

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

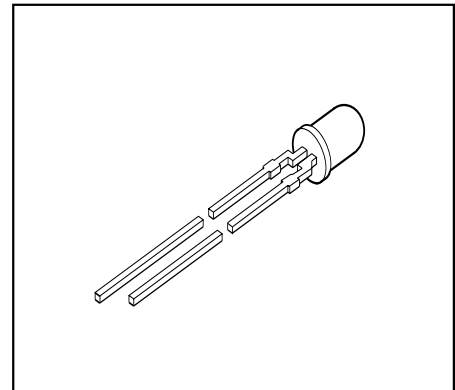
LS 3366, LA 3366, LO 3366  
LY 3366

### Besondere Merkmale

- eingefärbtes, diffuses Gehäuse
- zur Einkopplung in Lichtleiter
- als optischer Indikator einsetzbar
- Lötspieße mit Aufsetzebene
- gegurtet lieferbar
- Störimpulsfest nach DIN 40839

### Features

- colored, diffused package
- optical coupling into light pipes
- for use as optical indicator
- solder leads with stand-off
- available taped on reel
- load dump resistant acc. to DIN 40839



Typ Type	Emissionsfarbe Color of Emission	Gehäusefarbe Color of Package	Lichtstärke Luminous Intensity $I_F = 20 \text{ mA}$ $I_V$ (mcd)	Bestellnummer Ordering Code
LS 3366-NR	super-red	red diffused	25 ... 200	Q62703-Q3457
LS 3366-P			40 ... 80	Q62703-Q3458
LS 3366-Q			63 ... 125	Q62703-Q3459
LS 3366-R			100 ... 200	Q62703-Q3460
LS 3366-PS			40 ... 320	Q62703-Q3461
LA 3366-PS	amber	orange diffused	40 ... 320	Q62703-Q3881
LA 3366-Q			63 ... 125	Q62703-Q3882
LA 3366-R			100 ... 200	Q62703-Q3883
LA 3366-S			160 ... 320	Q62703-Q3884
LA 3366-QT			63 ... 500	Q62703-Q3885
LO 3366-PS	orange	orange diffused	40 ... 320	Q62703-Q3127
LO 3366-Q			63 ... 125	Q62703-Q3172
LO 3366-R			100 ... 200	Q62703-Q3173
LO 3366-S			160 ... 320	Q62703-Q3174
LO 3366-QT			63 ... 500	Q62703-Q3175
LY 3366-PS	yellow	yellow diffused	40 ... 320	Q62703-Q3462
LY 3366-Q			63 ... 125	Q62703-Q3464
LY 3366-R			100 ... 200	Q62703-Q3465
LY 3366-S			160 ... 320	Q62703-Q3463
LY 3366-QT			63 ... 500	Q62703-Q3466

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 Parameter	Symbol Symbol	Werte Values		Einheit Unit
		LS, LO, LA	LY	
Betriebstemperatur Operating temperature range	$T_{op}$	- 55... + 100		°C
Lagertemperatur Storage temperature range	$T_{stg}$	- 55... + 100		°C
Sperrschichttemperatur Junction temperature	$T_j$	+ 100		°C
Durchlaßstrom Forward current	$I_F$	30	20	mA
Stoßstrom Surge current $t \leq 10 \mu s, D = 0.005$	$I_{FM}$	1	0.2	A
Sperrspannung <sup>1)</sup> Reverse voltage <sup>1)</sup>	$V_R$	3		V
Verlustleistung Power dissipation $T_A \leq 25 \text{ °C}$	$P_{tot}$	80	55	mW
Wärmewiderstand Thermal resistance Sperrschicht / Umgebung Junction / air	$R_{th JA}$	500		K/W

1) Belastung in Sperrichtung sollte vermieden werden.

1) Reverse biasing should be avoided.

