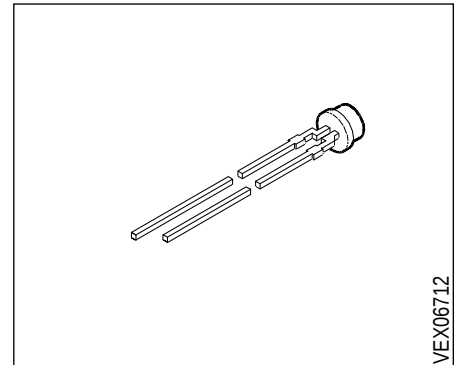


## Multi ARGUS® LED 3 mm (T1) LED, Non Diffused

LSG K370, LSP K370,  
LOP K370, LOG K370

### Features

- farbloses, klares Gehäuse
- Kunststoffgehäuse mit spezieller Formgebung
- antiparallel geschaltete Leuchtdiodenchips
- hohe Signalwirkung durch Farbwechsel der LED möglich
- bei Einsatz eines äußeren Reflektors zur Hintergrundbeleuchtung von Leuchtfeldern und LCD-Anzeigen geeignet
- zur Direkteinkopplung in Lichtleiter geeignet
- gleichmäßige Ausleuchtung einer Streuscheibe (Weißdruck) vor dem äußeren Reflektor
- beide Farben getrennt ansteuerbar
- Lötspieße mit Aufsetzebene
- gegurtet lieferbar
- Störimpulsfest nach DIN 40839



### Features

- colorless, clear package
- plastic package with a special design
- antiparallel chip
- high signal efficiency possible by color change of the LED
- in connection with an additional, custom built reflector suitable for backlighting of display panels
- for optical coupling into light pipes
- uniform illumination of a diffuser screen in front of the custom built reflector
- both colors can be controlled separately
- solder leads with stand-off
- available taped on reel
- load dump resistant acc. to DIN 40839

| Typ<br>Type                                                          | Emissionsfarbe<br>Color of<br>emission | Gehäusefarbe<br>Color of<br>package | Lichtstrom<br>Luminous Flux<br>$I_F = 15 \text{ mA}$<br>$\Phi_V \text{ (mlm)}$ | Bestellnummer<br>Ordering Code                                               |
|----------------------------------------------------------------------|----------------------------------------|-------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| LSG K370-LP<br>LSG K370-N<br>LSG K370-P<br>LSG K370-NR               | super-red / green                      | colorless clear                     | 10.0 ... 80<br>25.0 ... 50<br>40.0 ... 80<br>25.0 ... 200                      | Q62703-Q2298<br>Q62703-Q2495<br>Q62703-Q2496<br>Q62703-Q2664                 |
| LSP K370-KN<br>LSP K370-M<br>LSP K370-N<br>LSP K370-P<br>LSP K370-MQ | super-red /<br>pure green              | colorless clear                     | 6.3 ... 50<br>16.0 ... 32<br>25.0 ... 50<br>40.0 ... 80<br>16.0 ... 125        | Q62703-Q2379<br>Q62703-Q2665<br>Q62703-Q2666<br>Q62703-Q3230<br>Q62703-Q3231 |
| LOP K370-KN<br>LOP K370-M<br>LOP K370-N<br>LOP K370-MQ               | orange /<br>pure green                 | colorless clear                     | 6.3 ... 50<br>16.0 ... 32<br>25.0 ... 50<br>16.0 ... 125                       | Q62703-Q2529<br>Q62703-Q2668<br>Q62703-Q2669<br>Q62703-Q2670                 |
| LOG K370-LP<br>LOG K370-N<br>LOG K370-P<br>LOG K370-NR               | orange / green                         | colorless clear                     | 10.0 ... 80<br>25.0 ... 50<br>40.0 ... 80<br>25.0 ... 200                      | Q62703-Q2769<br>Q62703-Q2770<br>Q62703-Q2772<br>Q62703-Q2771                 |

Streuung des Lichtstroms in einer Verpackungseinheit  $\Phi_{V \max} / \Phi_{V \min} \leq 2.0$ .<sup>1)</sup>

Streuung des Lichtstroms in einer LED  $\Phi_{V \max} / \Phi_{V \min} \leq 3.0$  (L\*G K370),  $\leq 4.0$  (L\*P K370).

