

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

LS 3366, LA 3366, LO 3366, LY 3366



## Besondere Merkmale

- **Gehäusetyyp:** eingefärbtes, diffuses 3 mm (T1) Gehäuse
- **Besonderheit des Bauteils:** Lötspieße mit Aufsetzebene
- **Wellenlänge:** 632 nm (super-rot), 615 nm (amber), 605 nm (orange), 587 nm (gelb)
- **Abstrahlwinkel:** 70°
- **Technologie:** InGaAlP
- **optischer Wirkungsgrad:** 11 lm/W (gelb, orange, amber), 7 lm/W (super-rot)
- **Gruppierungsparameter:** Lichtstärke
- **Lötmethode:** Wellenlöten (TTW)
- **Verpackung:** Schüttgut, gegurtet lieferbar

## Anwendungen

- optischer Indikator
- Hinterleuchtung (LCD, Schalter, Tasten, Displays, Werbebeleuchtung, Allgemeinbeleuchtung)
- Innenbeleuchtung im Automobilbereich (z.B. Instrumentenbeleuchtung, u.ä.)
- Markierungsbeleuchtung (z.B. Stufen, Fluchtwege, u.ä.)
- Signal- und Symbolleuchten

## Features

- **package:** colored, diffused 3 mm (T1) package
- **feature of the device:** solder leads with stand-off
- **wavelength:** 632 nm (super-red), 615 nm (amber), 605 nm (orange), 587 nm (yellow)
- **viewing angle:** 70°
- **technology:** InGaAlP
- **optical efficiency:** 11 lm/W (yellow, orange, amber), 7 lm/W (super-red)
- **grouping parameter:** luminous intensity
- **soldering methods:** TTW soldering
- **packing:** bulk, available taped on reel

## Applications

- coupling into light guides
- backlighting (LCD, switches, keys, displays, illuminated advertising, general lighting)
- interior automotive lighting. (e.g. dashboard backlighting, etc.)
- marker lights (e.g. steps, exit ways, etc.)
- signal and symbol luminaire

LS 3366, LA 3366, LO 3366, LY 3366

Typ Type	Emissions- farbe Color of Emission	Gehäuse- farbe Color of Package	Lichtstärke Luminous Intensity $I_F = 20 \text{ mA}$ $I_V \text{ (mcd)}$	Lichtstrom Luminous Flux $I_F = 20 \text{ mA}$ $\Phi_V \text{ (mlm)}$	Bestellnummer Ordering Code
LS 3366-NR	super-red	red diffused	28 ... 180	360 (typ.)	Q62703-Q3457
LS 3366-P			45 ... 71	190 (typ.)	Q62703-Q3458
LS 3366-Q			71 ... 112	300 (typ.)	Q62703-Q3459
LS 3366-R			112 ... 180	480 (typ.)	Q62703-Q3460
LS 3366-PS			45 ... 280	580 (typ.)	Q62703-Q3461
LA 3366-PS	amber	orange diffused	45 ... 280	540 (typ.)	Q62703-Q3881
LA 3366-Q			71 ... 112	280 (typ.)	Q62703-Q3882
LA 3366-R			112 ... 180	450 (typ.)	Q62703-Q3883
LA 3366-S			180 ... 280	720 (typ.)	Q62703-Q3884
LA 3366-QT			71 ... 450	840 (typ.)	Q62703-Q3885
LO 3366-PS	orange	orange diffused	45 ... 280	540 (typ.)	Q62703-Q3127
LO 3366-Q			71 ... 112	280 (typ.)	Q62703-Q3172
LO 3366-R			112 ... 180	450 (typ.)	Q62703-Q3173
LO 3366-S			180 ... 280	720 (typ.)	Q62703-Q3174
LO 3366-QT			71 ... 450	840 (typ.)	Q62703-Q3175
LY 3366-PS	yellow	yellow diffused	45 ... 280	540 (typ.)	Q62703-Q3462
LY 3366-Q			71 ... 112	280 (typ.)	Q62703-Q3464
LY 3366-R			112 ... 180	450 (typ.)	Q62703-Q3465
LY 3366-S			180 ... 280	720 (typ.)	Q62703-Q3463
LY 3366-QT			71 ... 450	840 (typ.)	Q62703-Q3466

Helligkeitswerte werden mit einer Stromeinprägedauer von 25 ms und einer Genauigkeit von  $\pm 11 \%$  ermittelt.