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

**Characteristics**

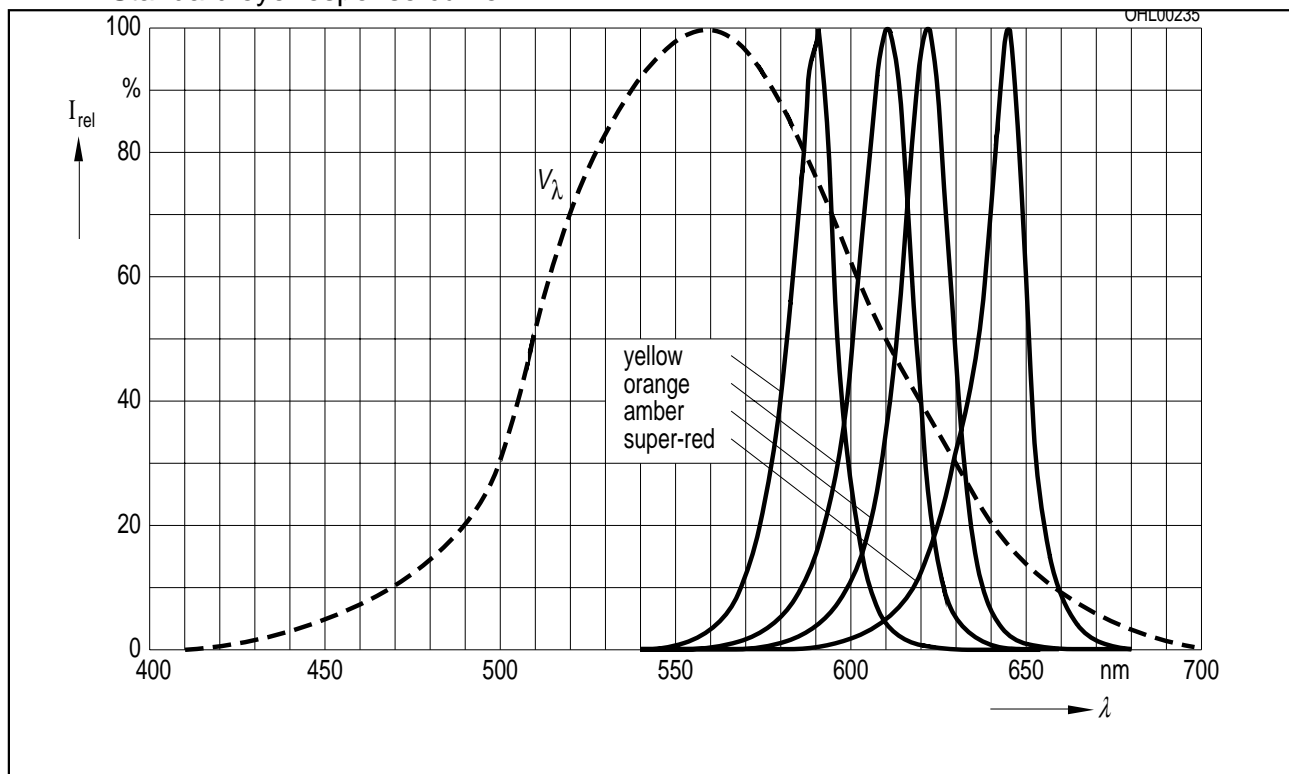
Bezeichnung Parameter	Symbol Symbol	Werte Values				Einheit Unit
		LS	LA	LO	LY	
Wellenlänge des emittierten Lichtes Wavelength at peak emission $I_F = 20\text{ mA}$	(typ.) $\lambda_{\text{peak}}$ (typ.)	645	622	610	591	nm
Dominantwellenlänge Dominant wavelength $I_F = 20\text{ mA}$	(typ.) $\lambda_{\text{dom}}$ (typ.)	632	615	605	587	nm
Spektrale Bandbreite bei 50% $I_{\text{rel max}}$ Spectral bandwidth at 50% $I_{\text{rel max}}$ $I_F = 20\text{ mA}$	(typ.) $\Delta\lambda$ (typ.)	16	16	16	15	nm
Abstrahlwinkel bei 50% $I_v$ (Vollwinkel) Viewing angle at 50% $I_v$	$2\phi$	70	70	70	70	Grad deg.
Durchlaßspannung Forward voltage $I_F = 20\text{ mA}$	(typ.) $V_F$ (max.) $V_F$	2.0 2.6	2.0 2.6	2.0 2.6	2.0 2.6	V V
Sperrstrom Reverse current $V_R = 3\text{ V}$	(typ.) $I_R$ (max.) $I_R$	0.01 10	0.01 10	0.01 10	0.01 10	$\mu\text{A}$ $\mu\text{A}$
Temperaturkoeffizient von $\lambda_{\text{dom}}$ ( $I_F = 20\text{ mA}$ ) Temperature coefficient of $\lambda_{\text{dom}}$ ( $I_F = 20\text{ mA}$ )	$TC_\lambda$	0.014	0.062	0.067	0.096	nm/K
Temperaturkoeffizient von $\lambda_{\text{peak}}$ , $I_F = 20\text{ mA}$ Temperature coefficient of $\lambda_{\text{peak}}$ , $I_F = 20\text{ mA}$	(typ.) $TC_\lambda$ (typ.)	0.14	0.13	0.13	0.13	nm/K
Temperaturkoeffizient von $V_F$ , $I_F = 20\text{ mA}$ Temperature coefficient of $V_F$ , $I_F = 20\text{ mA}$	(typ.) $TC_V$ (typ.)	- 1.95	- 1.78	- 1.67	- 2.51	mV/K