<sup>1)</sup> Bei MULTILED® bestimmt die Helligkeit des jeweils dunkleren Chips in einem Gehäuse die Helligkeitsgruppe der LED.

Luminous flux ratio in one packaging unit  $\Phi_{V \max} / \Phi_{V \min} \leq 2.0$ .<sup>1)</sup>

Luminous flux ratio in one LED  $\Phi_{V \max} / \Phi_{V \min} \leq 3.0$  (L\*G K370),  $\leq 4.0$  (L\*P K370).

<sup>1)</sup> In case of MULTILED®, the brightness of the darker chip in one package determines the brightness group of the LED.

### Grenzwerte<sup>2)</sup>

### Maximum Ratings<sup>2)</sup>

| Bezeichnung<br>Parameter                                                       | Symbol<br>Symbol | Werte<br>Values |                | Einheit<br>Unit |
|--------------------------------------------------------------------------------|------------------|-----------------|----------------|-----------------|
|                                                                                |                  | LS, LO, LG      | LP             |                 |
| Betriebstemperatur<br>Operating temperature range                              | $T_{op}$         | – 55 ... + 100  | – 55 ... + 100 | °C              |
| Lagertemperatur<br>Storage temperature range                                   | $T_{stg}$        | – 55 ... + 100  | – 55 ... + 100 | °C              |
| Sperrschichttemperatur<br>Junction temperature                                 | $T_j$            | + 100           | + 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             | 0.5            | A               |
| Verlustleistung<br>Power dissipation<br>$T_A \leq 25 \text{ °C}$               | $P_{tot}$        | 140             | 100            | mW              |
| Wärmewiderstand<br>Thermal resistance<br>Sperrschicht / Luft<br>Junction / air | $R_{th JA}$      | 400             | 400            | K/W             |

<sup>2)</sup> Die angegebenen Grenzdaten gelten für den Chip, für den sie angegeben sind, unabhängig vom Betriebszustand des anderen.

<sup>2)</sup> The stated maximum ratings refer to the specified chip regardless of the other one's operating status.

Kennwerte ( $T_A = 25^\circ\text{C}$ )

### Characteristics

| Bezeichnung<br>Parameter                                                                                                                                                            | Symbol<br>Symbol        | Werte<br>Values |            |            |            | Einheit<br>Unit |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------|------------|------------|------------|-----------------|
|                                                                                                                                                                                     |                         | LS              | LO         | LG         | LP         |                 |
| Wellenlänge des emittierten Lichtes (typ.)<br>Wavelength at peak emission (typ.)<br>$I_F = 20\text{ mA}$                                                                            | $\lambda_{\text{peak}}$ | 635             | 610        | 565        | 557        | nm              |
| Dominantwellenlänge (typ.)<br>Dominant wavelength (typ.)<br>$I_F = 20\text{ mA}$                                                                                                    | $\lambda_{\text{dom}}$  | 628             | 605        | 570        | 560        | nm              |
| Spektrale Bandbreite bei 50 % $\Phi_{\text{rel max}}$ (typ.)<br>Spectral bandwidth at 50 % $\Phi_{\text{rel max}}$ (typ.)<br>$I_F = 20\text{ mA}$                                   | $\Delta\lambda$         | 45              | 40         | 25         | 25         | nm              |
| Durchlaßspannung (typ.)<br>Forward voltage (max.)<br>$I_F = 15\text{ mA}$                                                                                                           | $V_F$<br>$V_F$          | 2.1<br>2.6      | 2.1<br>2.6 | 2.1<br>2.6 | 2.1<br>2.6 | V<br>V          |
| Kapazität <sup>3)</sup> (typ.)<br>Capacitance <sup>3)</sup><br>$V_R = 0\text{ V}, f = 1\text{ MHz}$                                                                                 | $C_O$                   | 12              | 8          | 8          | 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 | ns<br>ns        |

<sup>3)</sup> Die Gesamtkapazität ergibt sich aus der Summe der Einzelkapazitäten.