Luminous intensity is tested at a current pulse duration of 25 ms and an accuracy of  $\pm 11 \%$ .

**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		mA
Stoßstrom Surge current $t \leq 10 \mu s, D = 0.005$	$I_{FM}$	1	0.2	A
Sperrspannung Reverse voltage	$V_R$	3		V
Leistungsaufnahme Power dissipation $T_A \leq 25 \text{ °C}$	$P_{tot}$	80		mW
Wärmewiderstand Thermal resistance Sperrschicht/Umgebung Junction/ambient	$R_{th JA}$	500		K/W
Sperrschicht/Löt­pad Junction/solder point Montage auf PC-Board FR 4 (Padgröße $\geq 16 \text{ mm}^2$ ) mounted on PC board FR 4 (pad size $\geq 16 \text{ mm}^2$ ) Minimale Beinchenlänge Minimum lead length	$R_{th JS}$	280		K/W

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

**Characteristics**

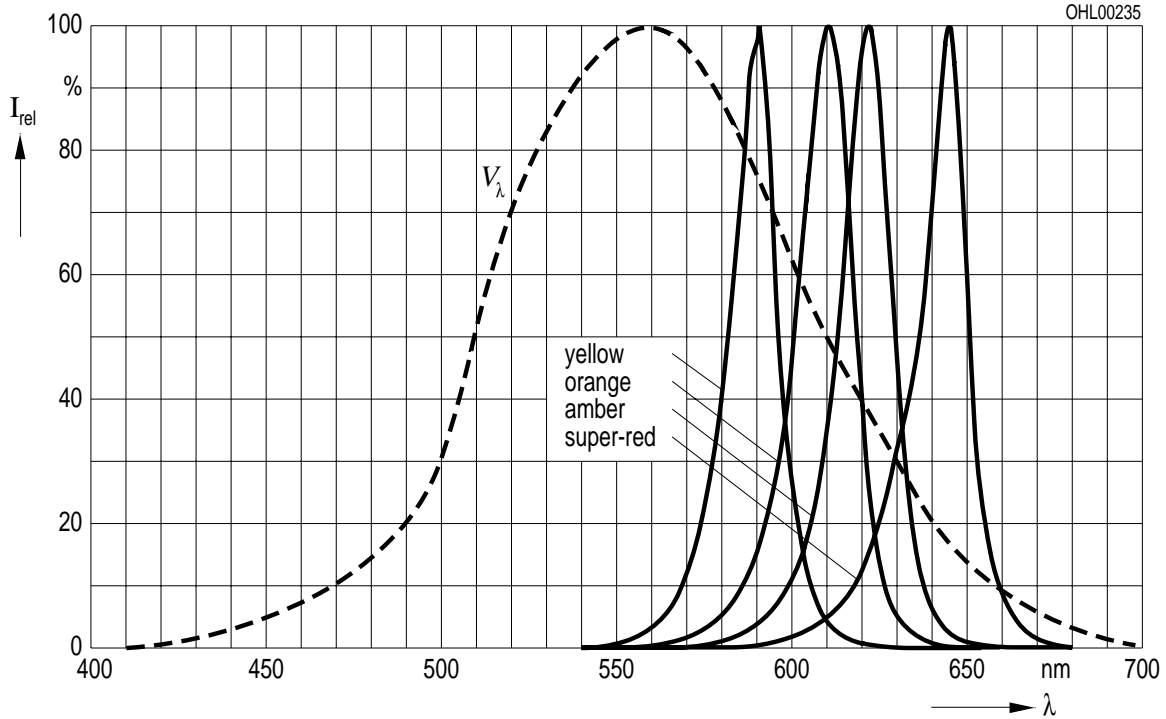
Bezeichnung Parameter	Symbol Symbol	Werte Values				Einheit Unit
		LS	LA	LO	LY	
Wellenlänge des emittierten Lichtes Wavelength at peak emission $I_F = 20\text{ mA}$	(typ.) $\lambda_{\text{peak}}$	645	622	610	591	nm
Dominantwellenlänge Dominant wavelength $I_F = 20\text{ mA}$	(typ.) $\lambda_{\text{dom}}$	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.) $\Delta\lambda$	16	16	16	15	nm
Abstrahlwinkel bei 50 % $I_V$ (Vollwinkel) Viewing angle at 50 % $I_V$	(typ.) $2\phi$	70	70	70	70	Grad deg.
Durchlassspannung Forward voltage $I_F = 20\text{ mA}$	(typ.) $V_F$ (max.) $V_F$	2.0 2.5	2.0 2.5	2.0 2.5	2.0 2.5	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 $\lambda_{\text{peak}}$ Temperature coefficient of $\lambda_{\text{peak}}$ $I_F = 20\text{ mA}$	(typ.) $TC_{\lambda_{\text{peak}}}$	0.14	0.13	0.13	0.13	nm/K
Temperaturkoeffizient von $\lambda_{\text{dom}}$ Temperature coefficient of $\lambda_{\text{dom}}$ $I_F = 20\text{ mA}$	(typ.) $TC_{\lambda_{\text{dom}}}$	0.01	0.06	0.07	0.10	nm/K
Temperaturkoeffizient von $V_F$ Temperature coefficient of $V_F$ $I_F = 20\text{ mA}$	(typ.) $TC_V$	-2.0	-1.8	-1.7	-2.5	mV/K
Optischer Wirkungsgrad Optical efficiency $I_F = 20\text{ mA}$	(typ.) $\eta_{\text{opt}}$	7	11	11	11	lm/W