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

### Relative spectral emission

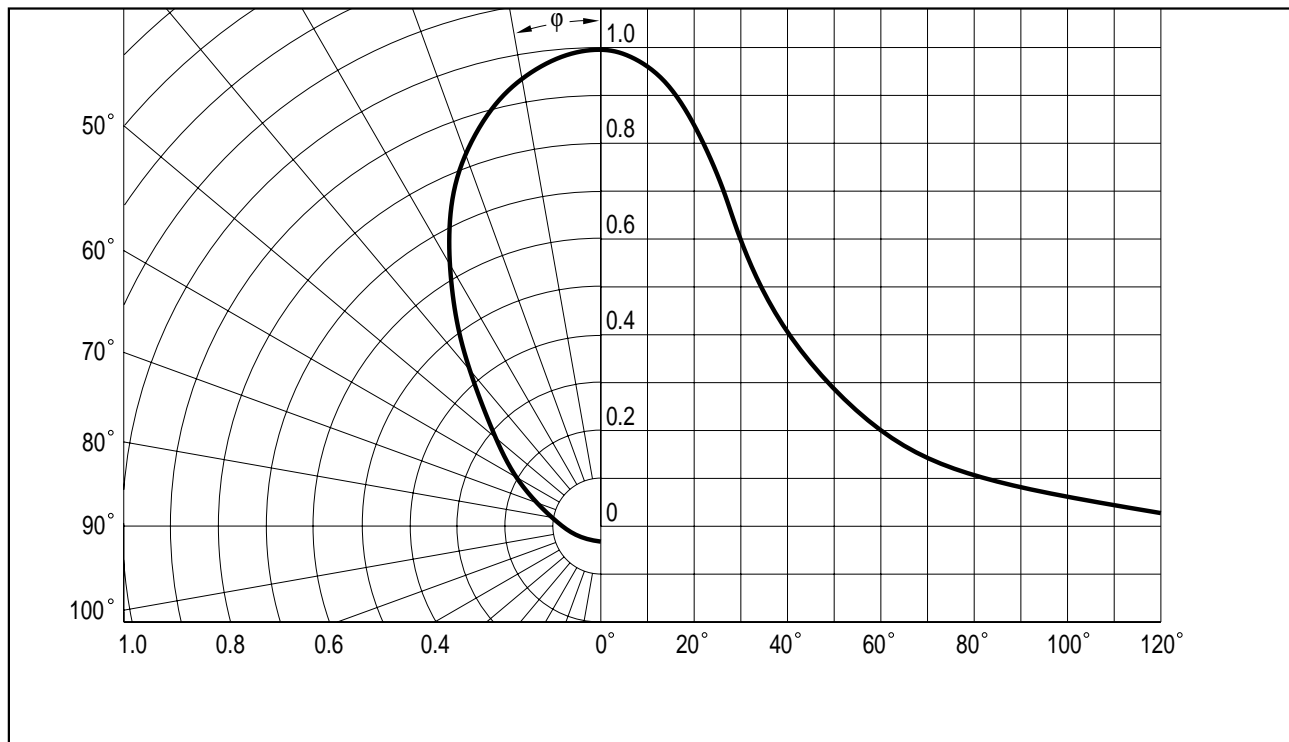
$V(\lambda)$  = spektrale Augenempfindlichkeit