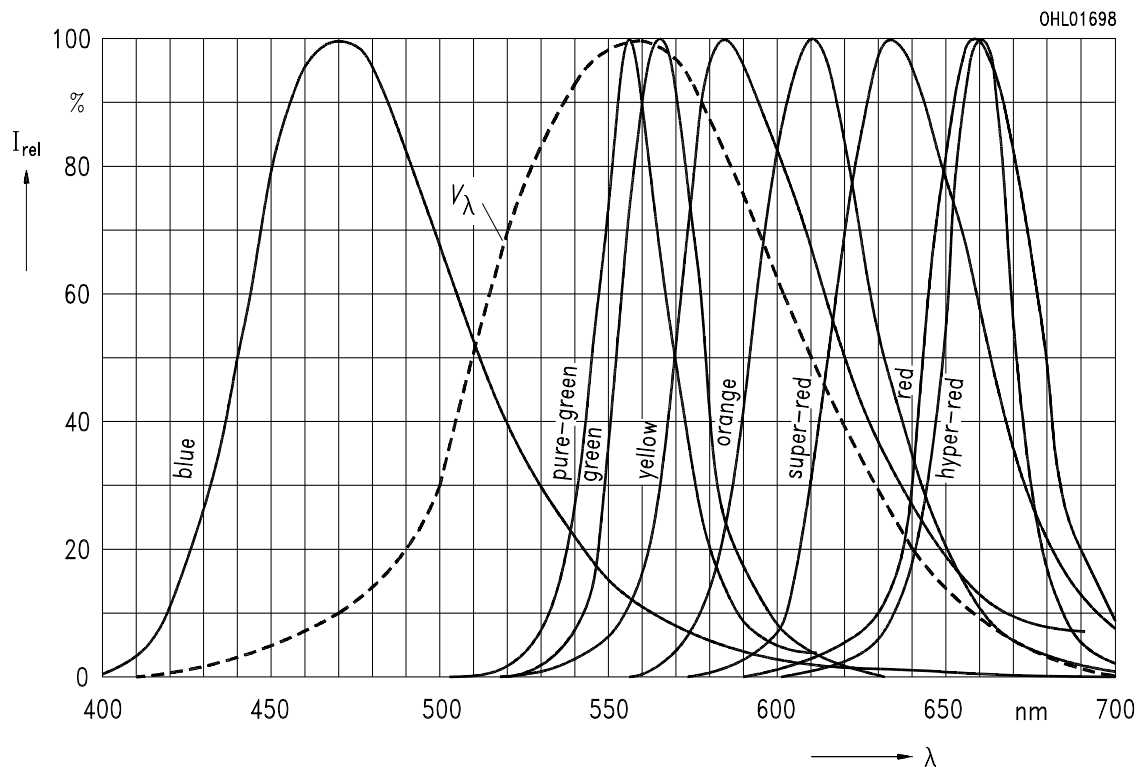
<sup>3)</sup> The total capacitance results from the sum of the single capacitances.

Relative spektrale Emission  $\Phi_{\text{rel}} = f(\lambda)$ ,  $T_A = 25^\circ\text{C}$ ,  $I_F = 20\text{ mA}$

Relative spectral emission

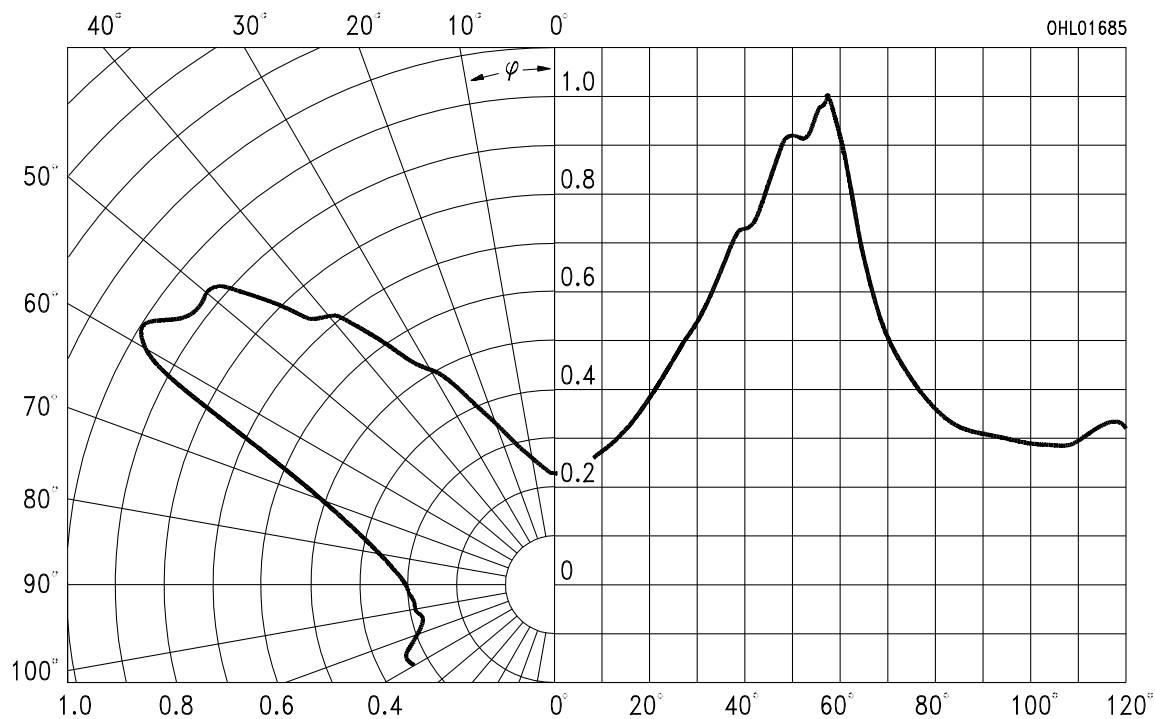
$V(\lambda)$  = spektrale Augenempfindlichkeit

