

## BLUE LINE™

### Hyper 3 mm (T1) LED, Diffused Hyper-Bright LED

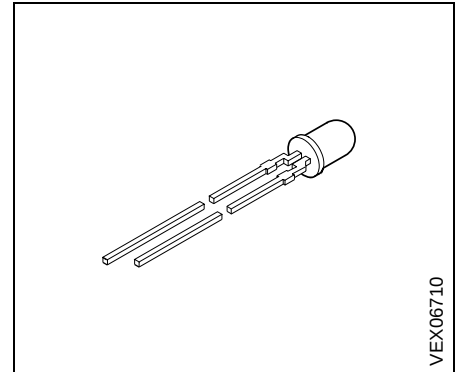
LB 3356

#### Besondere Merkmale

- nicht eingefärbtes, diffuses Gehäuse
- als optischer Indikator einsetzbar
- Lötspieße mit Aufsetzebene
- gegurtet lieferbar
- ESD-sicher bis 2 kV nach MIL STD 883D, Method 3051.7

#### Features

- colorless, diffused package
- for use as optical indicator
- solder leads with stand-off
- available taped on reel
- ESD withstand voltage of 2 kV according to MIL STD 883D, Method 3051.7



| Typ       | Emissions-<br>farbe  | Gehäuse-<br>farbe   | Lichtstärke                                                           | Bestellnummer |
|-----------|----------------------|---------------------|-----------------------------------------------------------------------|---------------|
| Type      | Color of<br>Emission | Color of<br>Package | Luminous<br>Intensity<br>$I_F = 10 \text{ mA}$<br>$I_V \text{ (mcd)}$ | Ordering Code |
| LB 3356   | blue                 | colorless           |                                                                       | Q62703-Q4192  |
| LB 3356-J |                      | diffused            | 4.0 ... 8.0                                                           |               |
| LB 3356-K |                      |                     | 6.3 ... 12.5                                                          |               |
| LB 3356-L |                      |                     | 10.0 ... 20.0                                                         |               |

Streuung der Lichtstärke in einer Verpackungseinheit  $I_{V \max} / I_{V \min} \leq 2.0$ .  
Luminous intensity ratio in one packaging unit  $I_{V \max} / I_{V \min} \leq 2.0$ .

Helligkeitswerte werden bei einer Strompulsdauer von 25 ms spezifiziert.  
Luminous intensity is specified at a current pulse duration of 25 ms.

## Grenzwerte Maximum Ratings

| Bezeichnung<br>Parameter                                                                                                                                                                                  | Symbol<br>Symbol | Werte<br>Values | Einheit<br>Unit |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|-----------------|
| Betriebstemperatur<br>Operating temperature range                                                                                                                                                         | $T_{op}$         | – 40 ... + 100  | °C              |
| Lagertemperatur<br>Storage temperature range                                                                                                                                                              | $T_{stg}$        | – 40 ... + 100  | °C              |
| Sperrschichttemperatur<br>Junction temperature                                                                                                                                                            | $T_j$            | + 100           | °C              |
| Durchlaßstrom<br>Forward current                                                                                                                                                                          | $I_F$            | 20              | mA              |
| Sperrspannung <sup>1)</sup><br>Reverse voltage <sup>1)</sup>                                                                                                                                              | $V_R$            | 5               | V               |
| Verlustleistung<br>Power dissipation<br>$T_A \leq 25\text{ °C}$                                                                                                                                           | $P_{tot}$        | 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 $\geq 16\text{ mm}^2$ ) | $R_{th JA}$      | 500             | K/W             |

1) Belastung in Sperrichtung sollte vermieden werden.

1) Reverse biasing should be avoided.