Standard eye response curve



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

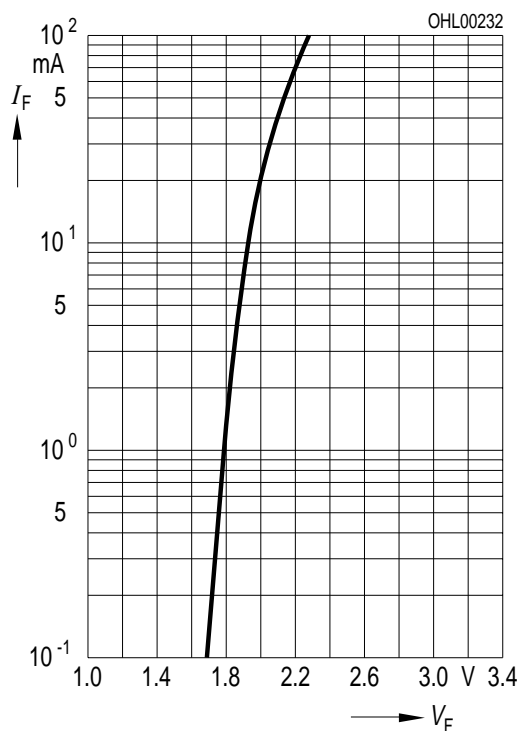
### Radiation characteristic



**Durchlaßstrom  $I_F = f(V_F)$**

**Forward current**

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



**Maximal zulässiger Durchlaßstrom**

**Max. permissible forward current**

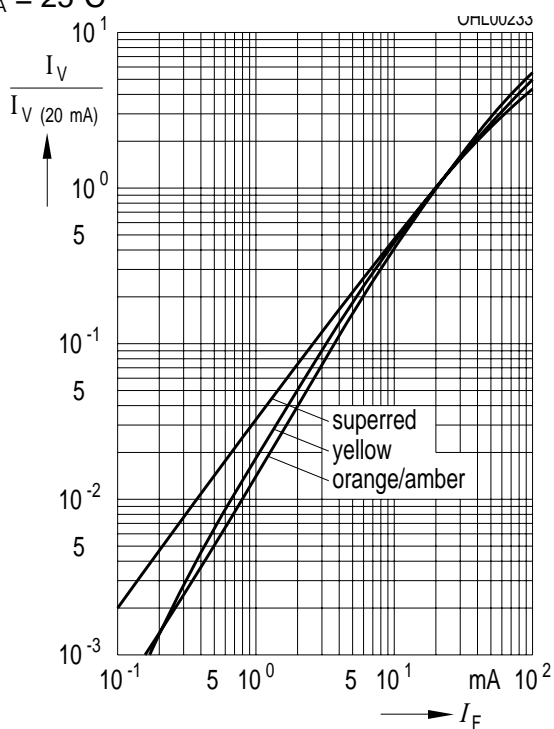
$I_F = f(T_A)$



**Relative Lichtstärke  $I_V / I_{V(20\text{ mA})} = f(I_F)$**

**Relative luminous intensity**

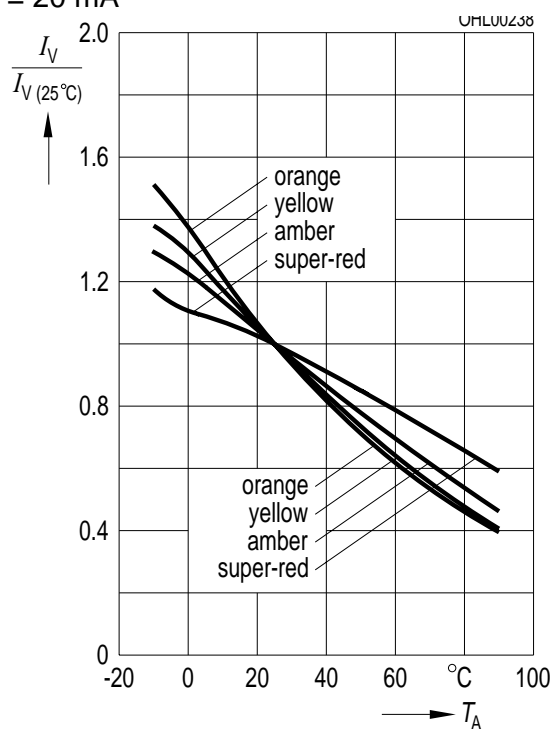
$T_A = 25^\circ\text{C}$



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