Standard eye response curve



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

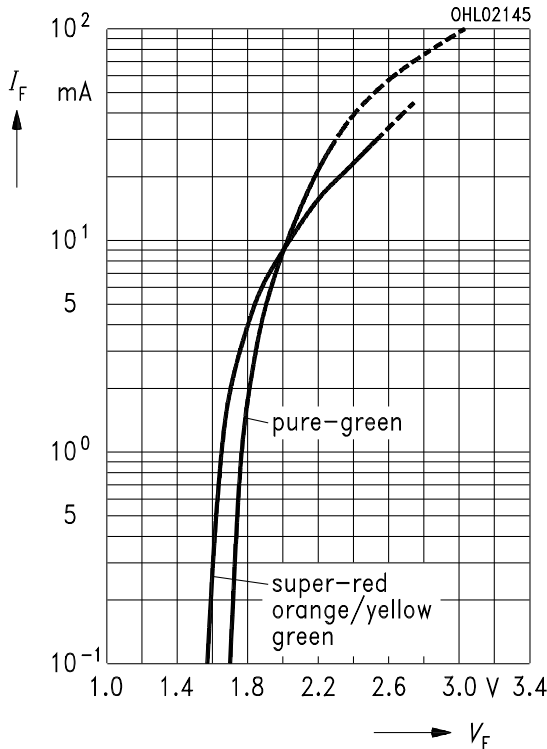
Radiation characteristic



**Durchlaßstrom  $I_F = f(V_F)$**

**Forward current**

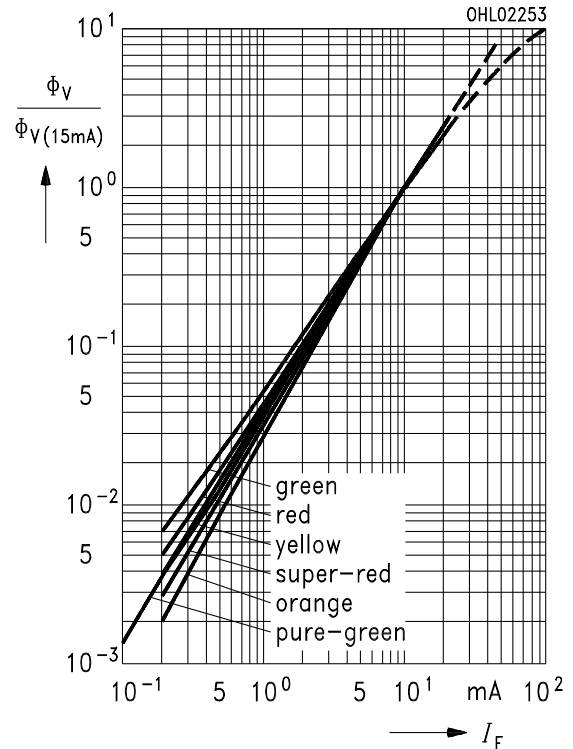
$T_A = 25^\circ\text{C}$



**Relativer Lichtstrom  $\Phi_V / \Phi_{V(15\text{ mA})} = f(I_F)$**

**Relative luminous flux**

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