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

**Relative Spectral Emission**

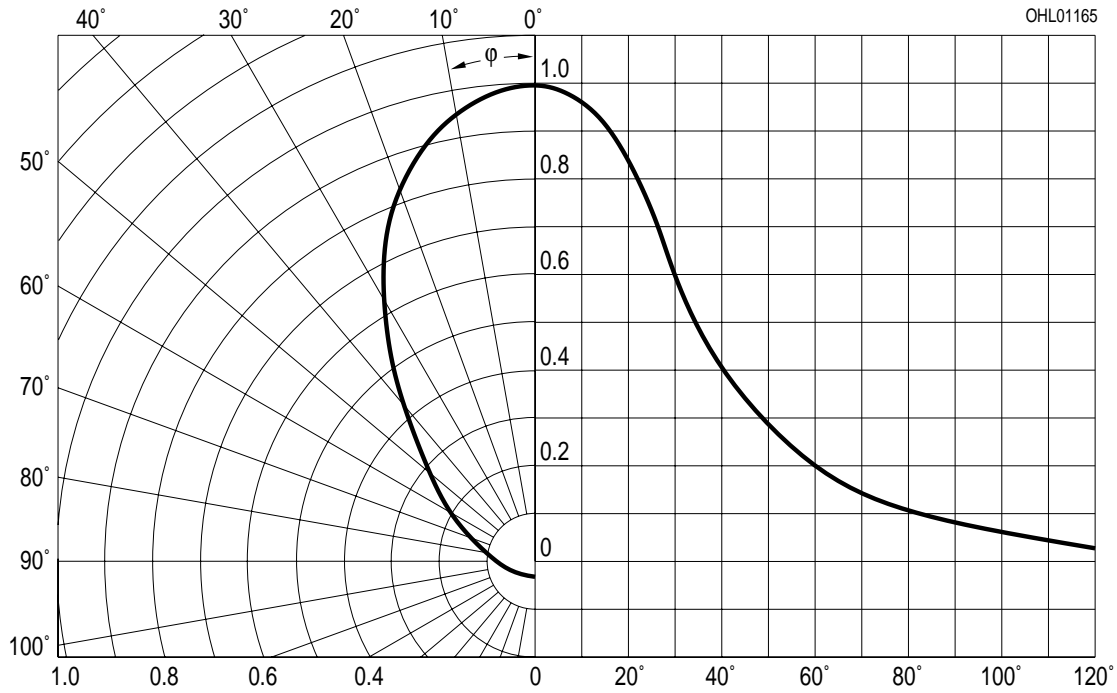
$V(\lambda)$  = spektrale Augenempfindlichkeit