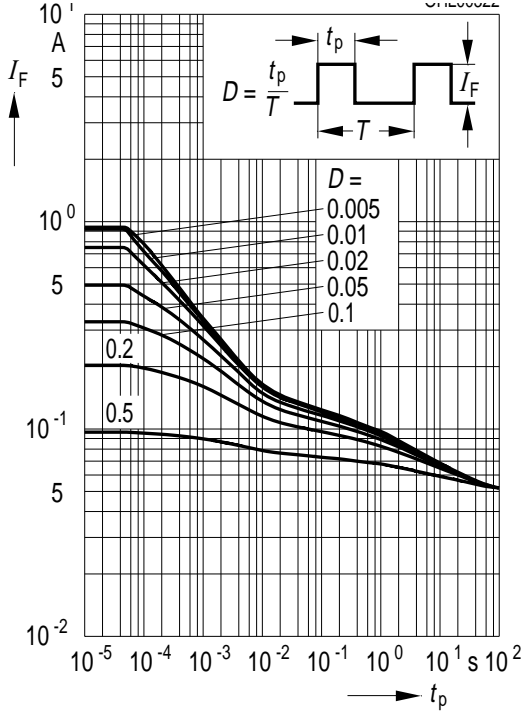
**Relative luminous intensity**

$I_F = 20\text{ mA}$



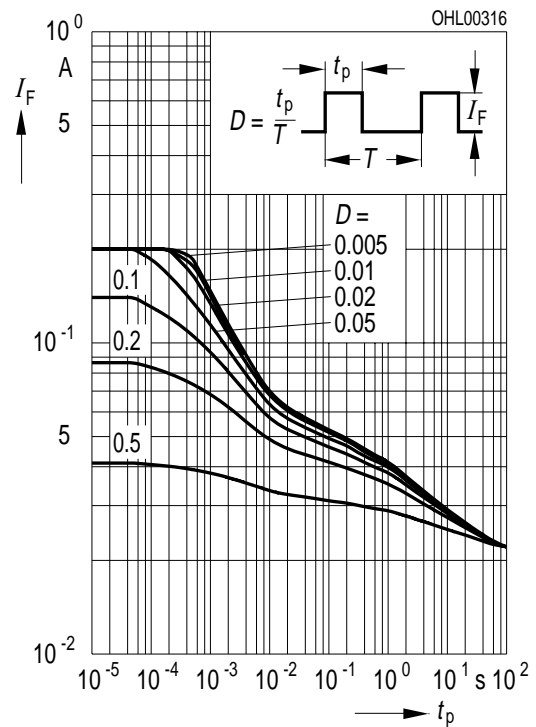
**Zulässige Impulsbelastbarkeit  $I_F = f(t_p)$**   
**Permissible pulse handling capability**  
**LS, LA, LO**

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

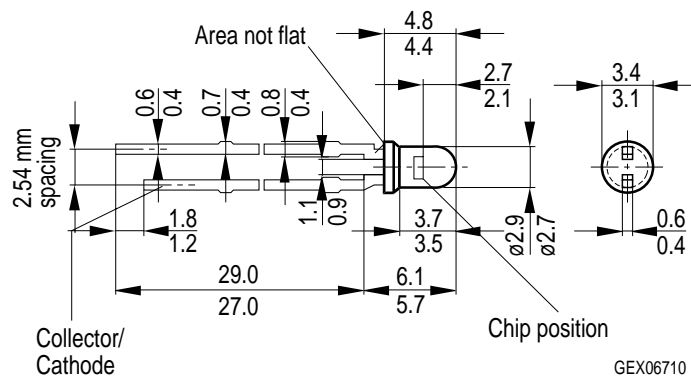


**Zulässige Impulsbelastbarkeit  $I_F = f(t_p)$**   
**Permissible pulse handling capability**  
**LY**

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



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



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