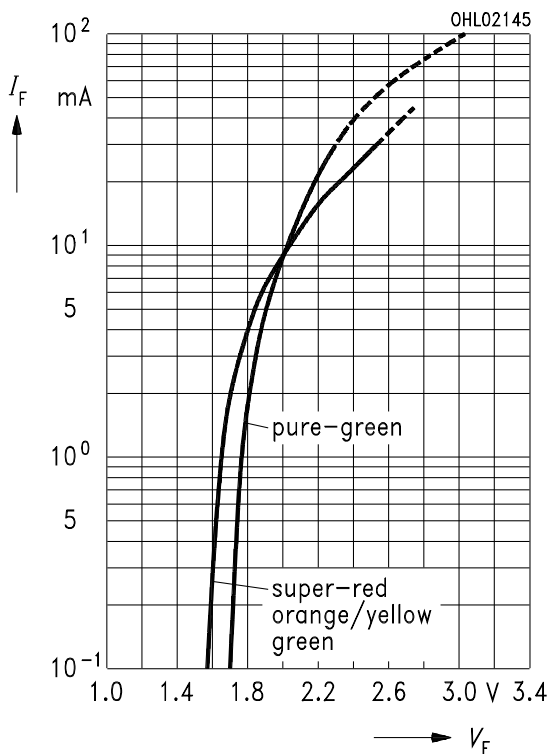
Radiation characteristic



**Durchlaßstrom  $I_F = f(V_F)$**

**Forward current**

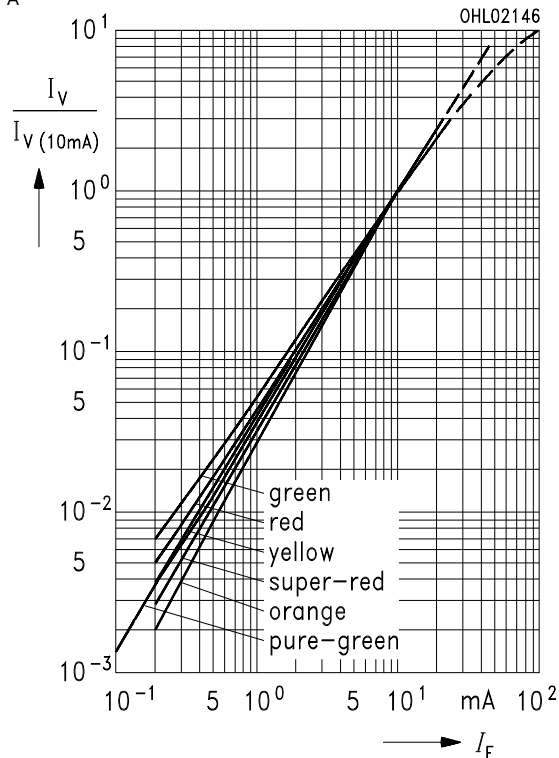
$T_A = 25^\circ\text{C}$



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

**Relative luminous intensity**

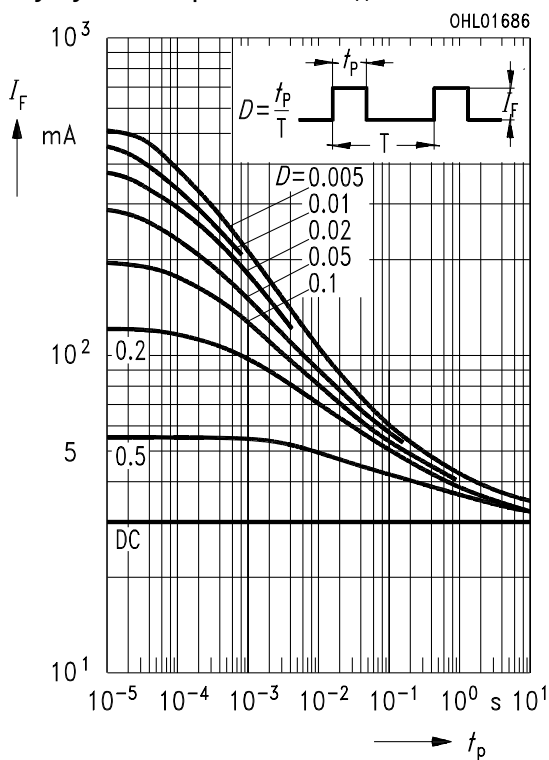
$T_A = 25^\circ\text{C}$



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

**Permissible pulse handling capability**

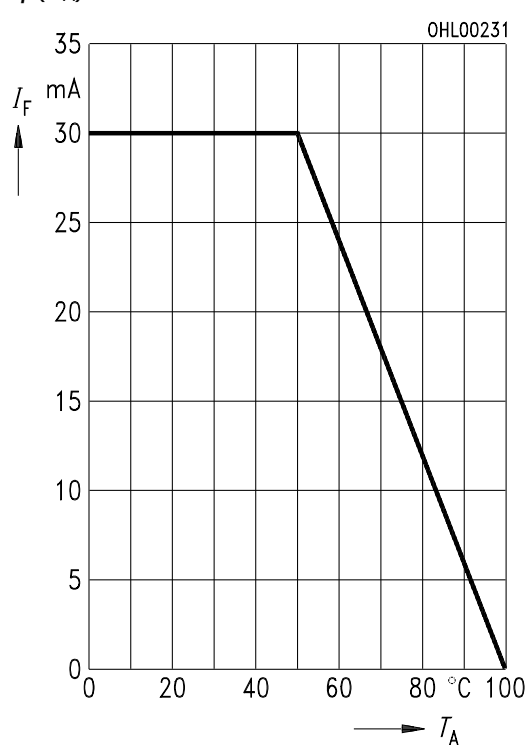
Duty cycle  $D = \text{parameter}$ ,  $T_A = 25^\circ\text{C}$