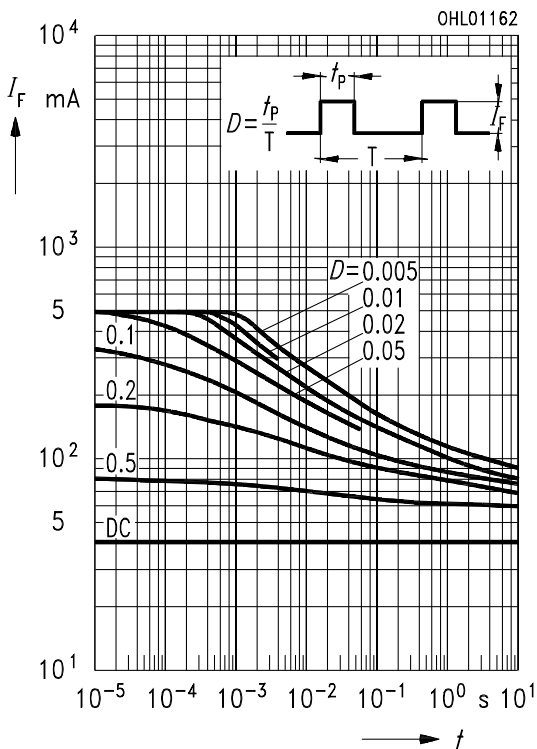


**Zulässige Impulsbelastbarkeit  $I_F = f(t_p)$**

**Permissible pulse handling capability**

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

**LS, LO, LG**

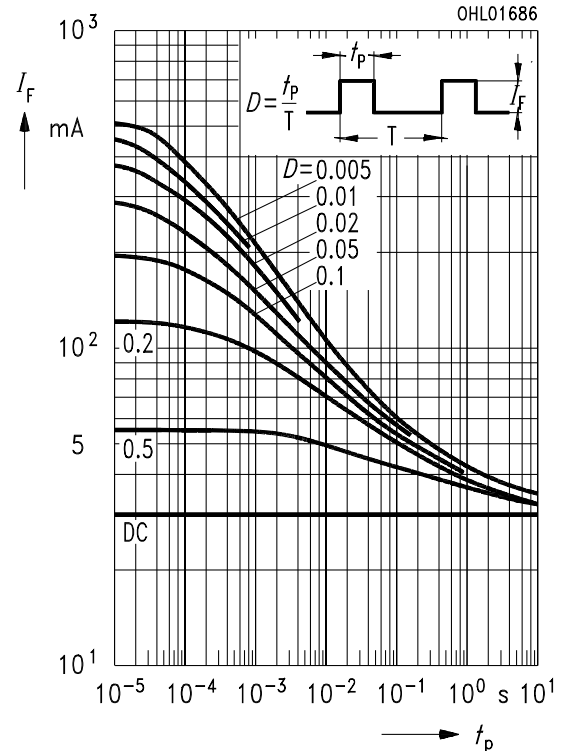


**Zulässige Impulsbelastbarkeit  $I_F = f(t_p)$**

**Permissible pulse handling capability**

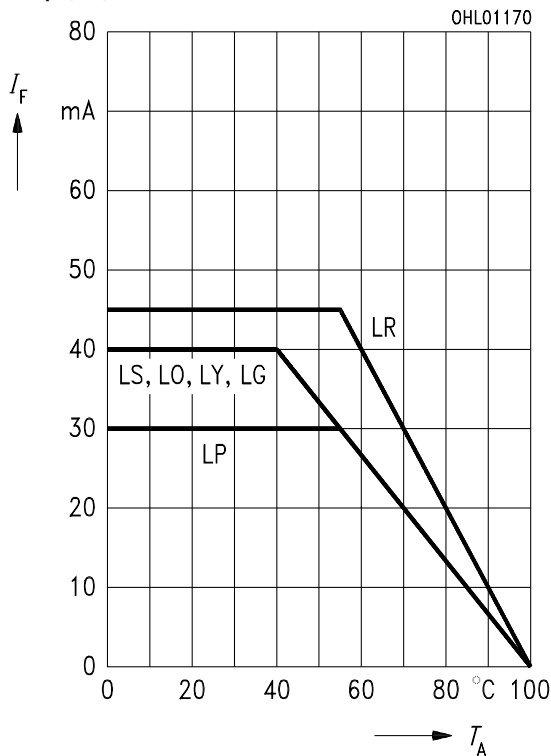
Duty cycle  $D = \text{parameter}$ ,  $T_A = 25^\circ\text{C}$