\*) PC-board: FR4

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

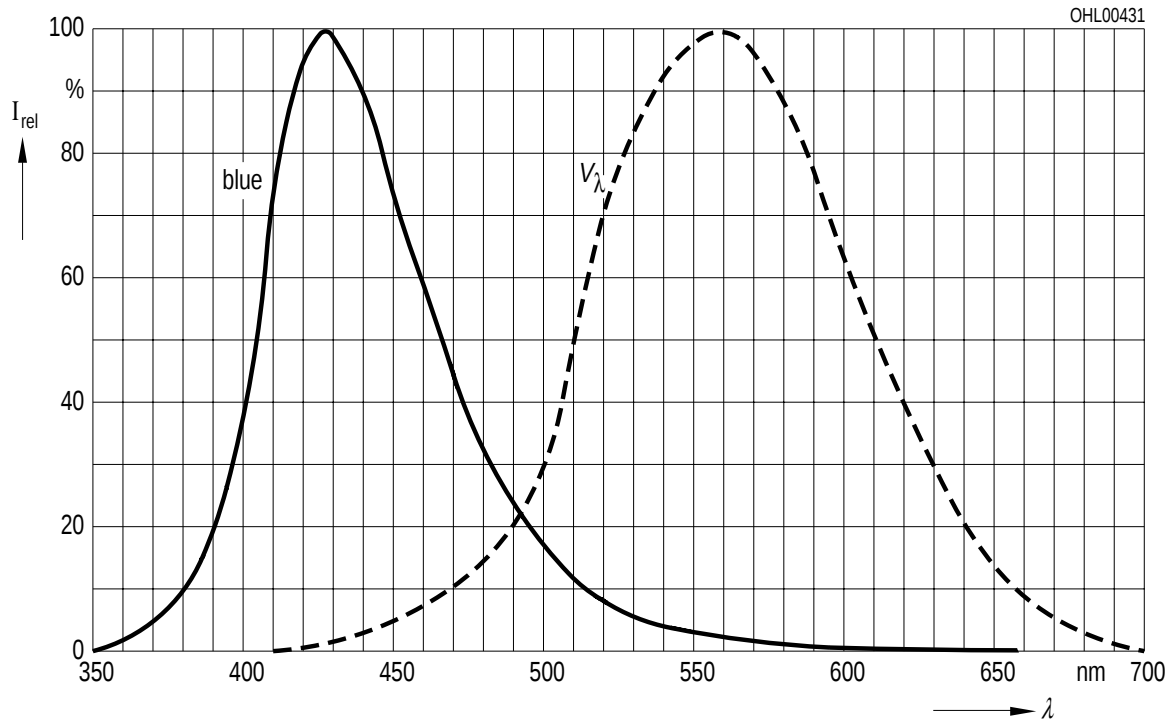
| Bezeichnung<br>Parameter                                                                                                                                  | Symbol<br>Symbol        | Werte<br>Values |      | Einheit<br>Unit |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------|------|-----------------|
|                                                                                                                                                           |                         | typ.            | max. |                 |
| Wellenlänge des emittierten Lichtes<br>Wavelength at peak emission<br>$I_F = 10\text{ mA}$                                                                | $\lambda_{\text{peak}}$ | 428             | —    | nm              |
| Dominantwellenlänge<br>Dominant wavelength<br>$I_F = 10\text{ mA}$                                                                                        | $\lambda_{\text{dom}}$  | 466             | —    | nm              |
| Spektrale Bandbreite bei 50% $I_{\text{rel max}}$<br>Spectral bandwidth at 50% $I_{\text{rel max}}$<br>$I_F = 10\text{ mA}$                               | $\Delta\lambda$         | 60              | —    | nm              |
| Abstrahlwinkel bei 50% $I_v$ (Vollwinkel)<br>Viewing angle at 50% $I_v$                                                                                   | $2\phi$                 | 120             | —    | Grad<br>deg.    |
| Durchlaßspannung<br>Forward voltage<br>$I_F = 10\text{ mA}$                                                                                               | $V_F$                   | 3.5             | 4.2  | V               |
| Sperrstrom<br>Reverse current<br>$V_R = 5\text{ V}$                                                                                                       | $I_R$                   | 0.01            | 10   | $\mu\text{A}$   |
| Temperaturkoeffizient von $\lambda_{\text{dom}}$ ( $I_F = 10\text{ mA}$ )<br>Temperature coefficient of $\lambda_{\text{dom}}$ ( $I_F = 10\text{ mA}$ )   | $TC_{\lambda}$          | 0.03            | —    | nm/K            |
| Temperaturkoeffizient von $\lambda_{\text{peak}}$ ( $I_F = 10\text{ mA}$ )<br>Temperature coefficient of $\lambda_{\text{peak}}$ ( $I_F = 10\text{ mA}$ ) | $TC_{\lambda}$          | 0.004           | —    | nm/K            |
| Temperaturkoeffizient von $V_F$ ( $I_F = 10\text{ mA}$ )<br>Temperature coefficient of $V_F$ ( $I_F = 10\text{ mA}$ )                                     | $TC_V$                  | — 3.1           | —    | mV/K            |