**Maximal zulässiger Durchlaßstrom**

**Max. permissible forward current**

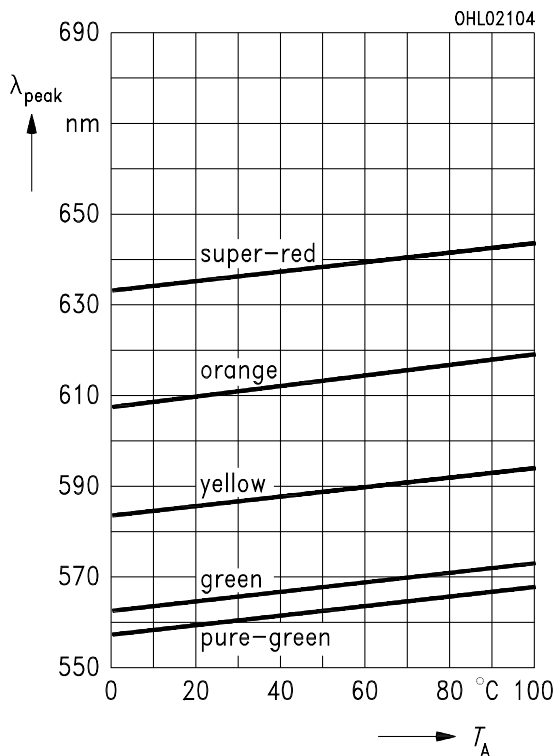
$I_F = f(T_A)$



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

**Wavelength at peak emission**

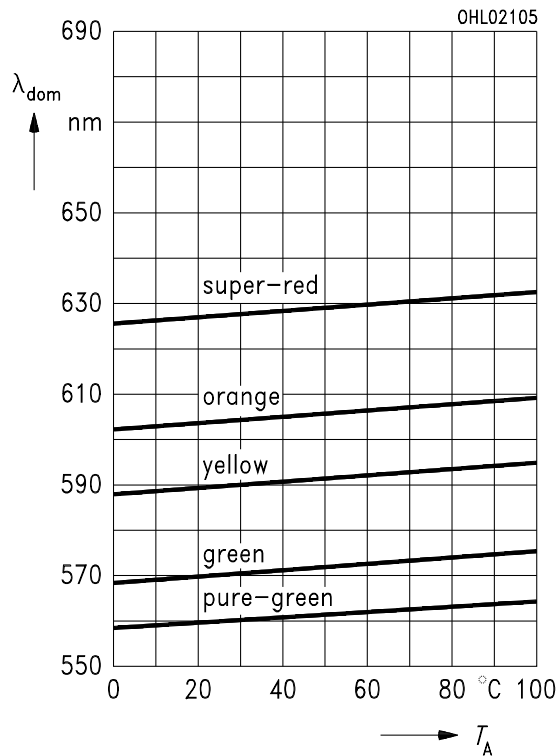
$I_F = 10 \text{ mA}$



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

**Dominant wavelength**

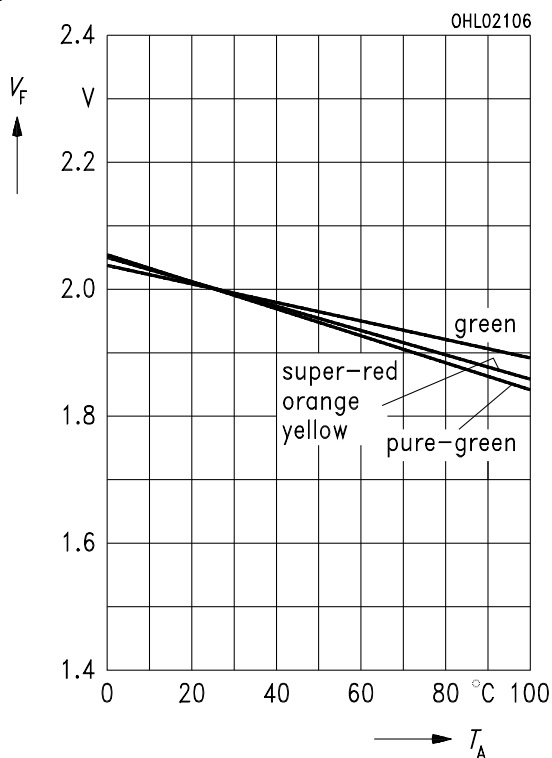