Standard eye response curve



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

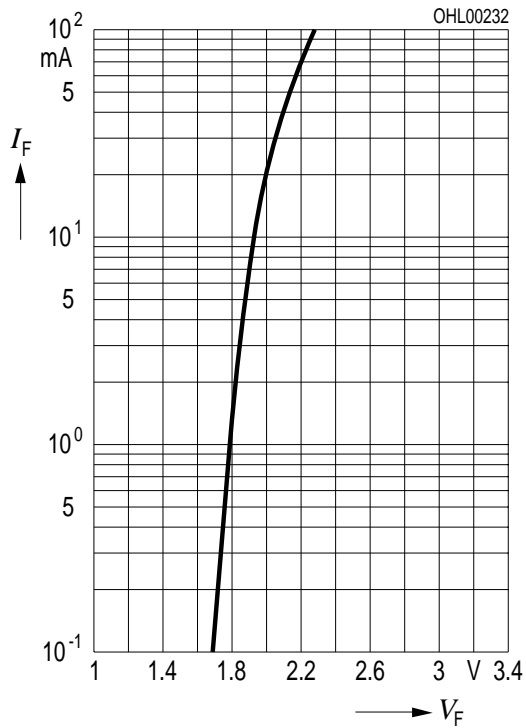
**Radiation Characteristic**



**Durchlassstrom  $I_F = f(V_F)$**

**Forward Current**

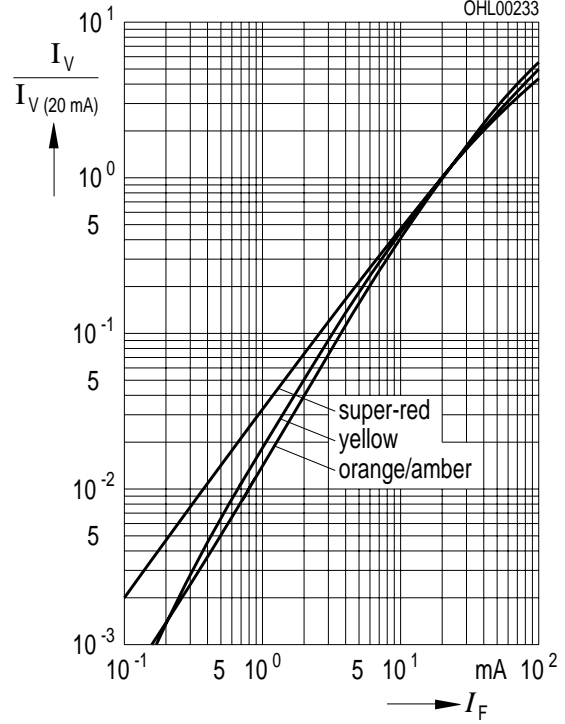
$T_A = 25\text{ }^\circ\text{C}$



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

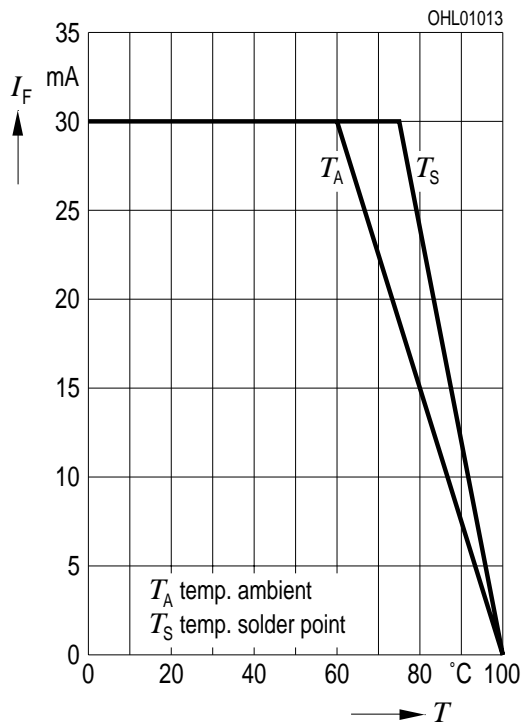
**Relative Luminous Intensity**

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



**Maximal zulässiger Durchlassstrom  $I_F = f(T)$**

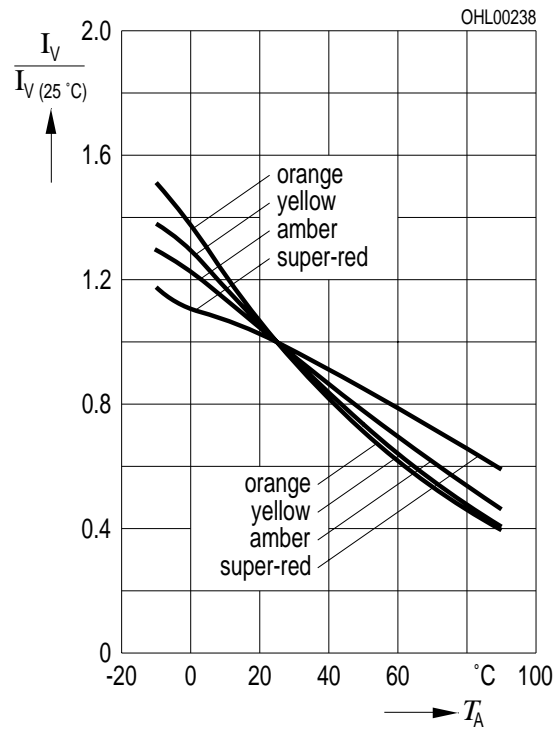
**Max. Permissible Forward Current**



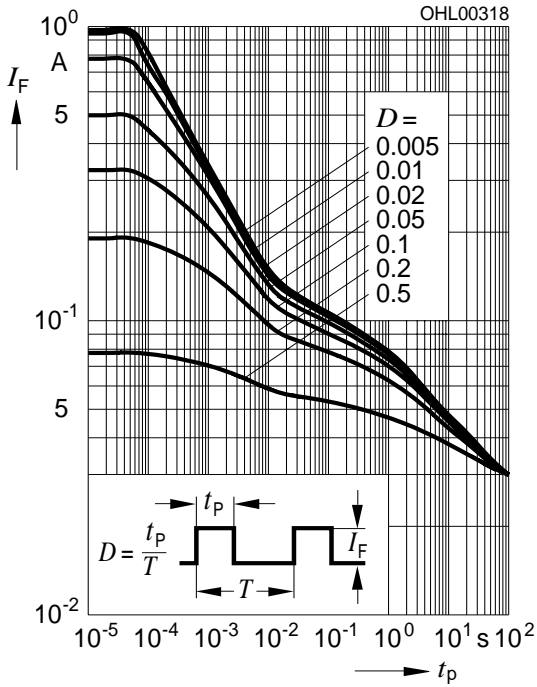
**Relative Lichtstärke  $I_V/I_{V(25\text{ }^\circ\text{C})} = f(T_A)$**