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

**Relative spectral emission**

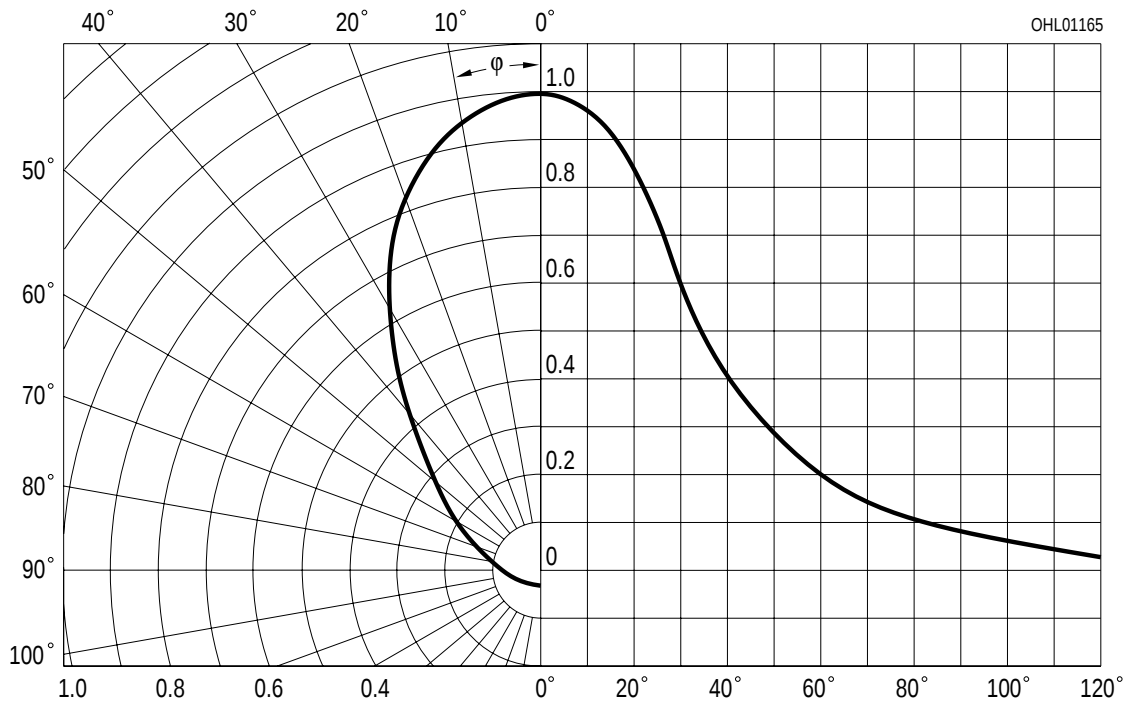
$V(\lambda)$  = spektrale Augenempfindlichkeit