$I_F = 10 \text{ mA}$



**Durchlaßspannung  $V_F = f(T_A)$**

**Forward voltage**

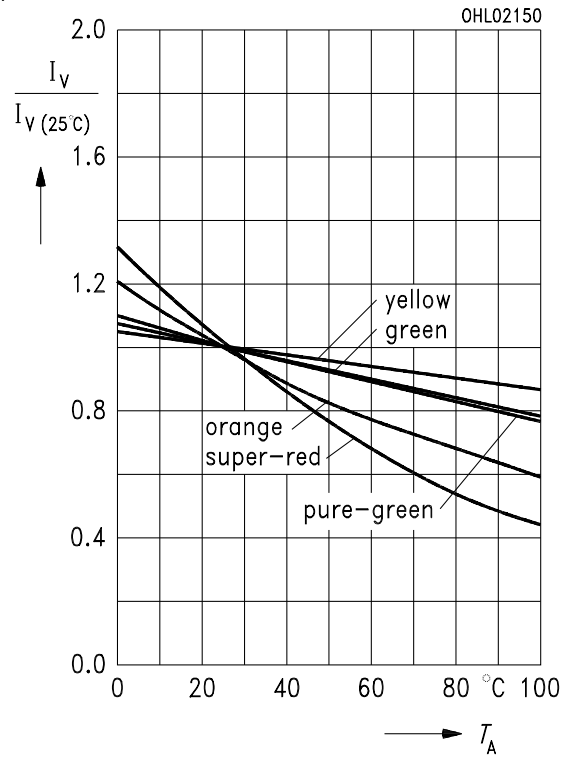
$I_F = 10 \text{ mA}$



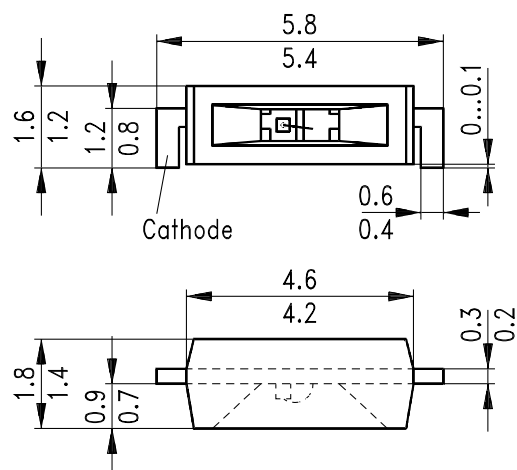
**Relative Lichtstärke  $I_V / I_{V(25^\circ\text{C})} = f(T_A)$**

**Relative luminous intensity**

$I_F = 10 \text{ mA}$



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



GPL06930