**Relative Luminous Intensity**

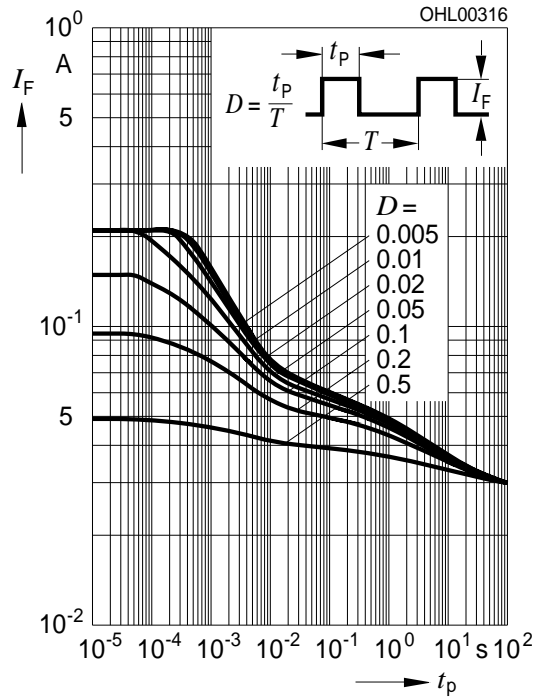
$I_F = 20\text{ mA}$



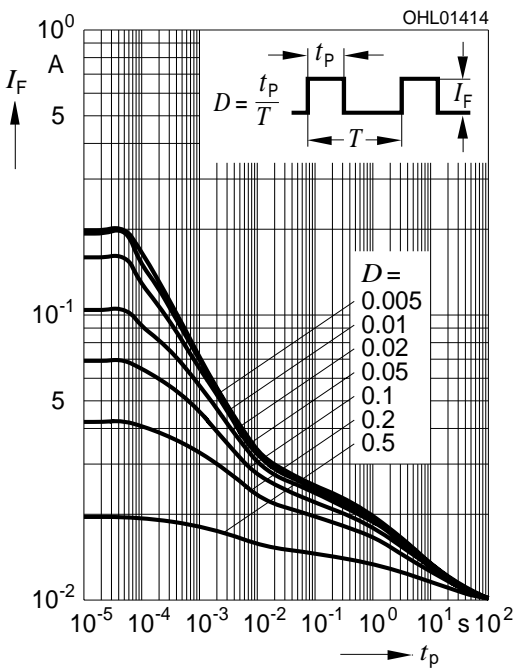
**Zulässige Impulsbelastbarkeit  $I_F = f(t_p)$**   
**Permissible Pulse Handling Capability**  
 Duty cycle  $D =$  parameter,  $T_A = 25\text{ °C}$   
**LS, LA, LO**



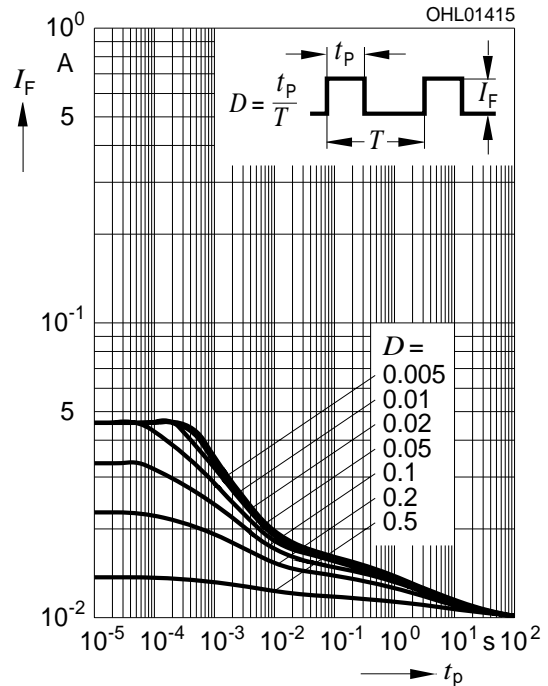
**Zulässige Impulsbelastbarkeit  $I_F = f(t_p)$**   
**Permissible Pulse Handling Capability**  
 Duty cycle  $D =$  parameter,  $T_A = 25\text{ °C}$   
**LY**