**LP**



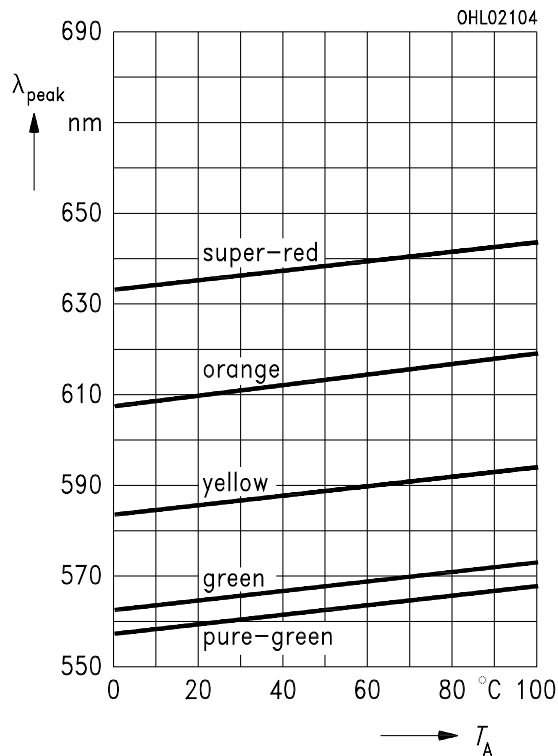
## Maximal zulässiger Durchlaßstrom Max. permissible forward current

$$I_F = f(T_A)$$



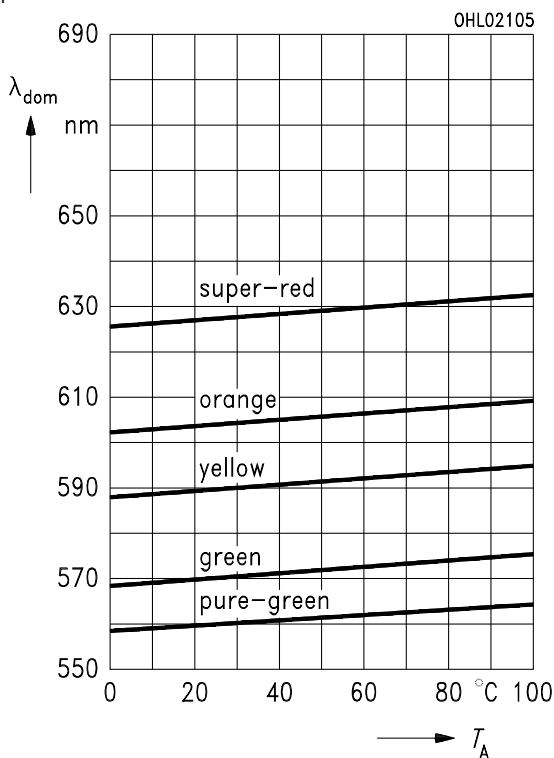
## Wellenlänge der Strahlung $\lambda_{\text{peak}} = f(T_A)$ Wavelength at peak emission

$$I_F = 20 \text{ mA}$$



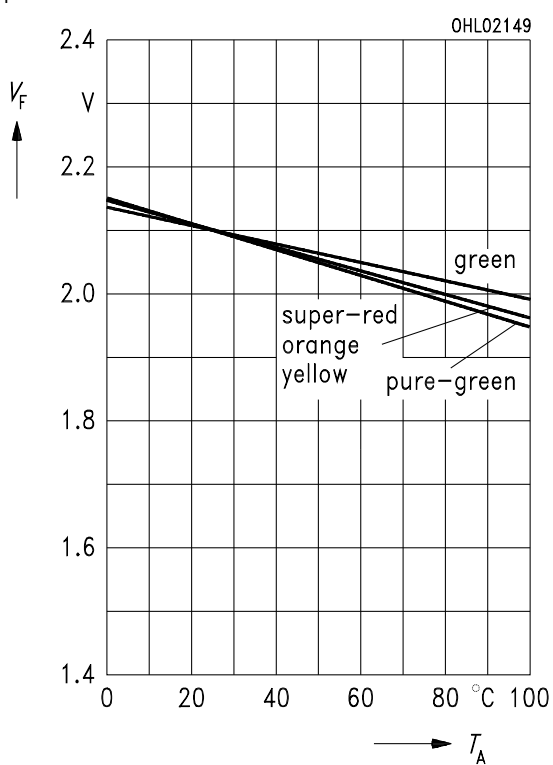
## Dominantwellenlänge $\lambda_{\text{dom}} = f(T_A)$ Dominant wavelength