Standard eye response curve



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

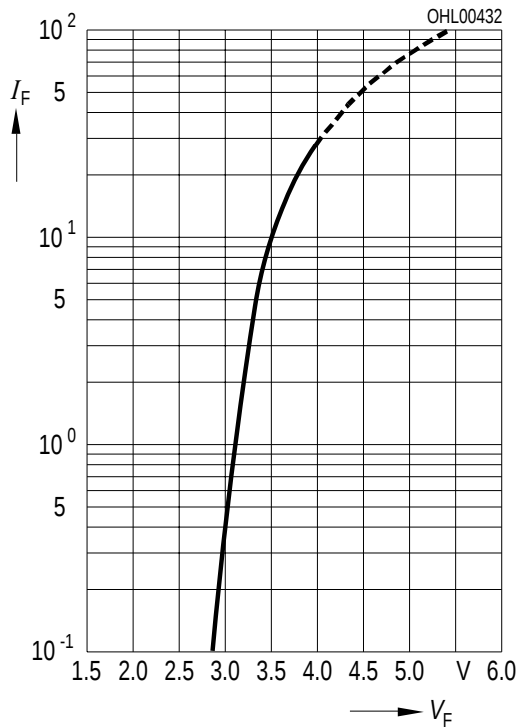
**Radiation characteristic**



**Durchlaßstrom**  $I_F = f(V_F)$

**Forward current**

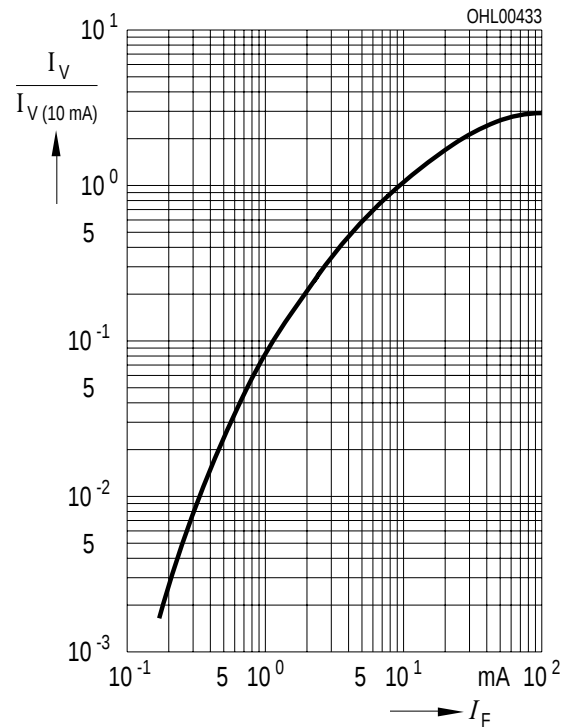
$T_A = 25\text{ °C}$



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

**Relative luminous intensity**

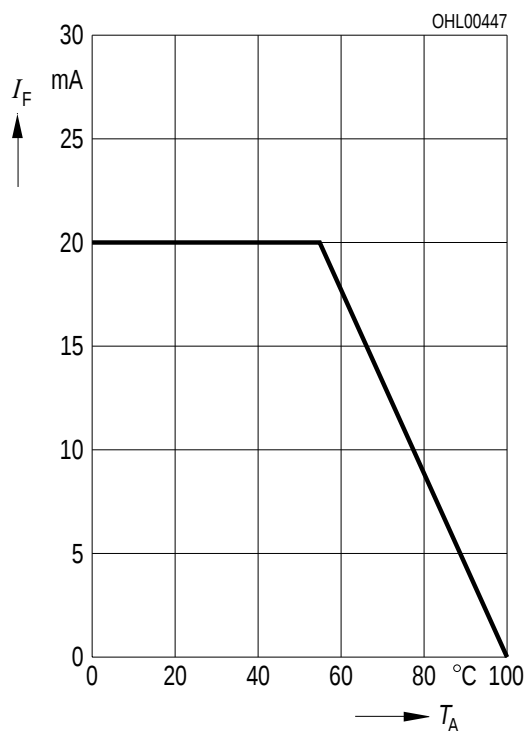
$T_A = 25\text{ °C}$



**Maximal zulässiger Durchlaßstrom**

**Max. permissible forward current**

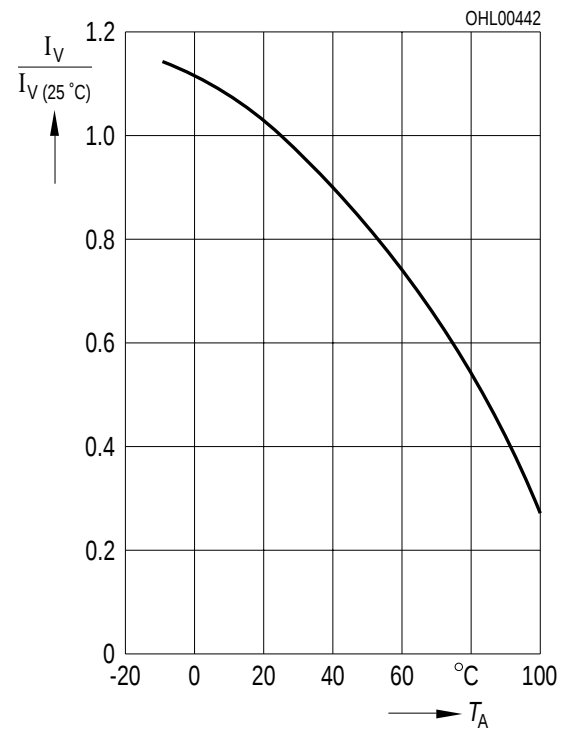
$I_F = f(T_A)$



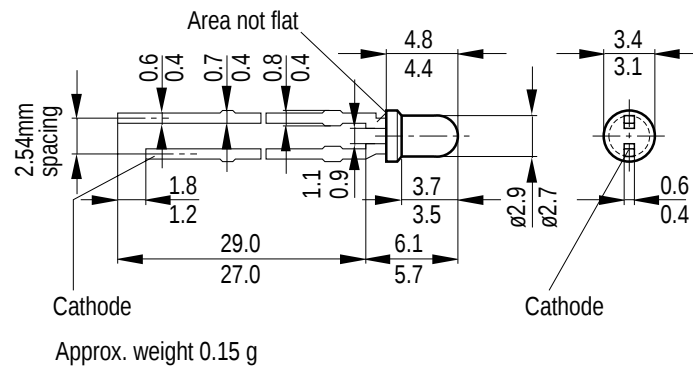
**Relative Lichtstärke**  $I_V/I_{V(25\text{ °C})} = f(T_A)$

**Relative luminous intensity**

$I_F = 10\text{ mA}$



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



GE00951

**Kathodenkennung:** Kürzerer Lötspieß  
**Cathode mark:** Short solder lead