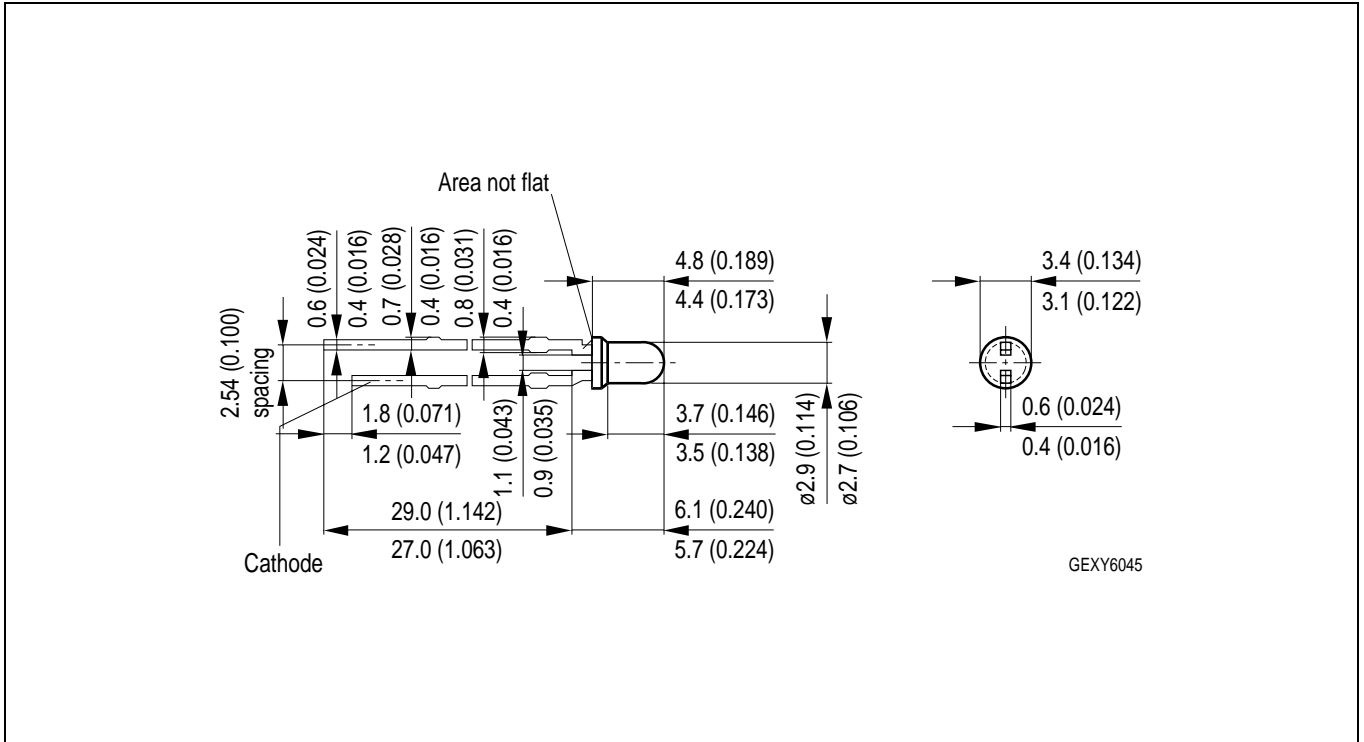
**Zulässige Impulsbelastbarkeit  $I_F = f(t_p)$**   
**Permissible Pulse Handling Capability**  
 Duty cycle  $D =$  parameter,  $T_A = 85\text{ °C}$   
**LS, LA, LO**



**Zulässige Impulsbelastbarkeit  $I_F = f(t_p)$**   
**Permissible Pulse Handling Capability**  
 Duty