$$I_F = 20 \text{ mA}$$



## Durchlaßspannung $V_F = f(T_A)$ Forward voltage

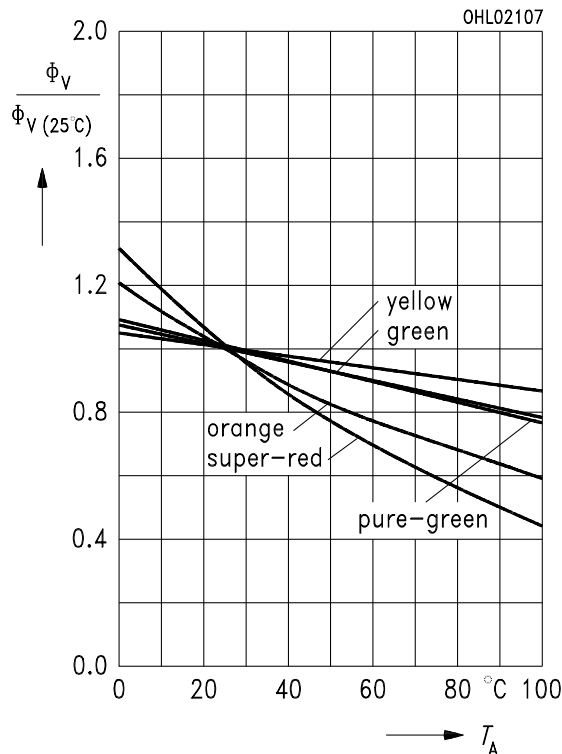
$$I_F = 15 \text{ mA}$$



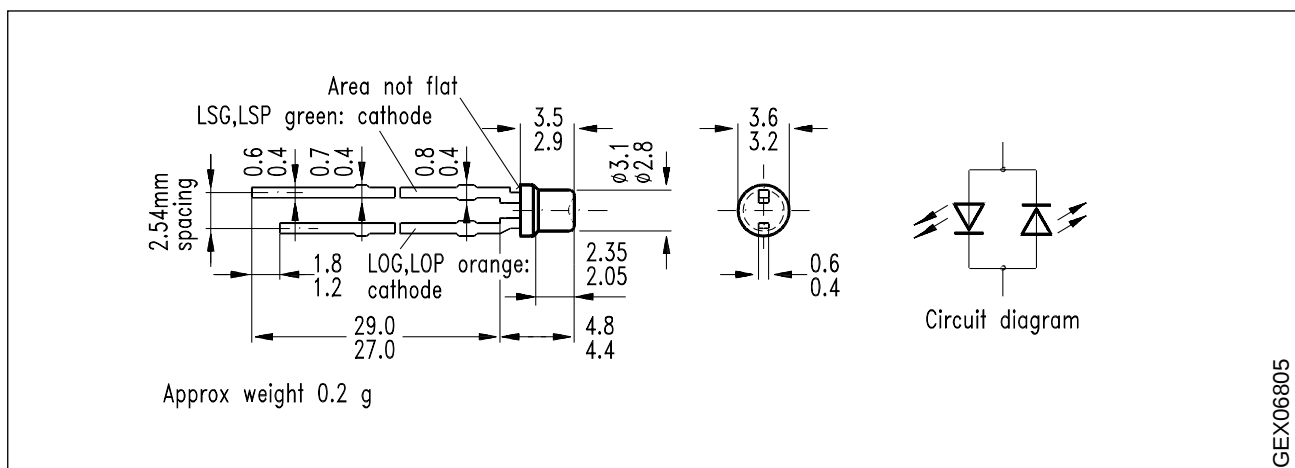
Relativer Lichtstrom  $\Phi_V / \Phi_{V(25^\circ\text{C})} = f(T_A)$

Relative luminous flux

$I_F = 15 \text{ mA}$



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



**Kathodenkennzeichnung:**

rot bzw. orange  
 grün bzw. pure green

kürzerer Lötspieß  
 längerer Lötspieß

**Cathode mark:**

red or orange  
 green or pure green

shorter solder lead  
 longer solder lead