cycle  $D =$  parameter,  $T_A = 85\text{ °C}$   
**LY**



**Maßzeichnung  
Package Outlines**



Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch).

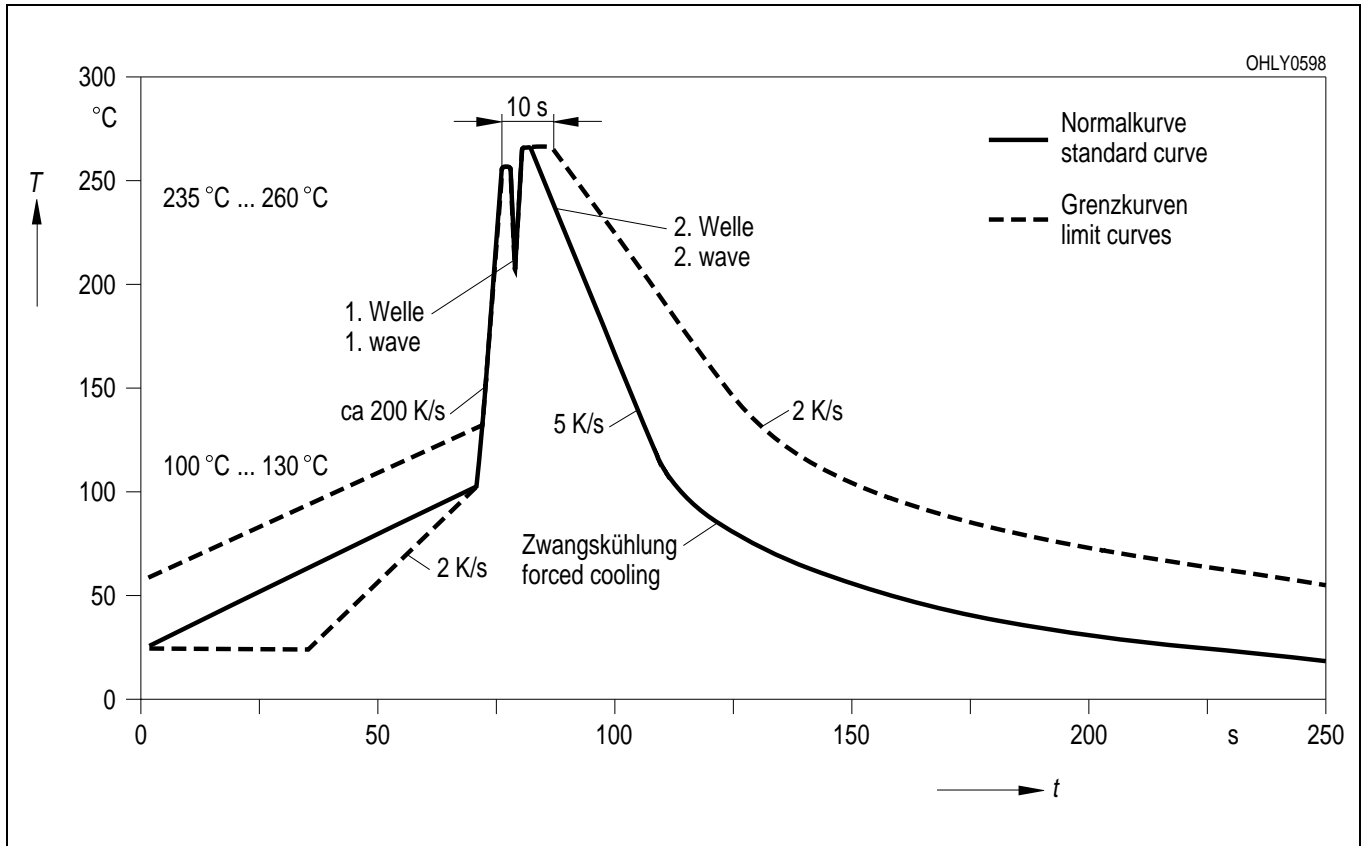
**Kathodenkennung:** kürzerer Lötspieß  
**Cathode mark:** short solder lead  
**Gewicht / Approx. weight:** 0.15 g



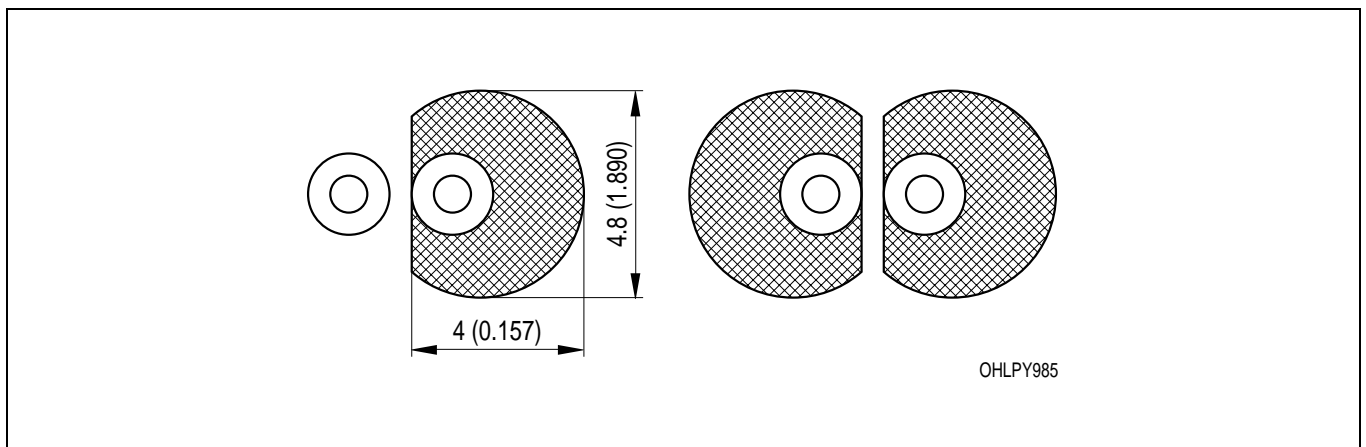
**Lötbedingungen**  
**Soldering Conditions**

**Wellenlöten (TTW)**(nach CECC 00802)

**TTW Soldering**(acc. to CECC 00802)



**Empfohlenes Lötpaddesign** Wellenlöten (TTW)  
**Recommended Solder Pad** TTW Soldering



Maße werden wie folgt angegeben: mm (inch) / Dimensions are specified as follows: mm (inch)